# Fiscal Policy in the Euro Area Crisis and its Impact on Growth

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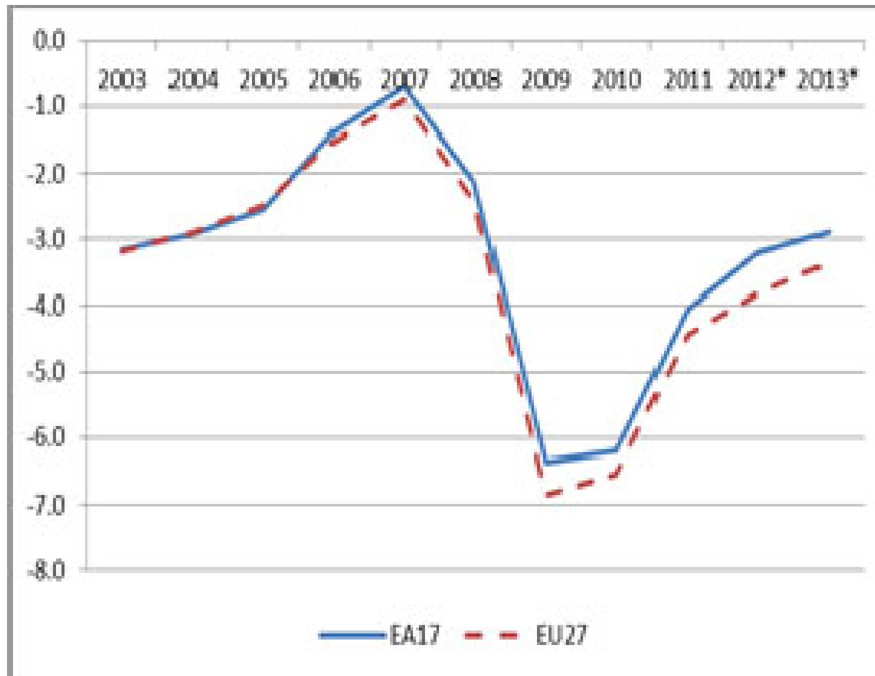
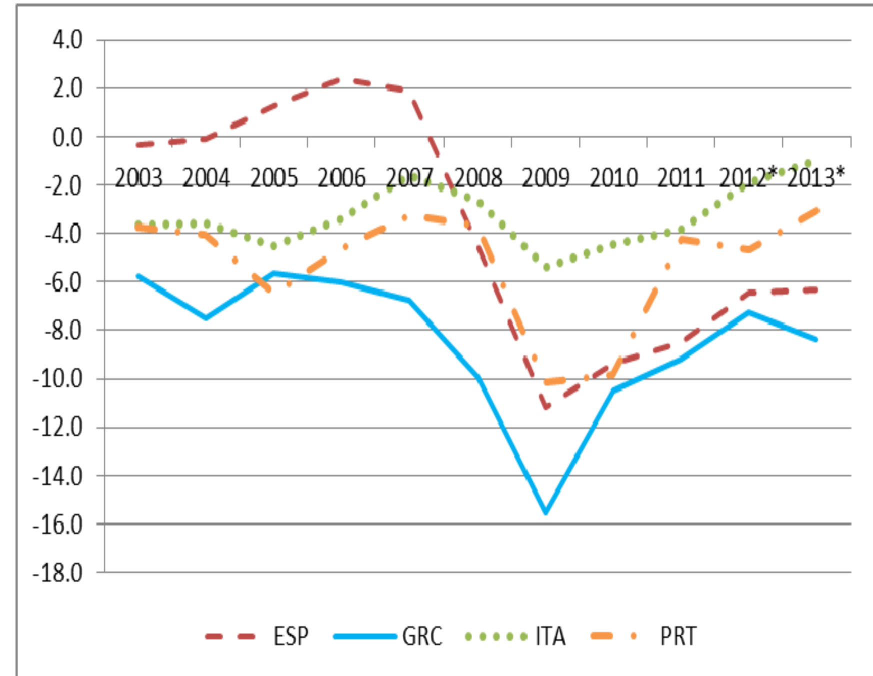
The views expressed here are those of the author and should not be attributed to the European Commission.

# OUTLINE

- Fiscal developments in EU
- Fiscal multipliers in QUEST model
- Empirical evidence from estimated models
- Counterfactual: costs of rising sovereign risk premia
- Designing more growth-friendly reforms

# 2. Fiscal developments




2007-09: crisis -> automatic stabilisers and stimulus -> rising deficits
2010-11: fiscal consolidations

# 2. Fiscal developments

Figure 2.5: Sovereign bond spreads- selected MS (10y yield spreads to the German Bund)

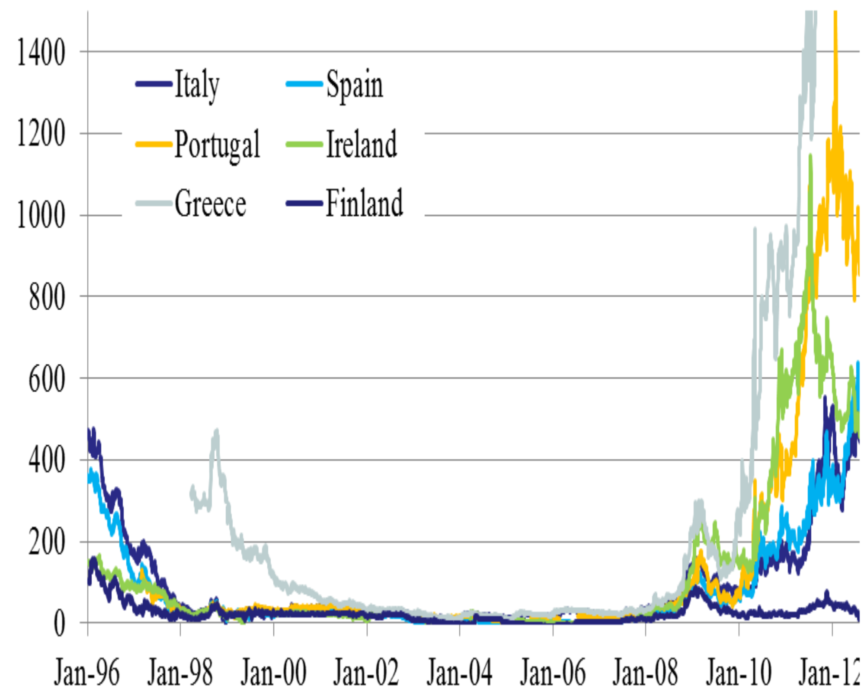
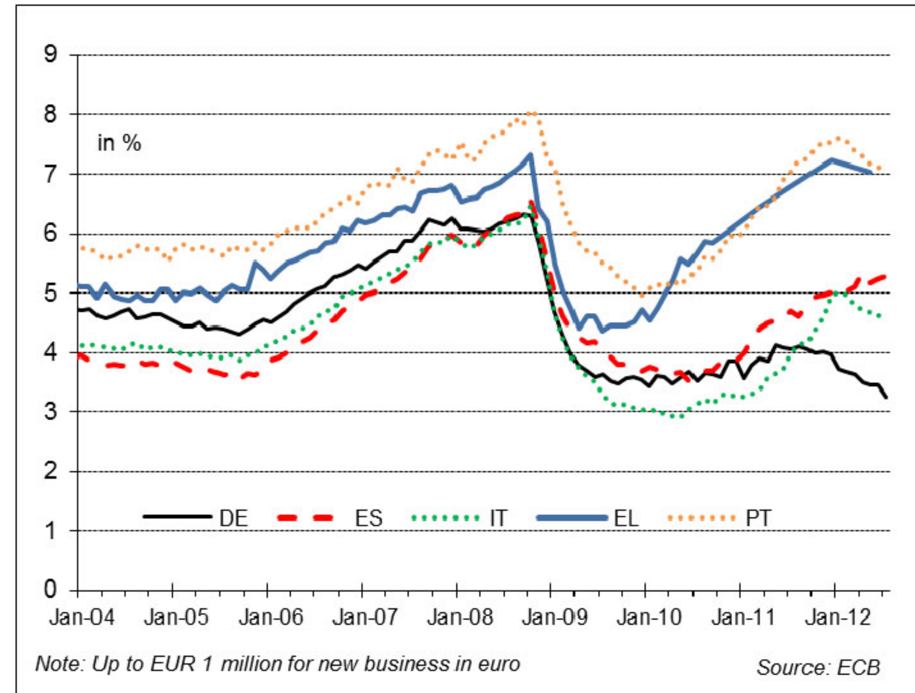



Figure 2.6 MFI interest rates on loans to NFC (all maturities




- Rising sovereign spreads
- Increasing segmentation of euro area financial market

## 3. QUEST III model

- Standard New-Keynesian DSGE model (Ratto *et al*, 2009)
- Extension : housing sector and credit-constrained consumers (Kiyotaki & Moore,1997 , Iacoviello, 2005)
- Detailed fiscal policy
- Multi country disaggregation

## Households:

Disaggregation of the household sector into borrowers and lenders:

- **Non-constrained / Ricardian / lenders**: intertemporal optimising (utility separable in consumption, leisure and housing)
  - full access to financial markets
- **Credit-constrained** / **borrowers:** intertemporal optimising over consumption, leisure and housing
  - subject to borrowing constraint: collateral constraint endogenously linked to nominal value of asset (housing)
- **Liquidity-constrained** (**“hand-to-mouth”**):
  - Consume their current disposable income

# Fiscal multipliers QUEST (one year fiscal stimulus)

| | EU alone | | | Global stimulus | | |
|---|---|---|---|---|---|---|
| | Without credit constraints | With credit constraints | With credit constraints and zero interest rate floor | With credit constraints | With credit constraints | With credit constraints and zero interest rate floor |
| Investment subsidies | 1.5 | 1.6 | 2.0 | 2.0 | 2.1 | 2.6 |
| Government investment | 0.9 | 0.9 | 1.1 | 1.0 | 1.1 | 1.2 |
| Government purchases | 0.8 | 0.8 | 1.0 | 0.9 | 1.0 | 1.2 |
| Government wages | 1.1 | 1.3 | 1.4 | 1.2 | 1.3 | 1.5 |
| General transfers | 0.2 | 0.4 | 0.5 | 0.2 | 0.5 | 0.6 |
| Transfers targetted to credit-constrained hh. | - | 0.7 | 0.9 | - | 0.8 | 1.0 |
| Transfers targetted to liquidity-constrained hh. | 0.7 | 0.7 | 0.9 | 0.8 | 0.9 | 1.1 |
| Labour tax | 0.2 | 0.4 | 0.6 | 0.3 | 0.5 | 0.6 |
| Consumption tax | 0.4 | 0.5 | 0.7 | 0.5 | 0.6 | 0.8 |
| Property tax | 0.0 | 0.1 | 0.2 | 0.0 | 0.2 | 0.2 |
| Corporate income tax | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |

*Note: First year impact on EU GDP (% diff. from baseline) for a temporary one year fiscal stimulus of 1% of baseline GDP.*

In crisis:
more credit constrained hh + ZLB => larger multipliers

# Fiscal multipliers

Fiscal multiplier is found to be larger

1)for direct government spending and targeted transfers (as opposed to tax cuts and general transfers) ;

2)if the share of liquidity-constrained (or 'rule of thumb') and/or credit-constrained consumers is larger;

3)if monetary policy is constrained (ZLB or for small country in monetary union)

4)if economies are less open (unless the stimulus is global);

5)if the stimulus is temporary rather than permanent.

# II: Macroeconomic impact of consolidations
## Standardised scenarios

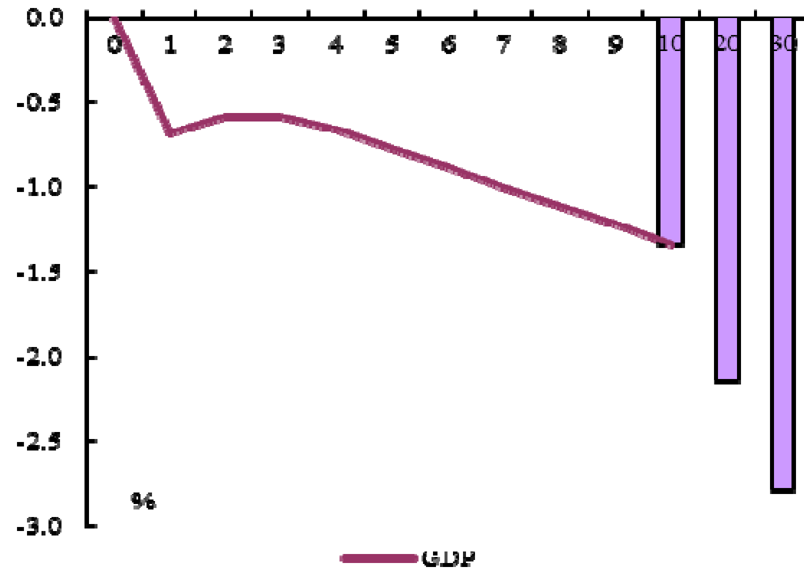
- Permanent consolidations 1% of GDP
- In each scenario this is achieved by an adjustment in the respective instrument that equals ex-ante 1% of (baseline) GDP.
- Tax rule labour income tax turned on after 15 years targetting LR reduction in debt-to-GDP ratio: -25%p
- Lower sovereign risk premium ( 75 bp lower in the long run).

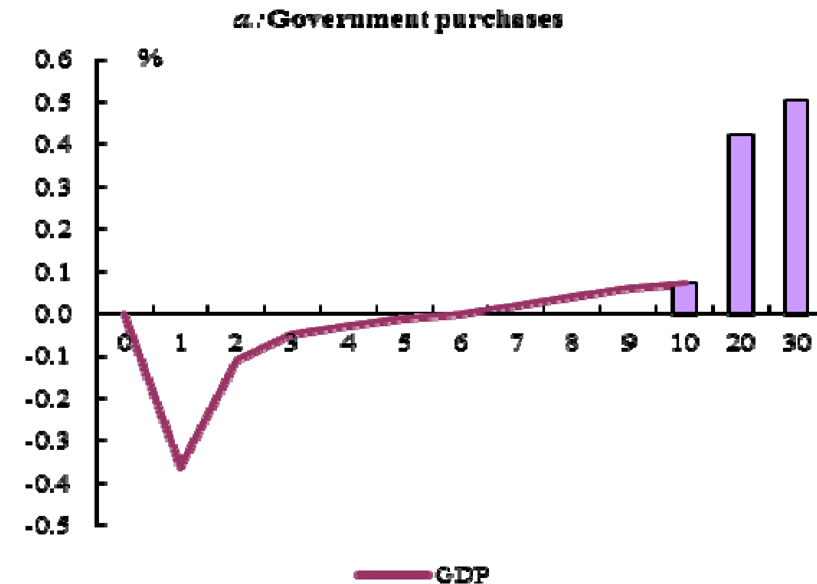
**Macro-economic effects:**

**Gradual decumulation of government debt:**

- => lower interest payments create space for reductions in labour taxes
- => This raises employment and boosts GDP in the medium and long run.

# GDP effect of permanent consolidation 1% of GDP

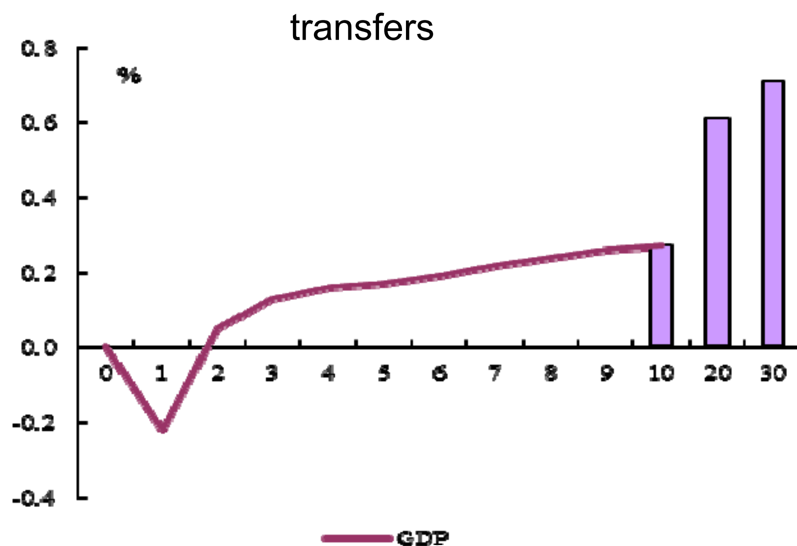


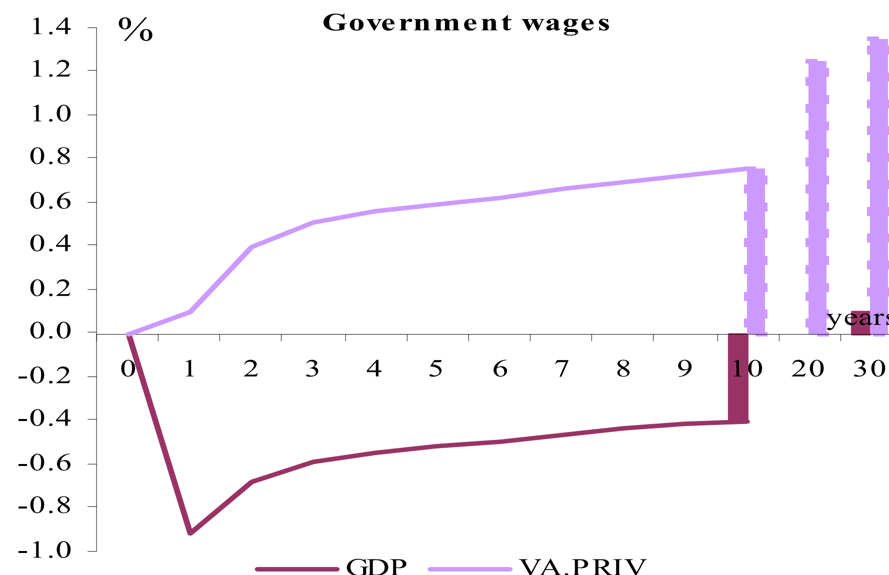




**<u>Government investment</u>**: productive spending
permanent reduction leads to the significant GDP losses

**<u>Government purchases</u>**: unproductive spending
reduction has only a short-term negative GDP effect
when compensated by cuts in labour taxes in the medium/long run.

# GDP effect of permanent consolidation 1% of GDP




**Transfers** : unproductive - only serve distributional purposes.

Reducing transfers - and lowering distortionary labour taxes in medium/long run – leads to positive output effects

However, distributional consequences: 'rule of thumb' households hit more

**Lowering government wages**: large direct impact on GDP (definition NA).

Downward pressure on wages private sector (spillover)

Reduction in incomes leads to a fall in consumption (constrained households !)

Lower wages private sector boost competitiveness, raises employment.

Gradually increase value-added private sector – higher GDP

## Consolidations through tax increases

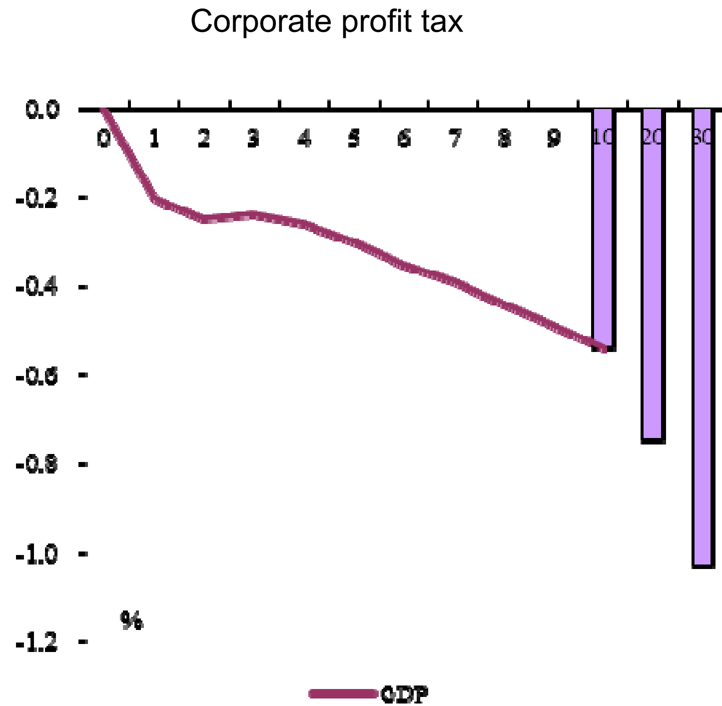
- Raising taxes has generally negative short and long term output effects

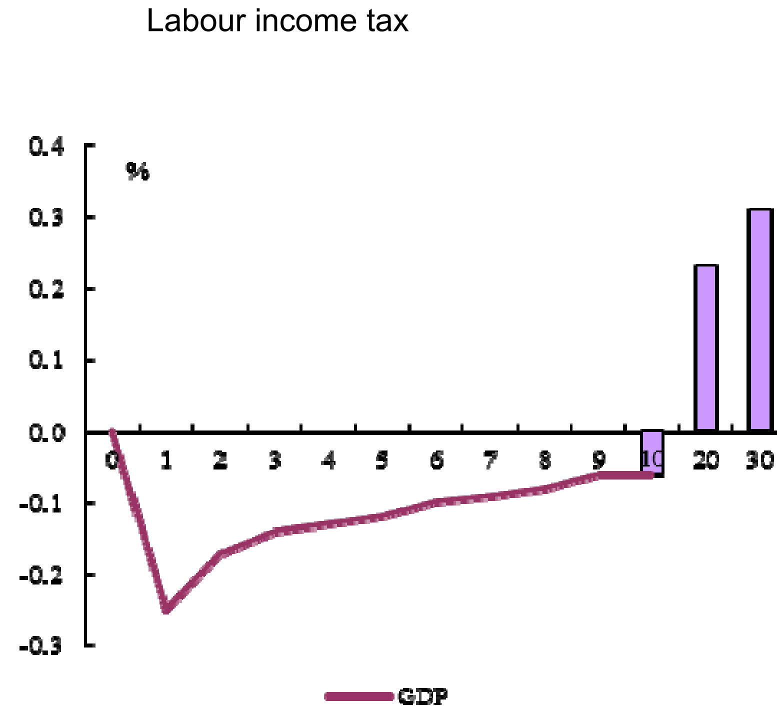
- But in these scenarios tax increases are compensated in the long run by reductions in labour taxes as the debt burden declines.

$\Rightarrow$ Scenarios show the *dynamic adjustment* to *partial tax shifts* from labour taxes

Short term effects tax changes depend on adjustment costs in capital and labour

# GDP effect of permanent consolidation 1% of GDP



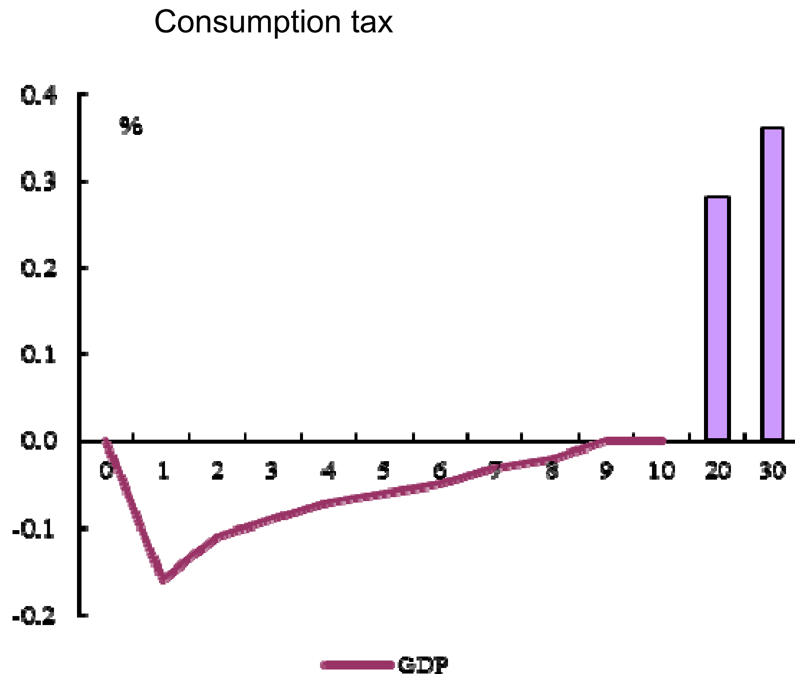




**Corporate profit tax**: investment ↓ capital stock ↓

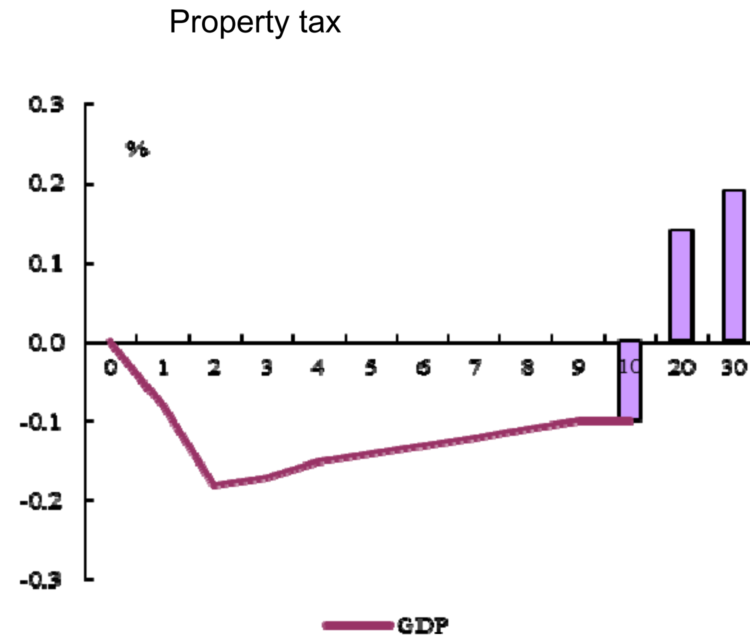
**Labour taxes increase**: employment ↓ initial GDP loss,
but in long run labour taxes can be reduced, and GDP eventually turns positive.

# GDP effect of permanent consolidation 1% of GDP

Consumption tax




Property tax




**<u>Taxes on consumption and taxes on housing property:</u>**
smaller short term impacts( -0.2%) and GDP gradually recovers.
**<u>Taxes on housing property:</u>**
Impact on GDP (decline housing stock), smaller impact on value added

# GDP impact of consolidations

Expenditure-based consolidations :

- Highest costs from consolidations based on investment spending
- Lowest for reductions in general transfers and gov. purchases (‘unproductive’)
- But distributional consequences

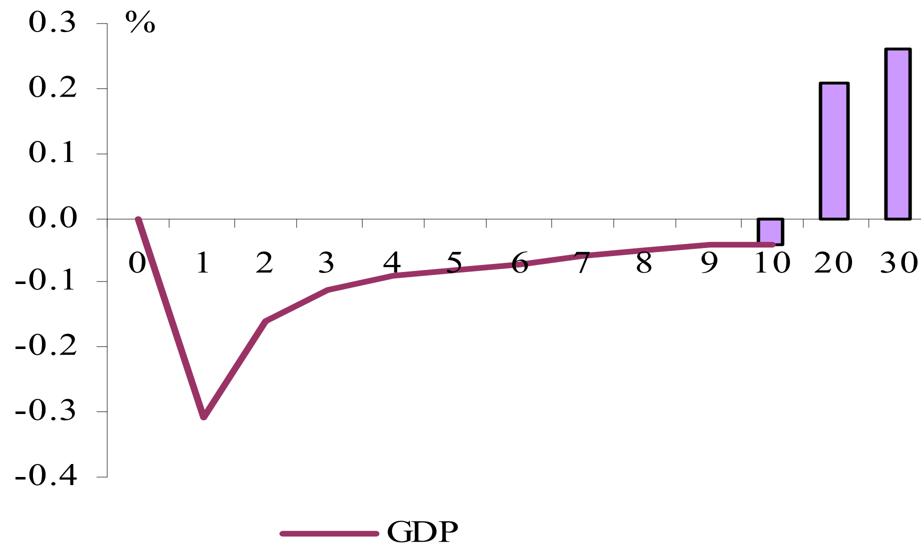
Revenue-based consolidations:

- Negative GDP impacts
- Highest costs: corporate taxes and labour taxes
- Indirect tax: smaller negative output effects (and do not harm competitiveness )

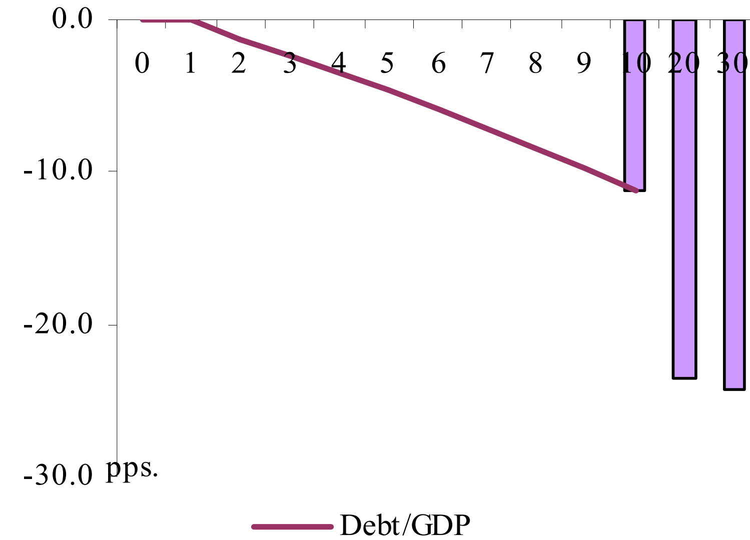
## Balanced-composition "across-the-board" consolidation (1% of GDP):

Adjustment in spending and taxes roughly proportional to their share in government budget:

*Graph I.2.5a:* **GDP**

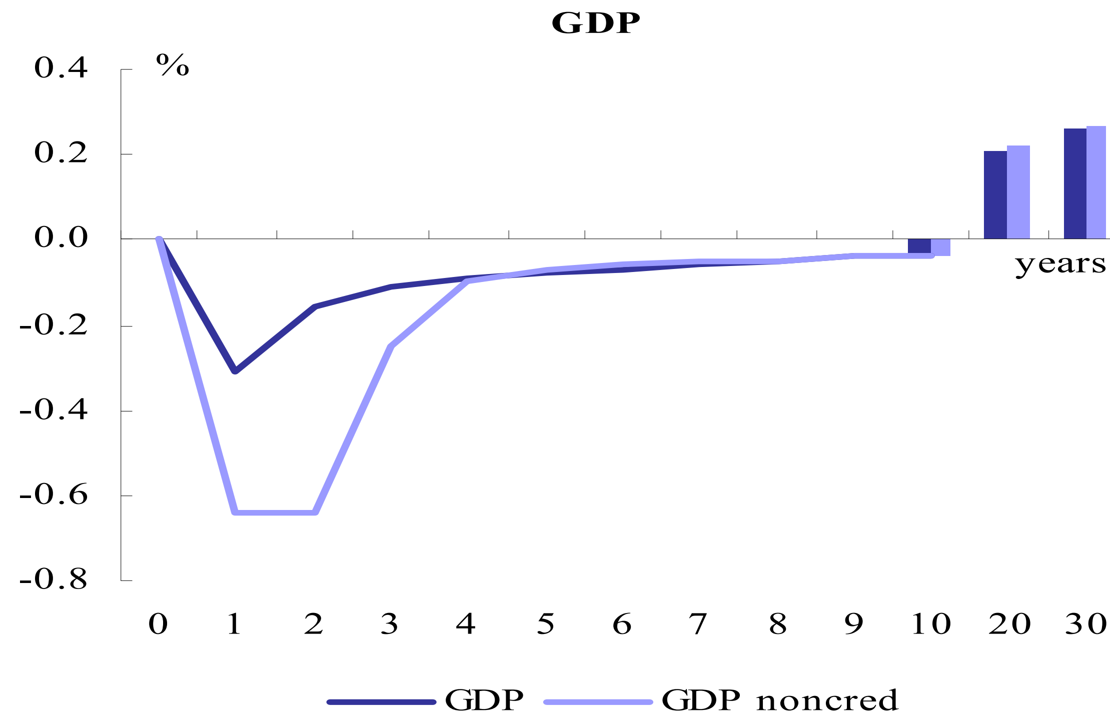



*Graph I.2.5d:* **Debt to GDP ratio**




| Deficit reduction 1% of GDP | | | |
|---|---|---|---|
| gov transfers | -0.15 | labour tax | 0.2 |
| gov wages | -0.1 | cons tax | 0.2 |
| gov employ | -0.1 | corp tax | 0.05 |
| gov purchases | -0.1 | prop tax | 0.05 |
| gov investment | -0.05 | | |

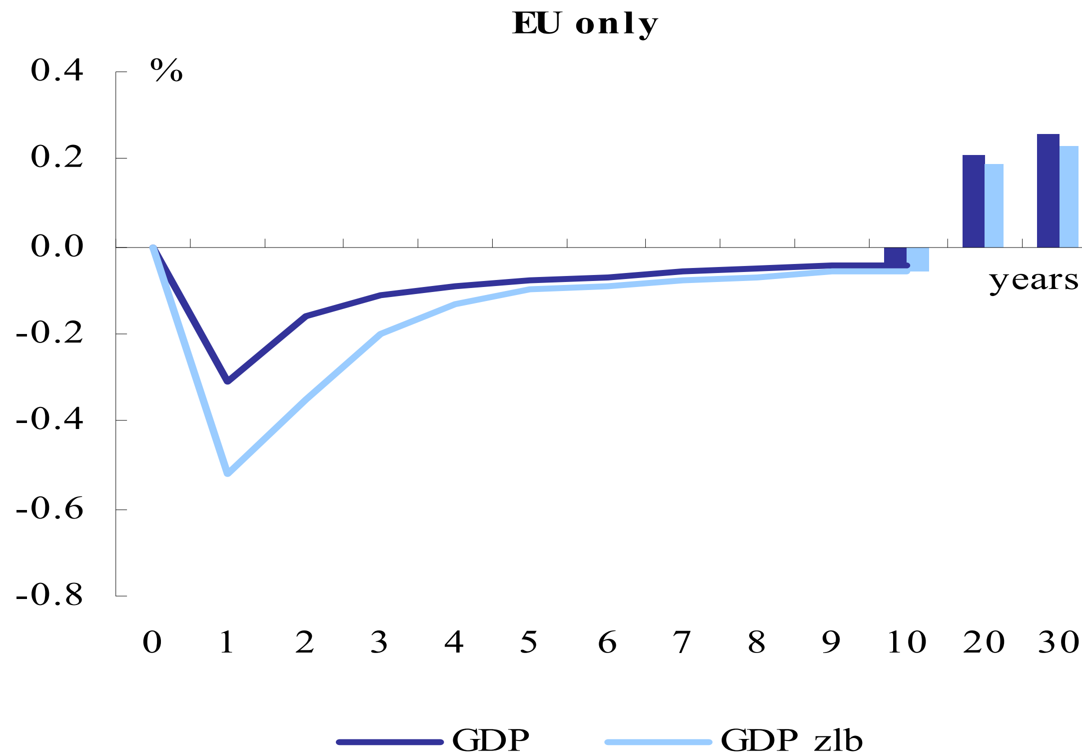
# Consolidation : Larger impact in case of lack of credibility / learning




If consolidation perceived as <u>temporary</u> (first two years): Larger impact multipliers

=> Consolidations that are not perceived as permanent but expected to be reversed at a later stage may have significantly larger output and employment costs.

# Consolidation : Larger impact at zero interest rate floor:

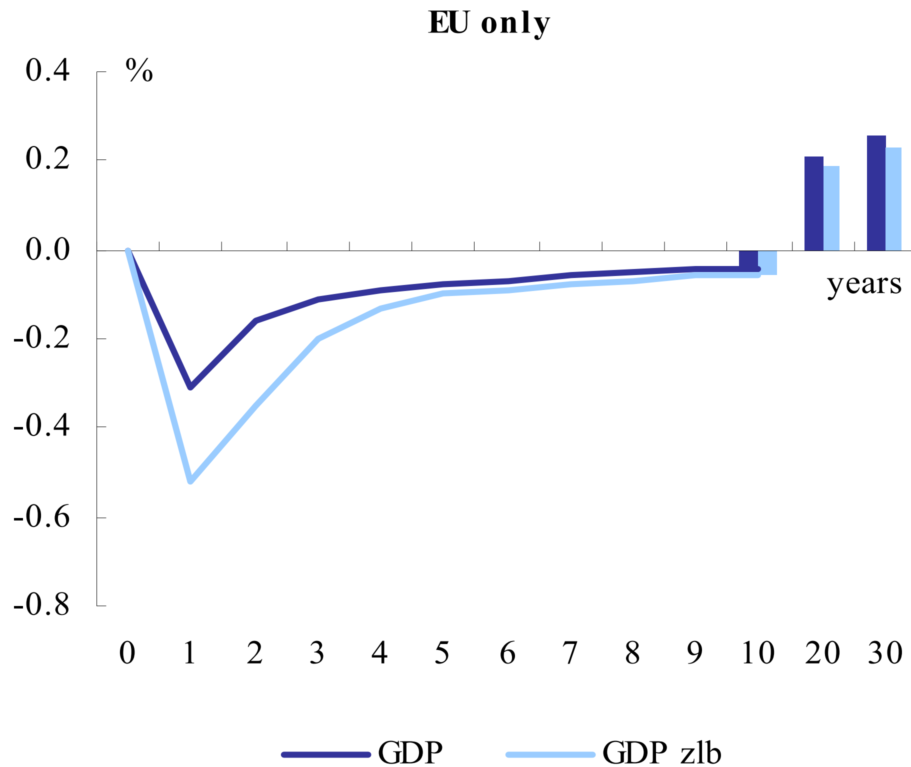


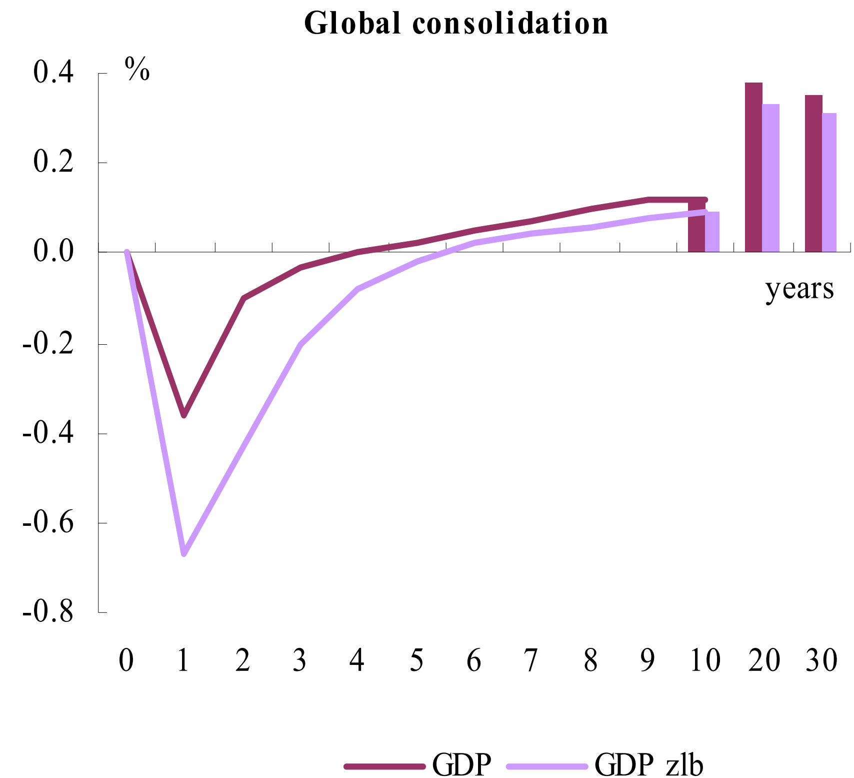

**<u>When ZLB is binding</u>**:

central banks cannot support consolidation by reducing interest rates

Larger GDP effects

# Consolidation : Larger impact in case of global synchronisation

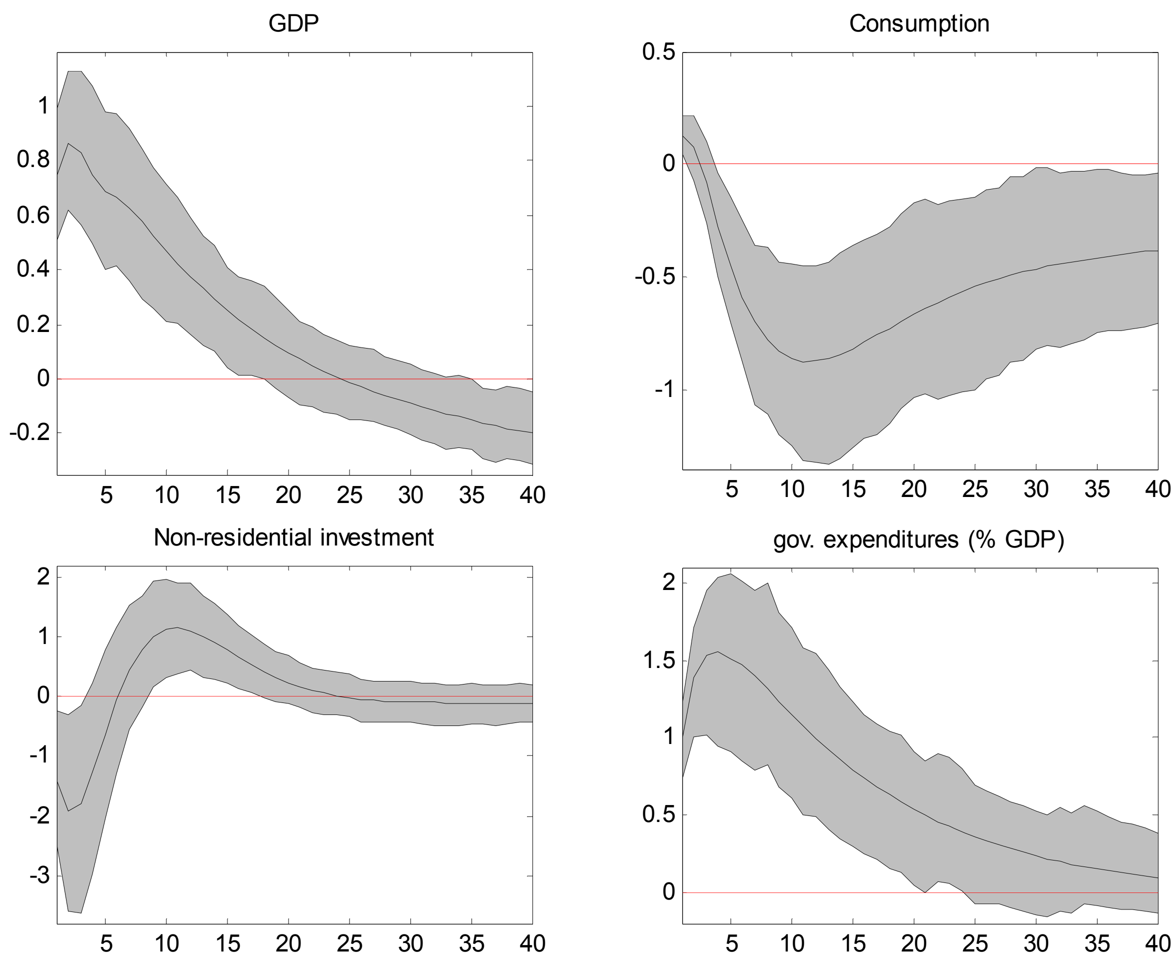



Spillovers:

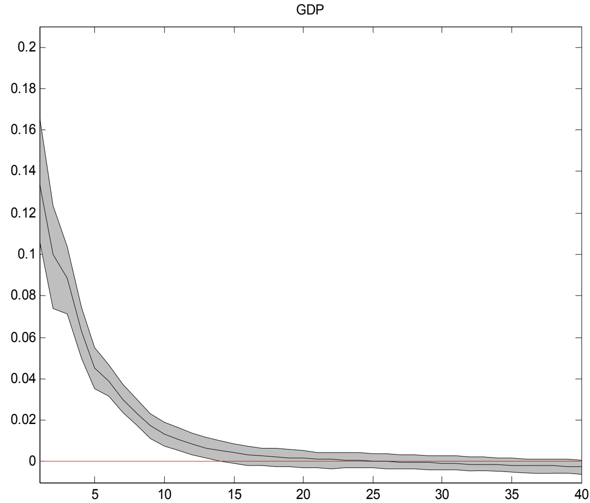
When global fiscal retrenchments: Larger GDP effects

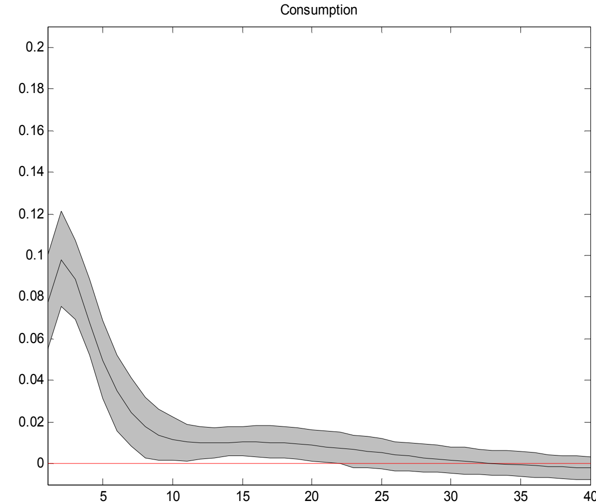
# 4. Empirical evidence from estimated models



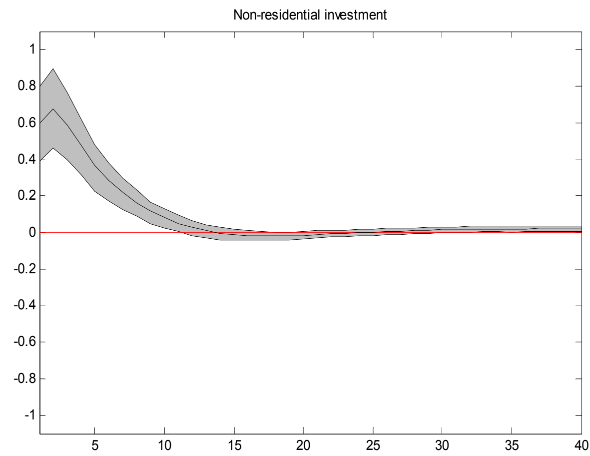

- Persistent fiscal impulse
- 'normal' circumstances (not ZLB)
- 1st yr multiplier ≈ 0.6
- Impact on investment negative

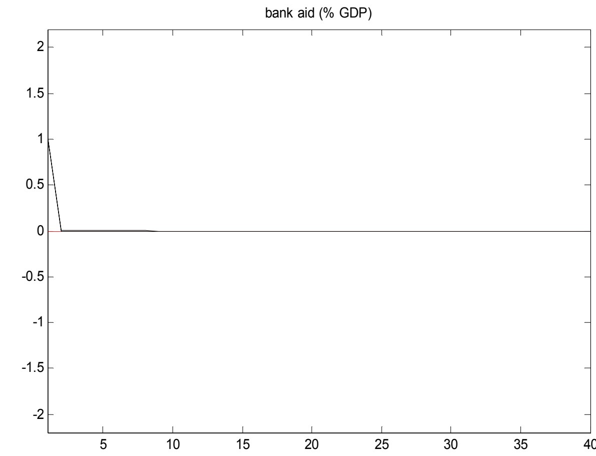
# 4. 1.b Innovation to government bank support rule (1% of quarterly GDP)



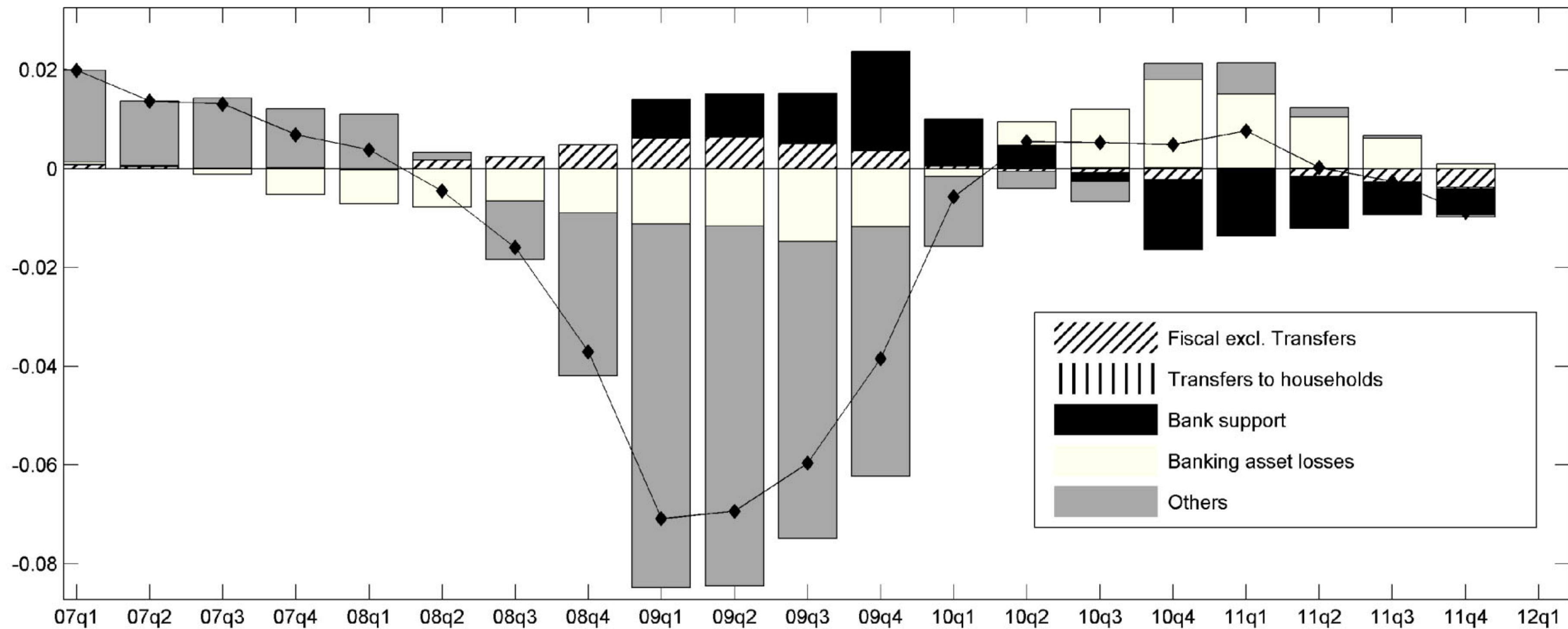




- One-off impulse
- But highly persistent GDP effects
- 1st yr multiplier 0.4
- Cum. multiplier larger
- positive effect on investment



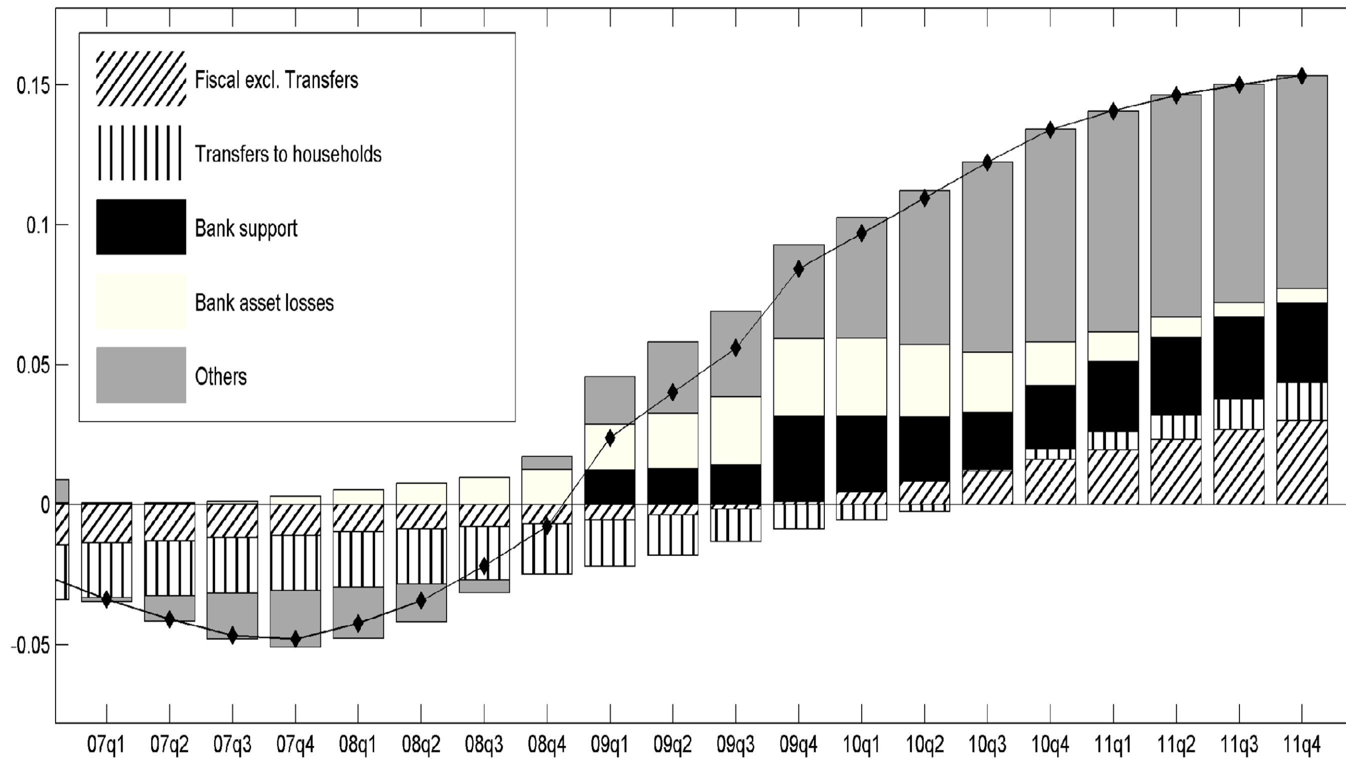
## GDP (YoY growth rates, detrended)




2009:
Bank losses contributed much to fall in growth
Gov stimulus measures supported growth by 1pp.
Gov support to banks even more

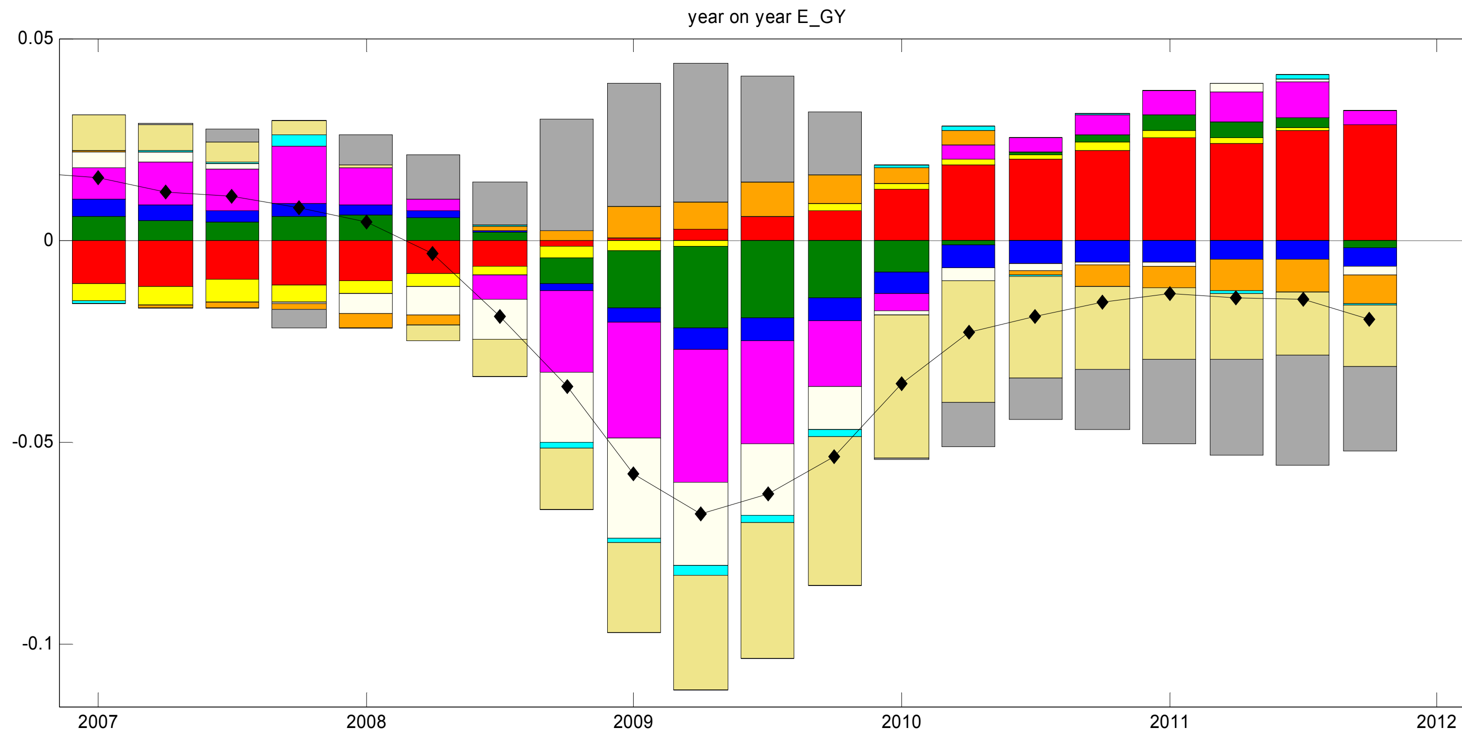
2011:
Withdrawal of stimulus and consolidation contributed ½ pp to growth deterioration

## Public Debt to GDP ratio (demeaned)

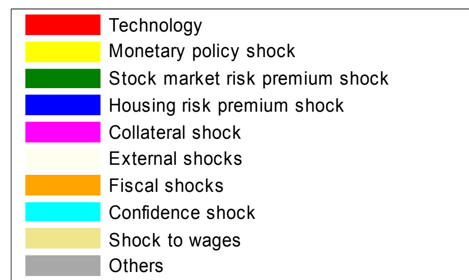



Debt/GDP ratio increased by about 20 pps.
- Bank support : 18%
- Fiscal shocks (incl AS): 33%

# Fig 4.3 Spain: GDP growth decomposition

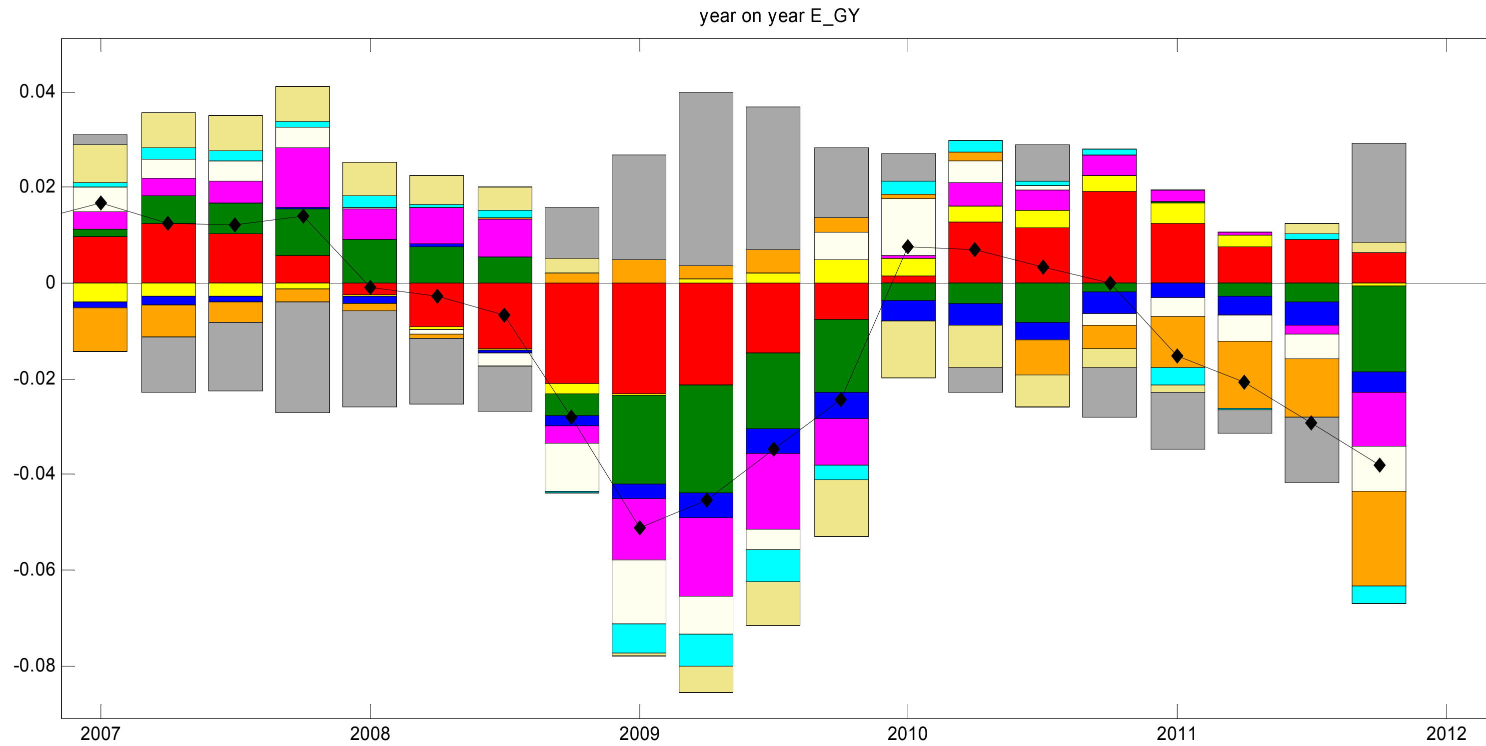


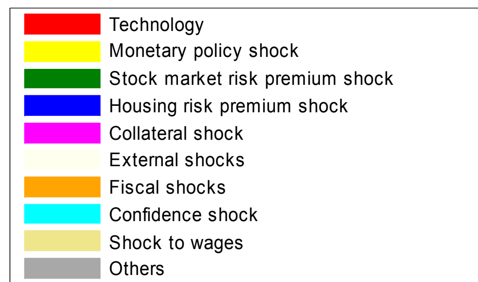

2008-09:
(-) : Stock market
Housing market ('bubble')
Collateral (lending cond.)
World trade
Wage inflexibility
(+): fiscal




2011:
(-) : Housing market ('bubble')
Wage inflexibility
Fiscal
(+) : Productivity (decline construction sector)

# Fig 4.4 Portugal GDP growth decomposition



# Summary Table: GDP growth decompositions ES and PT

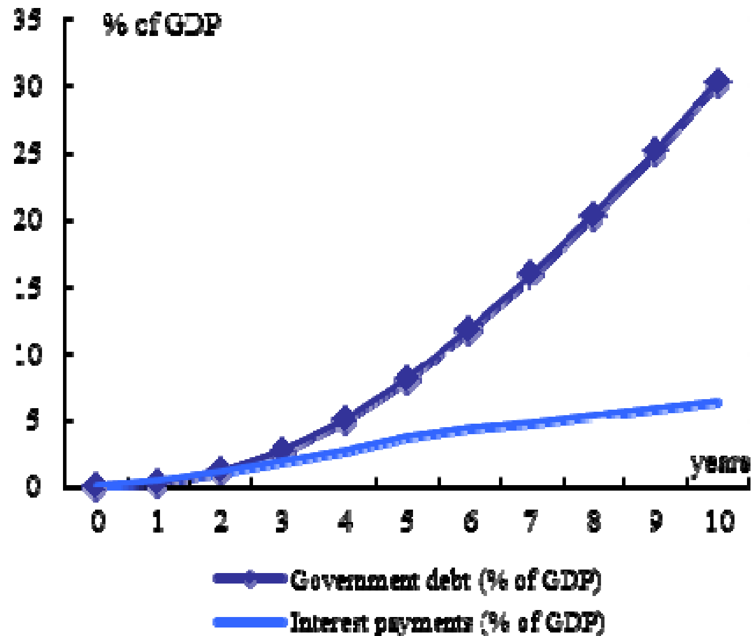
| ES | GDP growth | GDP growth relative to trend | *of which :* | | |
|---|---|---|---|---|---|
| | | | *Gov. consumption and investment* | *Gov. transfers* | *Net contribution other shocks* |
| **2009** | **-3.7** | **-6.0** | *+0.8* | *0* | *-6.8* |
| **2010** | **-0.1** | **-2.3** | *0* | *0* | *-2.3* |
| **2011** | **0.7** | **-1.5** | *-0.7* | *0* | *-0.8* |

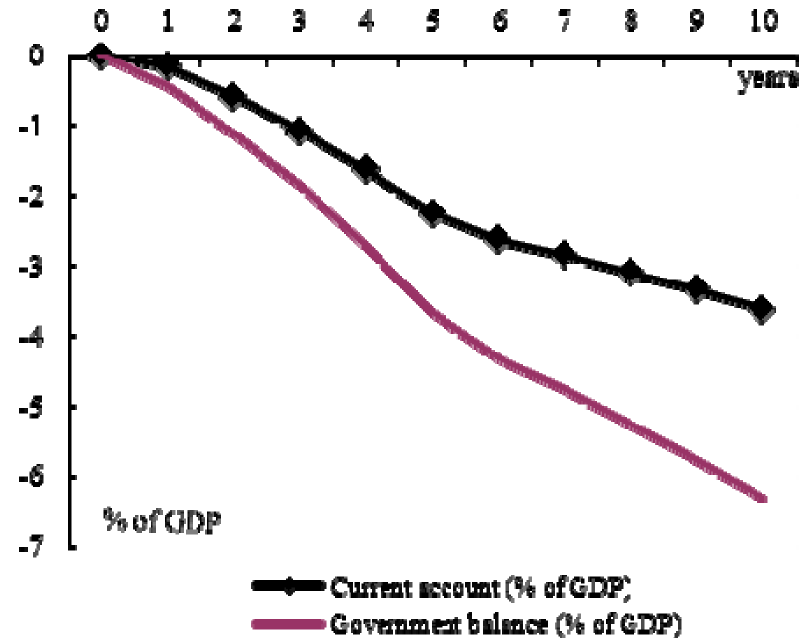
| PT | GDP growth | GDP growth relative to trend | *of which :* | | |
|---|---|---|---|---|---|
| | | | *Gov. consumption and investment* | *Gov. transfers* | *Net contribution other shocks* |
| **2009** | **-2.9** | **-3.9** | *+0.8* | *-0.4* | *-4.3* |
| **2010** | **1.4** | **0.4** | *+0.2* | *-0.4* | *+0.6* |
| **2011** | **-1.6** | **-2.6** | *-1.0* | *-0.4* | *-1.2* |

# 5. Costs of higher risk premia

- What is counterfactual ?
- Risks:
  - Escalating debt projections,
  - higher sovereign risk premia,
  - expectations of default
  - collapse financial system

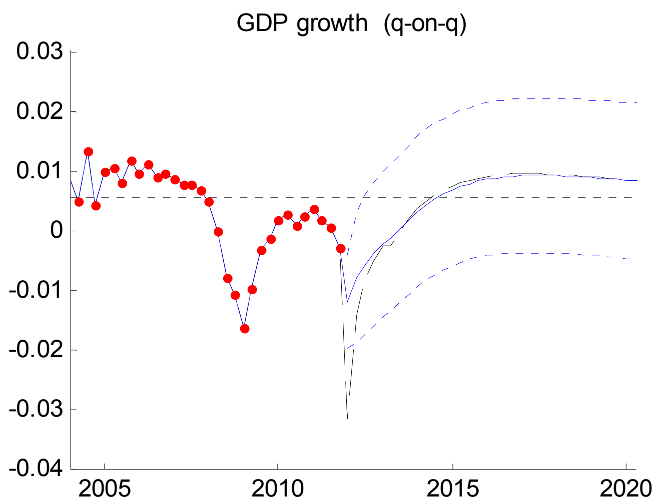
# 5. Costs of higher risk premia

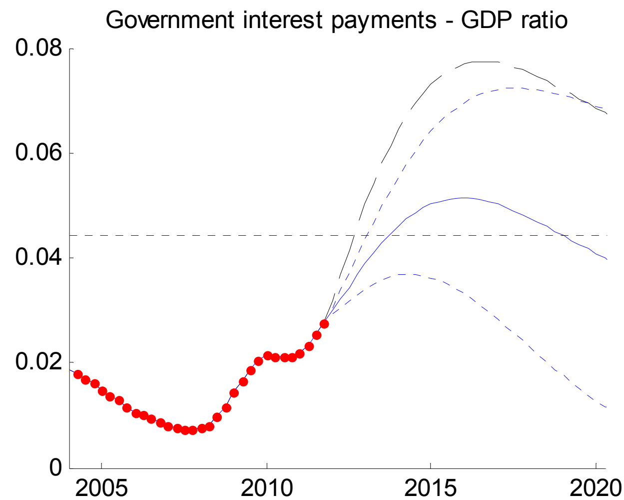


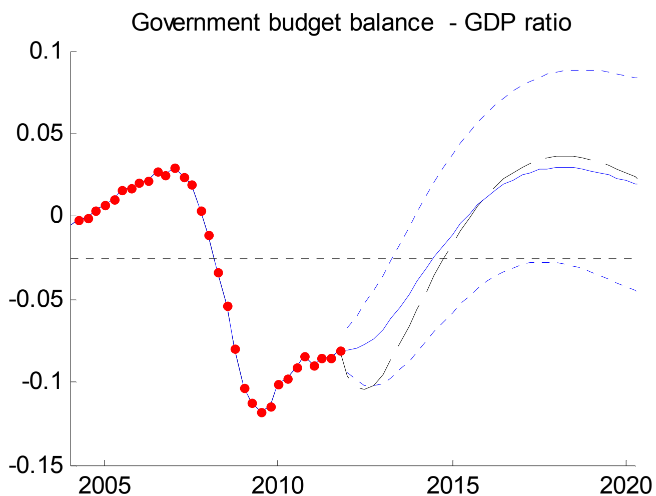



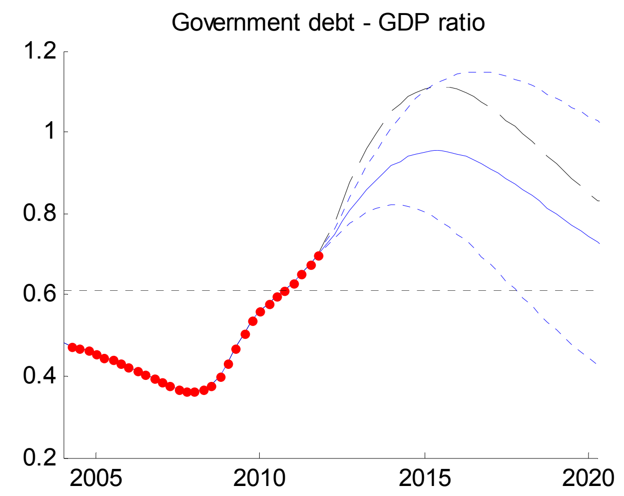

- sovereign risk premium of 400 bps.
- increase in government interest payments - ever larger share of government spending,
- a deterioration in the government deficit,
- an accumulation of debt, and,
- deterioration in the current account (debt held abroad).

# 5. Costs of higher risk premia – in model with medium term debt stabilising (consolidation) policies




- Sovereign spread +400 bps.
- Private sector borrowing costs +200bp
- Gov interest payments +2% GDP
- deterioration government deficit,
- further debt accumulation
- Sharp recession

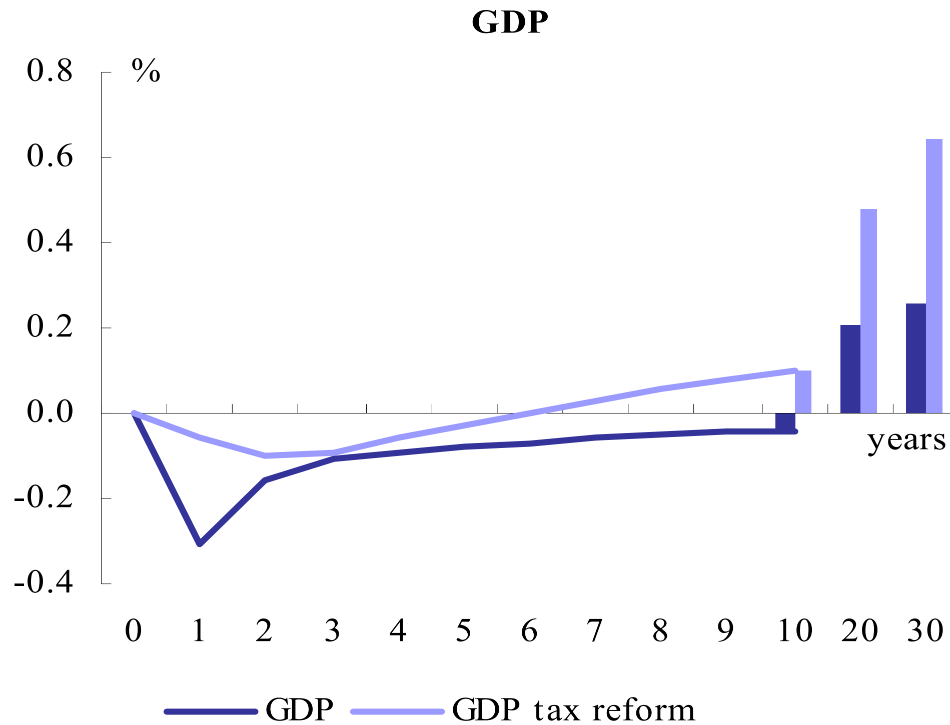
Note: all assuming stabilising fiscal policy response

# 6. Growth-friendly policies

- Micro stance matters
- Composition of consolidation packages crucial
- Keep productive spending up, do not increase distortive taxes
- Reduce unproductive spending, increase least distortive taxes
- Combine consolidation with tax reform

# **Consolidation combined with tax reform**:

shift from labour and corporate tax towards consumption tax




| Deficit reduction 1% of GDP | | | |
|---|---|---|---|
| gov transfers | -0.3 | labour tax | -0.3 |
| gov wages | -0.1 | cons tax | 0.5 |
| gov employ | -0.1 | corp tax | -0.3 |
| gov purchases | -0.1 | prop tax | 0.5 |
| gov investment | | | |

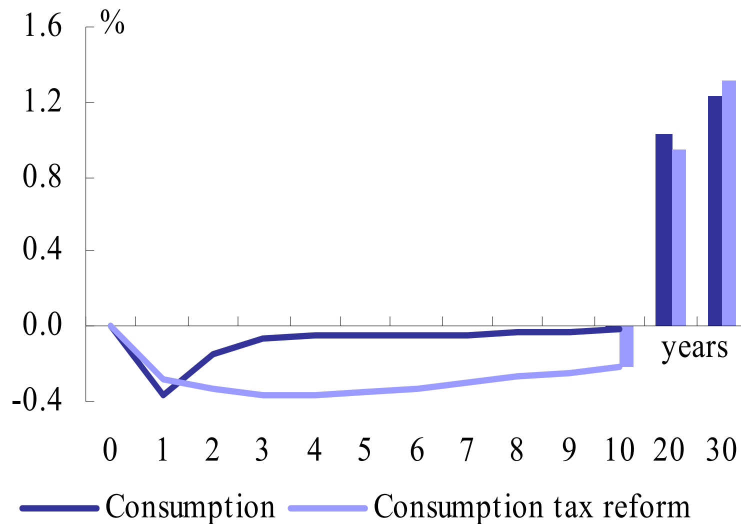
- Reduce spending
- Increase VAT + property tax
- Reduce labour + corporate tax

=> Short run: Lower output loss

=> Long run: Larger gains

# Consolidation combined with tax reform (2):
shift from labour and corporate tax towards consumption tax

*Graph I.2.8b:* **Consumption**




*Graph I.2.8c:* **Employment**

| Deficit reduction 1% of GDP | | | |
|---|---|---|---|
| gov transfers | -0.3 | labour tax | -0.3 |
| gov wages | -0.1 | cons tax | 0.5 |
| gov employ | -0.1 | corp tax | -0.3 |
| gov purchases | -0.1 | prop tax | 0.5 |
| gov investment | | | |

Reduce spending
Increase VAT + property tax
Reduce labour + corporate tax
=> Short run: Lower output loss
=> Long run: Larger gains

# 6. Growth-friendly policies (2): Structural reforms

- Identify reform needs in areas where structural indicators for southern EA vulnerable countries show room for improvement relative to the EA average:
  - competition in the final goods sector (mostly services and network sectors),
  - intermediate firms' entry barriers (mostly innovative start ups),
  - unemployment benefit generosity,
  - the structure of direct and indirect taxes,
  - government support to private R&D, and
  - the skill composition of the labour force.

# Selected structural reforms Spain

| Stylised policy impulse | size | GDP effect (% deviation from baseline) | | | | | Employment effect (% deviation from baseline) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 5 | 10 | long run | 1 | 2 | 5 | 10 | long run |
| **Product market** | | | | | | | | | | | |
| Reducing final goods market mark-up | 0.8 p.p. | 0.0 | 0.1 | 0.3 | 0.5 | 1.2 | 0.0 | 0.1 | 0.2 | 0.2 | 0.2 |
| Reducing intermediate firms' entry barriers | 61% | 0.0 | -0.1 | 0.0 | 0.3 | 1.0 | 0.0 | 0.0 | -0.1 | -0.1 | -0.2 |
| **Labour market** | | | | | | | | | | | |
| Tax-shift from labour to consumption | 4.2 % GDP | 0.7 | 1.1 | 1.5 | 1.6 | 2.8 | 0.9 | 1.6 | 1.9 | 1.9 | 2.2 |
| **Knowledge and innovation** | | | | | | | | | | | |
| Increasing the share of medium skilled workers | 18 p.p. | 0.2 | 0.2 | 0.6 | 1.5 | 3.4 | 0.6 | 1.5 | 3.5 | 3.6 | 3.6 |

# Concluding remarks

- Consolidation measures can in the current environment have larger multipliers
- But with financial market stress counterfactual may be worse for most vulnerable countries
- Composition matters: design consolidations in growth-friendly way, ie keep productive spending up and combine with fiscal devaluation (shift tax burden away from labour to consumption/property)