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How can we explain the divergent dynamics of real activity and fiscal deficits in the troubled euro-zone countries?

In Spain, Italy, France and Portugal, the weakening of activity is so pronounced that the fiscal deficits are no longer shrinking; this has led to a divergent dynamics, where governments make fiscal policy even more restrictive, leading to a shortfall in growth which, ex post, worsens the fiscal deficits even more, etc.

Even though it is well known that a reduction in the fiscal deficit thanks to a restrictive fiscal policy is lessened by the shortfall in activity caused by this policy, this phenomenon was not expected to be so drastic that it would lead to this divergent dynamics, where the restrictive fiscal policies eventually increase the fiscal deficits.

How can the appearance of this divergent dynamics be explained?

- ***by the fact that restrictive fiscal policies are conducted in all countries simultaneously (the fiscal multiplier is then higher, i.e. 1.25 instead of 0.6);***
- ***by nonlinear effects of the restrictive fiscal policies, which possibly have an increasing impact on activity and tax revenues when they become more restrictive;***
- ***by the fact that part of the Spanish and Greek economies are moving into the black economy (the effect of the shortfall in activity on the deficit is then exacerbated).***

To avoid this dynamics, the fiscal deficits would have to be reduced more gradually by using government spending cuts to a greater extent.

ECONOMIC RESEARCH
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Divergent dynamics of activity and fiscal deficits in the troubled euro-zone countries

In the recent period, we have seen a **divergent dynamics of GDP and fiscal deficits in several troubled euro-zone countries**: Spain, Italy, Portugal, Greece, and even France.

The fiscal policy implemented is very restrictive and aims at a rapid reduction **in fiscal deficits** (**Table 1**).

Table 1
Government forecasts of fiscal deficits (as % of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
France	-3.3	-7.5	-7.0	-5.2	-4.5	-3.0	-2.3	-1.6	-0.8	0.0
Spain	-4.2	-11.2	-9.3	-8.9	-6.3	-4.5	-2.8	-	-	-
Italy	-2.7	-5.2	-5.0	-3.9	-1.7	-0.5	-0.1	-	-	-
Portugal	-3.5	-10.0	-9.1	-4.2	-4.5	-3.0	-1.8	-0.5	-	-
Greece	-7.7	-15.4	-10.6	-8.5	-6.5	-4.9	-2.6	-1.1	-	-

(*) Excluding bank recapitalisation
Sources: National sources, OMB, Natixis

But the result of this fiscal policy is:

- **a significant shortfall in growth** (**Chart 1**);
- **a lack of reduction in the fiscal deficit in 2012 compared with 2011,** and in certain cases (Spain, Italy, Portugal) a noteworthy deterioration in public finances (**Charts 2A** to **E**).

Chart 1
Real GDP growth (Y/Y as %)

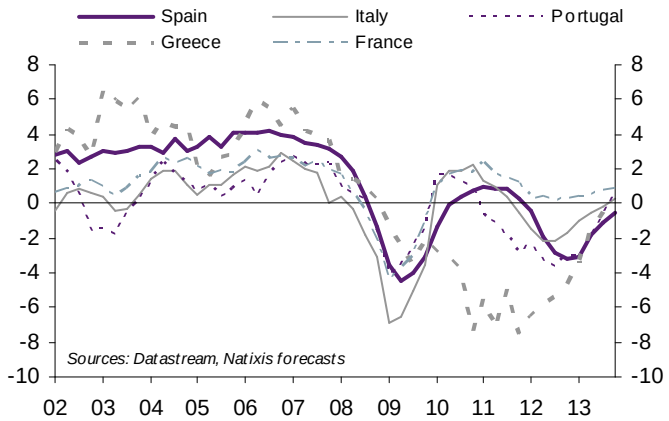


Chart 2A
Spain: Cumulative fiscal deficit (in EUR bn)

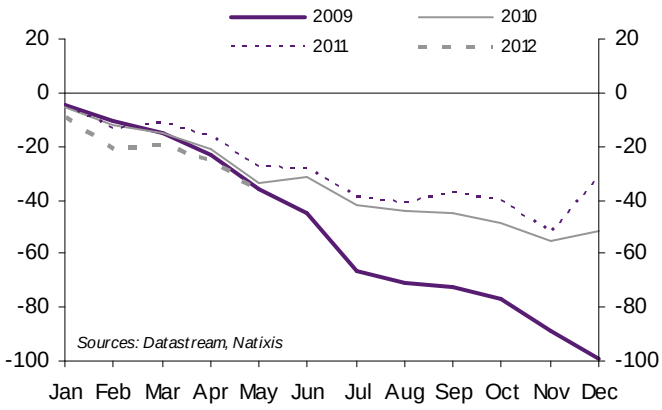


Chart 2B
Italy: Cumulative fiscal deficit (in EUR bn)

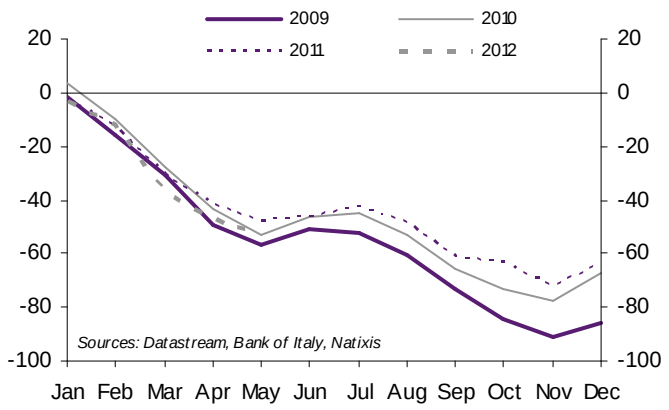


Chart 2C
Portugal: Cumulative fiscal deficit (in EUR bn)

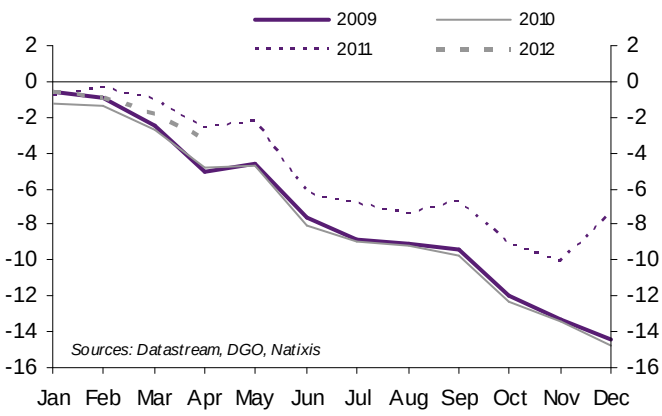


Chart 2D
Greece: Cumulative fiscal deficit (in EUR bn)

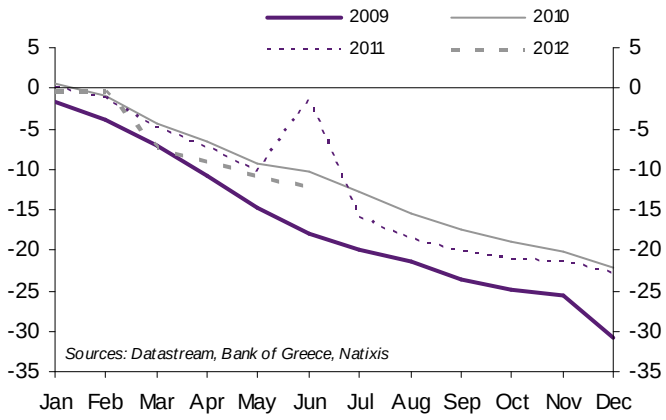
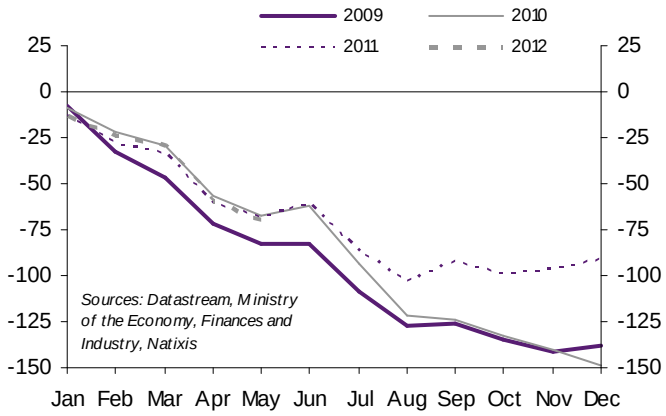
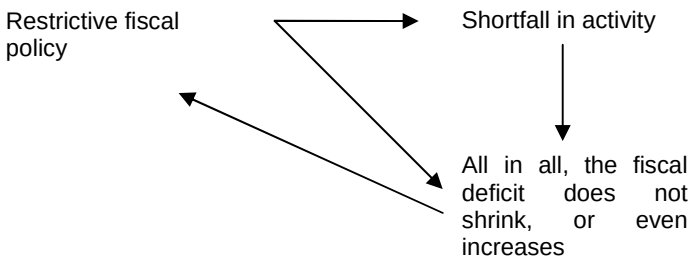


Chart 2E
France: Cumulative fiscal deficit (in EUR bn)

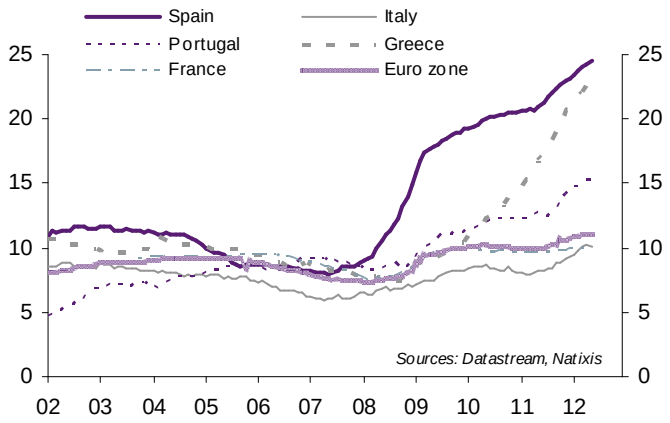


So a vicious circle has appeared, with **a divergent dynamics between real activity and the fiscal deficit**:



This dynamics is catastrophic for the euro zone as it is driving it into a recession and mass unemployment (**Chart 3**), while there is no positive impact on public finances.

Chart 3
Unemployment rate (as %)



Such a divergent dynamics is not normally expected

On average, **tax revenues** account for 45% of GDP in the troubled countries (**Chart 4**).

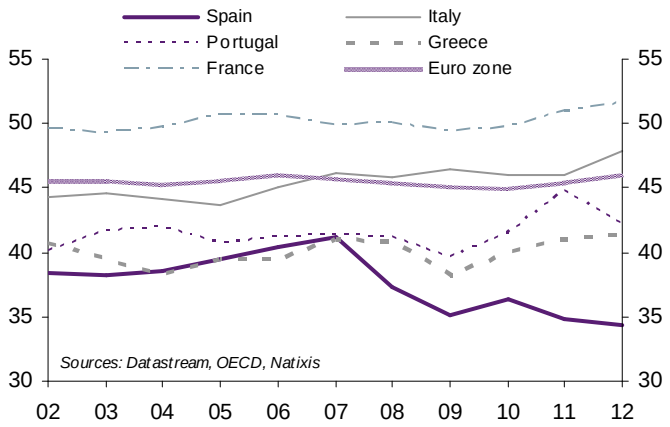
If we use the **conventional fiscal multiplier** (around 0.6), we find that **when fiscal policy *ex ante* leads to a 1 percentage point of GDP reduction in the fiscal deficit**, the shortfall in GDP is 0.6 percentage point of GDP, the shortfall in tax revenues is 0.27 percentage point of GDP and **the fiscal deficit is reduced *ex post* by 0.73 percentage point of GDP**: it is far from increasing.

So **for there to be a divergent dynamics**:

- either the fiscal multiplier must be far higher than 0.6;
- or the effect of the shortfall in activity on the fiscal deficit (mainly on tax revenues) must be far higher than 0.45.

We will look at a few explanations that could confirm these assumptions.

Chart 4
Tax burden (as % of nominal GDP)



Can the divergent dynamics be explained?

(1) Explanation 1: Restrictive fiscal policies conducted simultaneously in euro-zone countries

Practically all euro-zone countries (except Finland and, to quite a large extent, Germany) are conducting restrictive fiscal policies (**Table 1** above, **Table 2**).

Table 2
Government forecasts of fiscal deficits (as % of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Germany	0.1	-3.3	-4.3	-1.0	-0.9	-0.6	-0.4	-0.2	-0.1	-
Netherlands	0.5	-5.6	-5.1	-5.0	-4.2	-3.0	-	-	-	-
Belgium	-1.3	-5.9	-4.1	-3.7	-2.8	-2.2	-1.1	-	-	-
Austria	-0.9	-4.1	-4.5	-2.6	-3.0	-2.2	-1.5	-0.7	-0.1	-
Finland	4.2	-2.6	-2.8	-0.8	-0.6	-0.7	-0.9	-0.9		-
Ireland*	-7.3	-11.7	-11.8	-9.4	-8.3	-7.5	-4.8	-2.8	-	-

(*) Excluding bank recapitalisation
Sources: National sources, OMB, Natixis

This is leading to **a greater shortfall in growth**: **the fiscal multiplier is higher for the euro zone as a whole than for each country taken individually.**

The fiscal multiplier is normally:

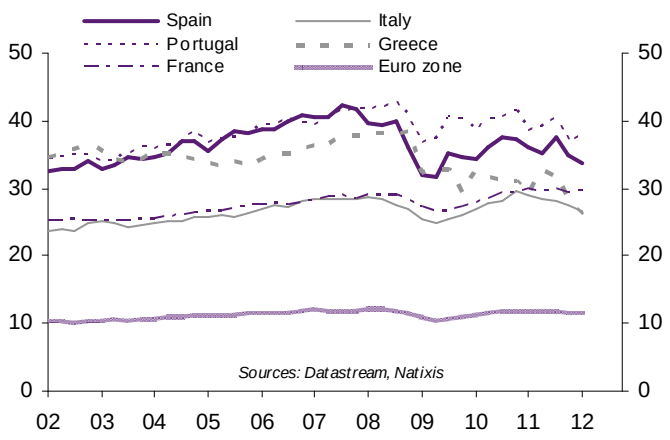
$$m = \frac{1-\sigma}{s+\theta\mu}$$

m is the fiscal multiplier; σ is the (positive) effect on the country from a rise in the fiscal deficit (the negative effect on savings from a fall in the fiscal deficit); s is the savings rate; θ is the elasticity of imports to GDP; μ **is the weight of imports in GDP.**

The weight of imports in GDP is higher for the euro-zone countries taken individually than for the euro zone as a whole (**Chart 5**).

This may explain why we have to use a fiscal multiplier of 1.25 instead of 0.6.

Chart 5
Imports (in volume terms, as % of GDP)



(2) Explanation 2: Nonlinear impacts of fiscal policies on activity

A famous non-linearity is the **Laffer curve**: the rise in the tax burden beyond a certain threshold reduces tax revenues instead of increasing them, because of the reaction of labour supply (**see Inset**).

But we can imagine **other forms of non-linearities**: households maintain their consumption in the event of a small shortfall in income, but not in the event of a major one; companies revise their investment budgets beyond a certain fall in expected demand.

Inset
Laffer curve

Let us write:

- **the supply of labour** (by employees) as $N^o = W^\alpha ; \alpha < 1$; it grows in line with the wage W;
- **the demand for labour** (by companies) as $N^d = \left[W(1+\tau)^{-\beta} ; \beta > 1\right]$; it declines in line with labour costs. τ **is companies' welfare contribution rate.**

At labour market equilibrium, $N^o = N^d$, therefore:

$$\begin{cases} W = (1+\tau)^{\frac{-\beta}{\alpha+\beta}} \\ N = (1+\tau)^{\frac{-\alpha\beta}{\alpha+\beta}} \end{cases}$$

Tax revenues are:

$$R = \tau N = \tau(1+\tau)^{\frac{-\alpha\beta}{\alpha+\beta}}$$

We have:

$$\frac{dR}{R} = d\tau\left(\frac{1}{\tau} - \frac{-\alpha\beta}{\alpha+\beta}\frac{1}{1+\tau}\right)$$

If we are to have $\frac{\partial R}{\partial \tau} > 0$, either:

- α must be small $(\alpha(\beta-1) < \beta)$
- or we have to have $\tau\left(1 - \frac{\alpha+\beta}{\alpha\beta}\right) < \frac{\alpha+\beta}{\alpha\beta}$ if α is large enough for us to have $\frac{\alpha+\beta}{\alpha\beta} < 1$

Can we see this non-linearity?

Since 2011 there has been a fall in tax revenues in Spain, which prevents a reduction in deficits, after four or five years of zero or negative growth (**Chart 6A**); tax revenues have also been declining sharply in 2012 in Portugal (**Chart 6C**), but not in Italy (**Chart 6B**), France or Greece (**Chart 6D**). By contrast, the fall in growth in 2012 is across the board. We are perhaps faced more with a non-linearity in the real economy (non-linear reaction of activity to fiscal policy) than purely in tax revenues.

Chart 6A
Spain: Tax revenues, fiscal deficit and real GDP

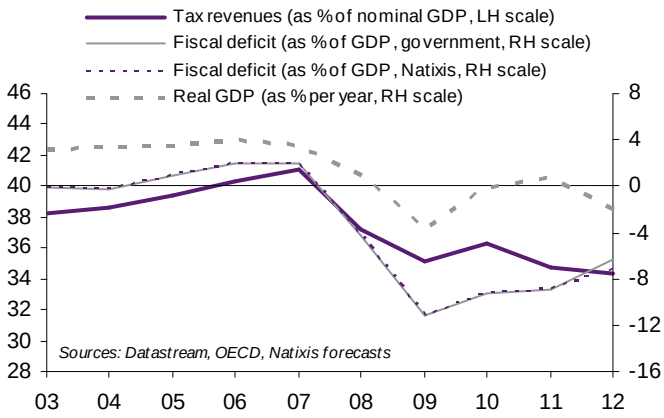


Chart 6B
Italy: Tax revenues, fiscal deficit and real GDP

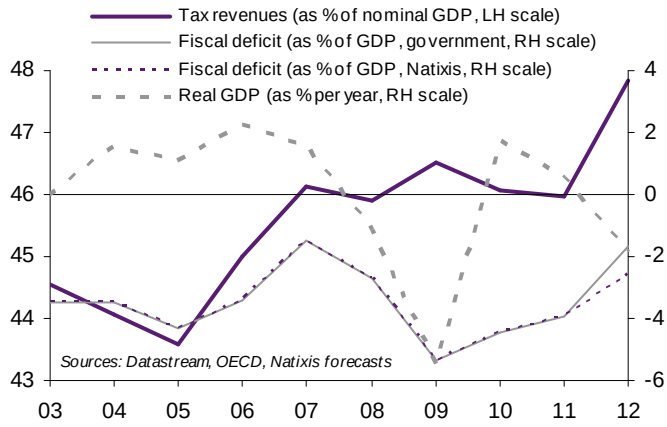


Chart 6C
Portugal: Tax revenues, fiscal deficit and GDP

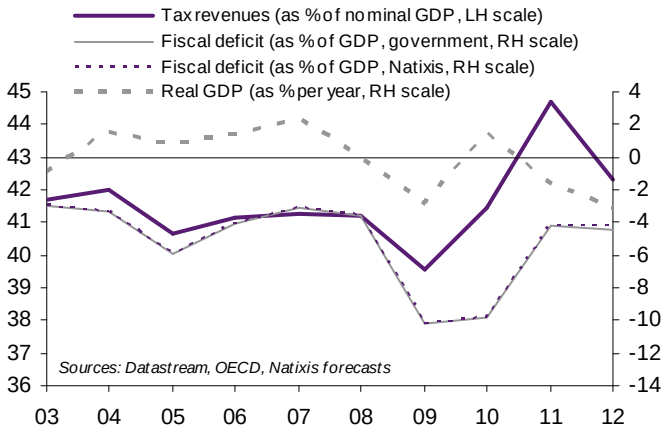


Chart 6D
Greece: Tax revenues, fiscal deficit and real GDP

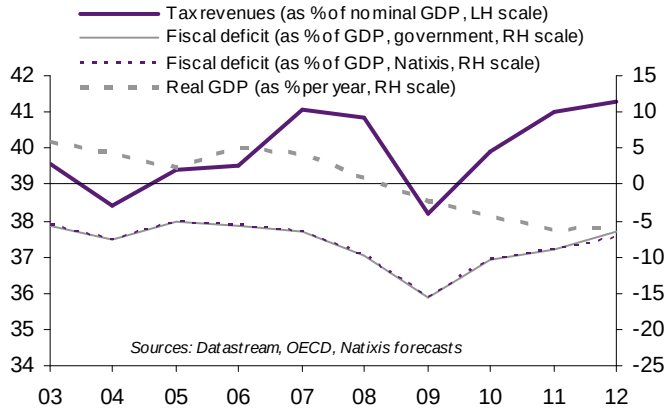
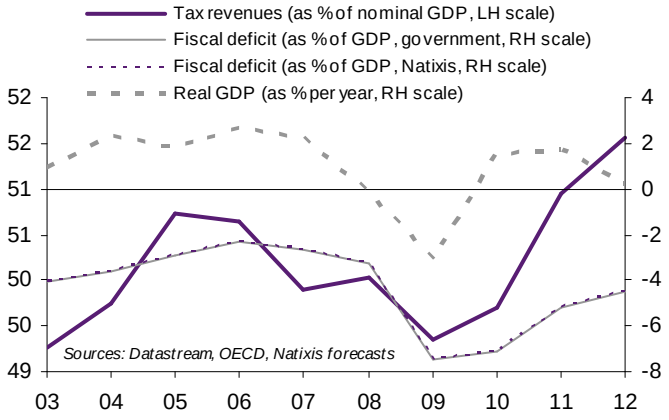


Chart 6E
France: Tax revenues, fiscal deficit and real GDP



(3) Explanation 3: Part of the economy moving into the black economy

If the rise in the tax burden and the rise in unemployment drive part of the economy into the black economy, we should see an abnormal fall in tax revenues - an even more pronounced fall than what the decline in activity normally would entail.

This is clearly the case (we compare the trend in tax revenues to that in nominal GDP in year-on-year terms) **in Spain** (**Charts 7A, B** and **C**), but **not in Italy** (**Charts 8A, B** and **C**) **or Portugal** (**Charts 9A, B** and **C**); it was the case in **Greece in 2011**, and more so in 2012 (**Charts 10A, B** and **C**); it is not the case in France (**Charts 11 A, B** and **C**).

Chart 7A
Spain: Monthly cumulative tax revenues (in EUR bn)

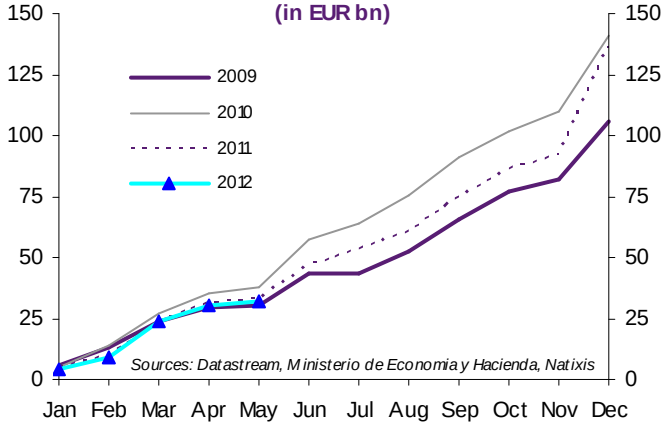


Chart 7B
Spain: Monthly cumulative tax revenues compared with the same month of the previous year (as %)

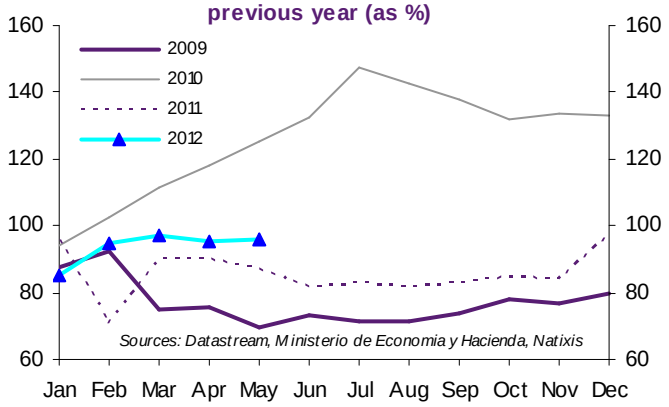


Chart 7C
Nominal GDP (Y/Y as %)

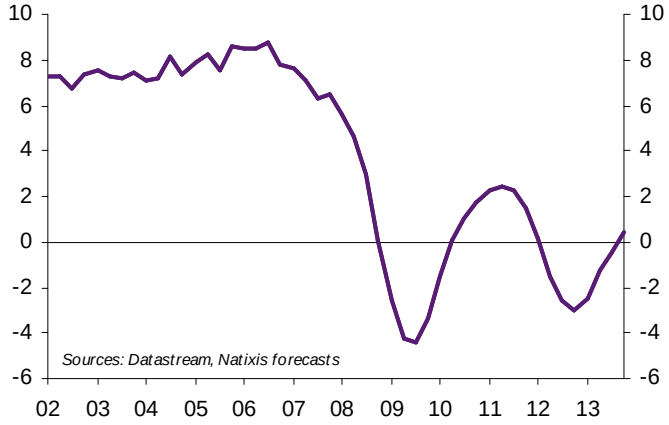


Chart 8A
Italy: Monthly cumulative tax revenues (in EUR bn)

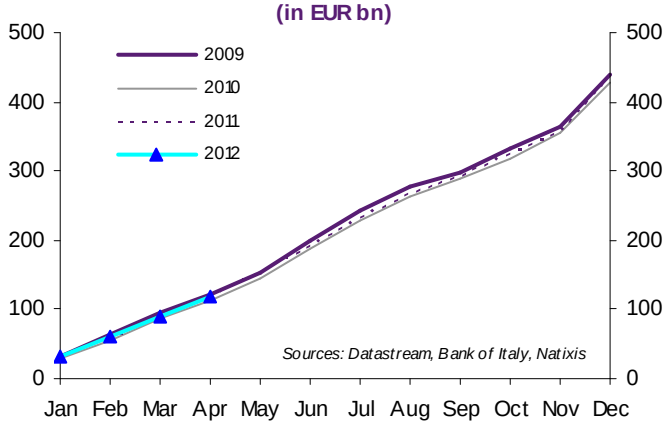


Chart 8B
Italy: Monthly cumulative tax revenues compared with the same month of the previous year (as %)

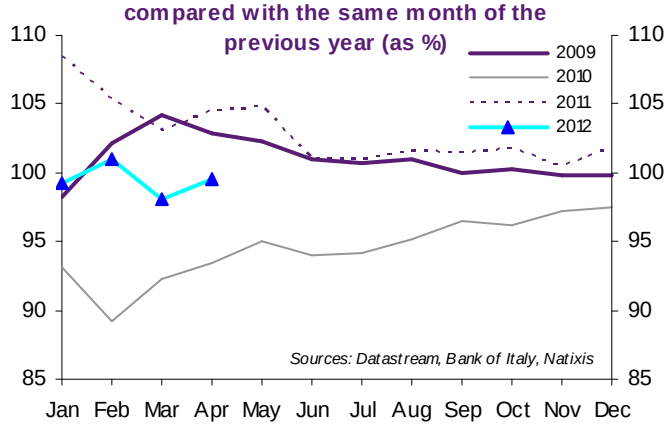


Chart 8C
Italy: Nominal GDP (Y/Y as %)

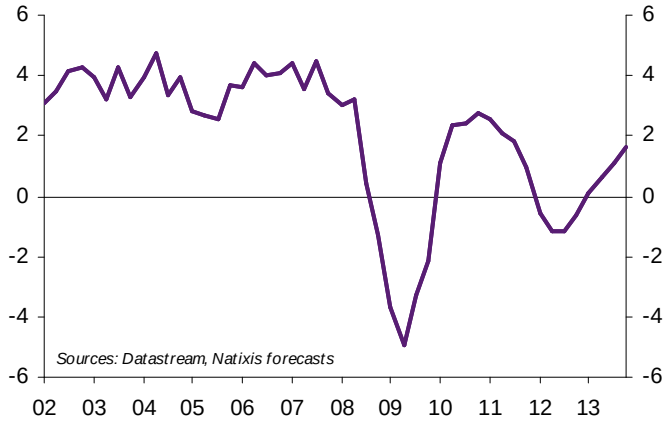


Chart 9A
Portugal: Monthly cumulative tax revenues (in EUR bn)

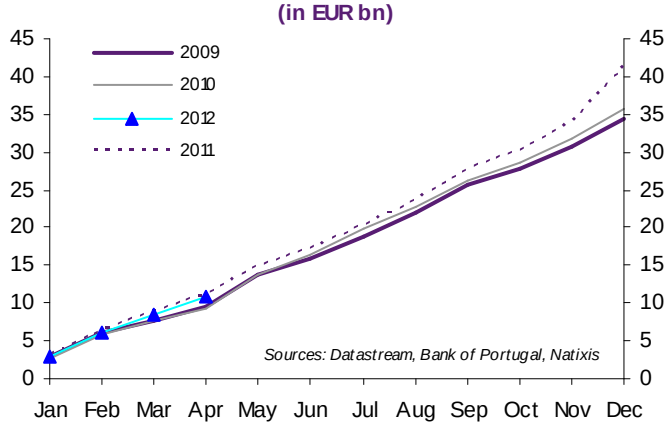


Chart 9B
Portugal: Monthly cumulative tax revenues compared with the same month of the previous year (as %)

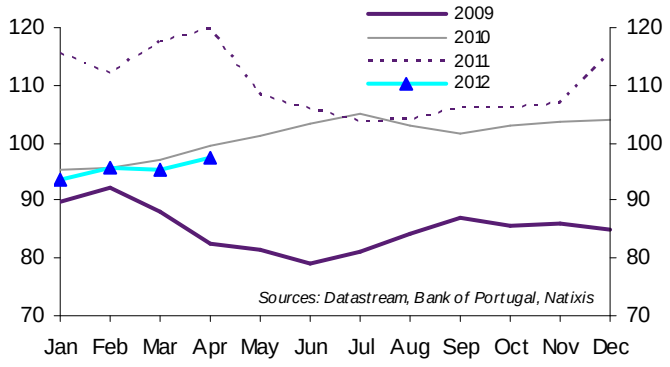


Chart 9C
Portugal: Nominal GDP (Y/Y as %)

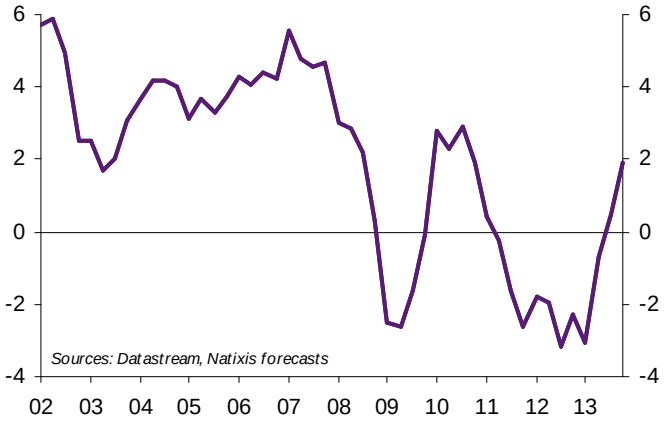


Chart 10A
Greece: Monthly cumulative tax revenues (in EUR bn)

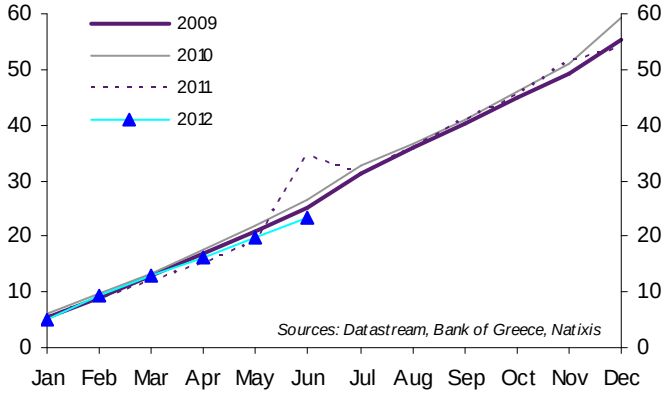


Chart 10B
Greece: Monthly cumulative tax revenues compared with the same month of the previous year (as %)

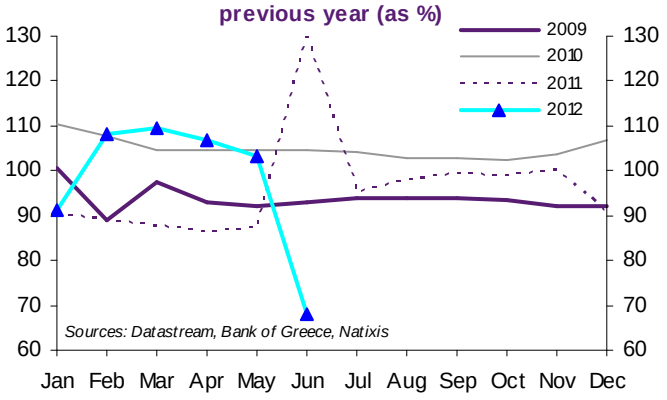


Chart 10C
Greece: Nominal GDP (Y/Y as %)

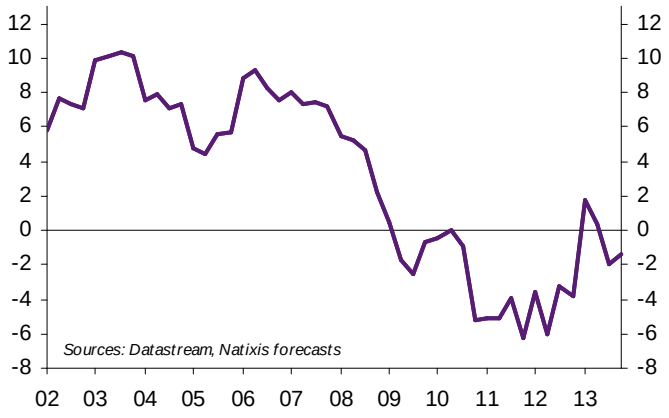


Chart 11A
France: Monthly cumulative tax revenues (in EUR bn)

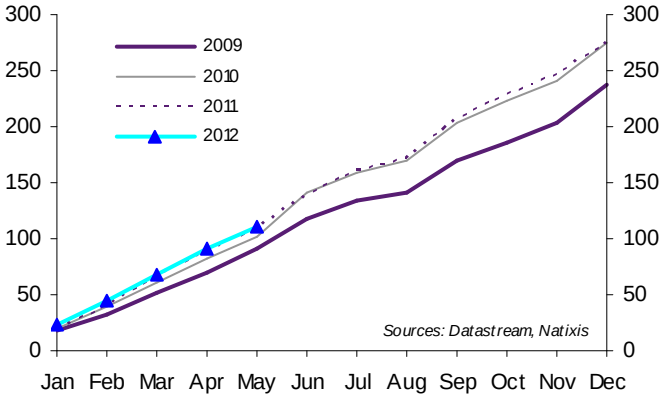


Chart 11B
France: Monthly cumulative tax revenues compared with the same month of the previous year (as %)

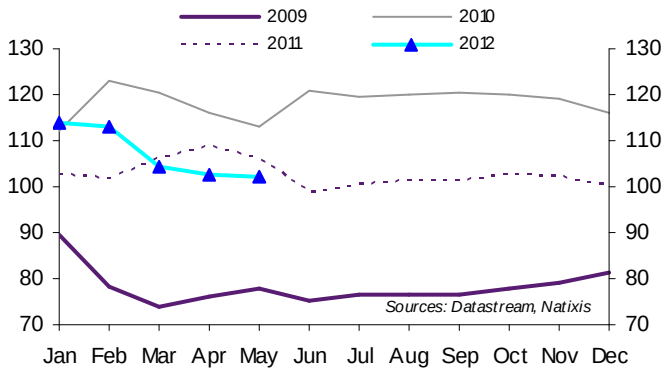
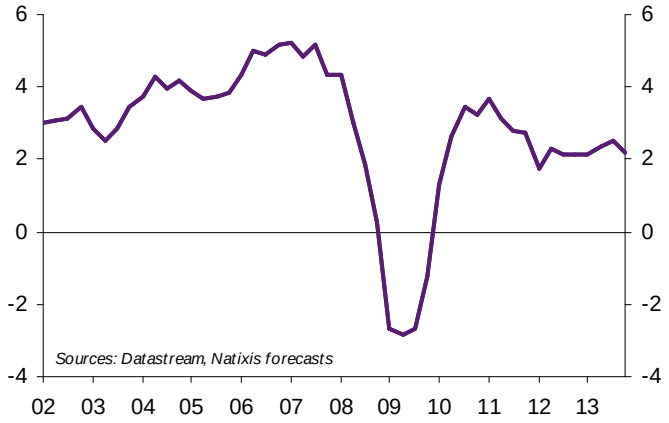


Chart 11C
France: Nominal GDP (Y/Y as %)



Conclusion: How is it possible to pull out of the divergent dynamics?

Contrary to what is normally expected, it seems that the combined dynamics of GDP and the fiscal deficit is divergent in Spain, Italy, Greece, and even in France.

The restrictive fiscal policy therefore leads to an *ex post* rise in the fiscal deficit. We believe this situation can be ascribed to:

- restrictive fiscal policies being conducted simultaneously in European countries;
- a non-linearity in the impact of these policies on activity, and therefore on tax revenues: the more restrictive the fiscal policy is in the long term, the greater its effect on real activity;
- part of the economy moving into the black economy in Spain and Greece.

Therefore, to pull out of this divergent dynamics, it would be necessary to:

- **reduce fiscal deficits more gradually**, and **country by country,** not all countries at the same time;
- **use government spending cuts to a greater extent and tax increases to a lesser extent** to limit non-linearities and growth in the black economy.

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