

The French policy mix and support for private R&D: What realities for what results?

By Benjamin Montmartin

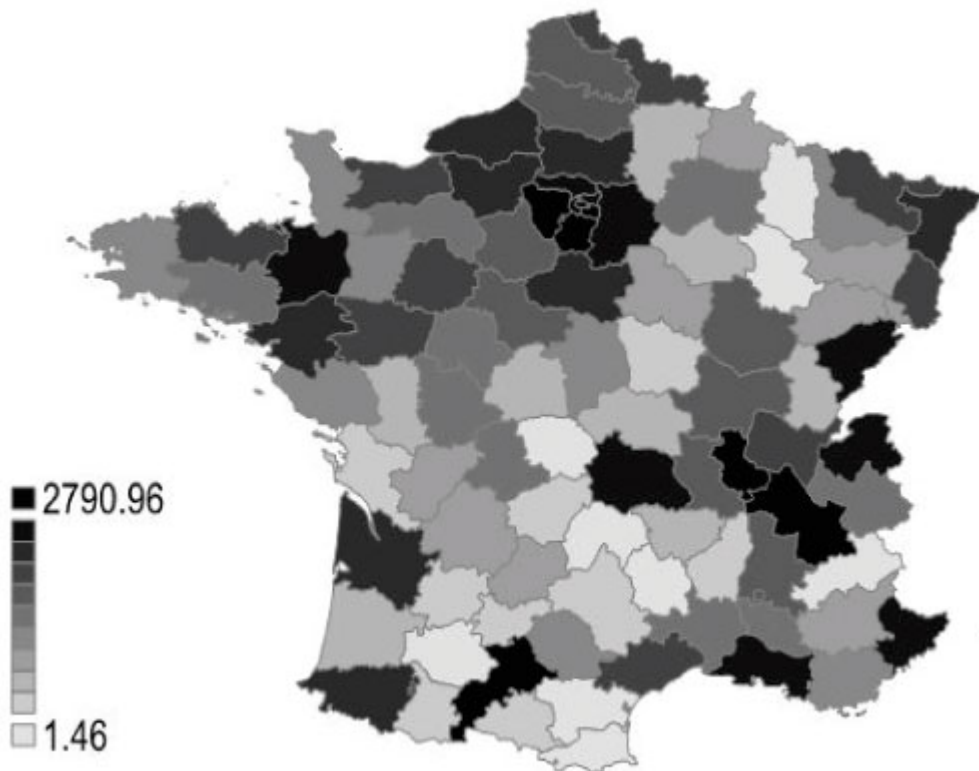
France can be viewed as a unique experimental laboratory in terms of public support for investment in R&D. Indeed, since the Research Tax Credit was reformed in 2008, France has become the most generous country in the OECD in terms of tax incentives for R&D (OECD, 2018a.) In 2014, the tax credit alone represented (MESRI, 2017) a total of nearly 6 billion euros for the State, and the specific taxation scheme on patent grant revenues (15%) costs the State between 600 and 800 million euros per year. In addition to these losses in tax revenue, there are the various measures to directly support innovation (grants, loans at subsidized rates, etc.) which are financed mainly through the Public Investment Bank (BPI), the Competitiveness centres (PC), local authorities and the European Commission. This direct support accounted for around 3.5 billion euros in 2014. The total cost of all these support measures today comes to over 10 billion euros per year, almost half a percentage point of GDP.

While innovation is one of the main drivers of growth, this is not enough to justify this level of public spending. These devices must also achieve their objective. And from this point of view, the results of the empirical studies evaluating support systems for R&D and innovation are very mixed (Salies, 2018). Moreover, there does not seem to be a direct link between the generosity of States and the level of business investment in R&D. In this respect, a simple comparison between Germany and France is instructive and cannot be explained solely by sectoral differences. In 2015 (OECD, 2018b) private sector spending on R&D in France accounted for

1.44% of GDP compared to 2.01% in Germany, while public funding for these expenditures was around 5% in Germany against almost 40% in France.

In this context, it seems necessary to better understand the performance of the French policy-mix with respect to private investment in R&D. A recent [OFCE working paper](#) reviews the effect of State aid on R&D spending by French companies. The article differs from existing studies in two main ways. First, instead of focusing on the ability of a particular instrument to generate an additionality, it simultaneously analyzes the impact of the tax credit and the various direct aids in accordance with their institutional source: local, national or European. Second, it assesses the extent to which the geographic structuring of innovation activities in France might influence the effectiveness of R&D support policies. Indeed, unlike Germany, where the geography of innovation is marked by a continuum between innovative territories (European Commission, 2014), France seems more prone to shadow effects[1], as the most innovative territories (the “hubs”) are dispersed and often surrounded by territory that is not very innovative, as shown in the figure below.

Private spending on R&D (in million euros, average 2001-2011)



Source: MESRI, author's calculations.

Our analysis uses data from firms aggregated at the departmental level over the 2001-2011 period and clearly shows the importance of the spatial organization of innovative activities for the effectiveness of innovation policy. Indeed, it appears that the specificity of the geography of R&D investment in France generates a negative spatial dependence, that is to say, that the hubs are strengthened at the expense of the territories lagging behind. Policies that fail to take this dependence into account will have an overall weaker effect.

And that's exactly what our results show. Indeed, if we do not take into account this spatial dependence, it appears that the instruments studied (tax credit and the various subsidies) are as a whole capable of generating a significant additionality effect on investment in R&D. On the other hand, if we take into account this dependency, only the national subsidies seem to be able to generate such an effect. In other words, only national grants are able to generate benefits that help all

the territories.

In our opinion, this result can be explained by the fact that national grants finance more collaborative projects involving actors from different territories and are therefore more likely to make use of complementarity. Conversely, the tax credit is not targeted geographically and does not particularly favour collaborative projects. Local grants primarily finance projects involving local forces, while European grants favour partnerships with foreign organisations. Thus, these last three sources of financing are more likely to encourage competition effects than complementarity effects between territories.

From a more overall viewpoint, our results therefore underline a nuanced effectiveness of the French policy-mix to promote R&D, as no policy studied seems to generate a significant windfall effect. Nevertheless, changes in the French policy-mix over the last decade, marked by a very pronounced increase in non-geographically targeted policies (tax credit) and, to a lesser extent, competitive policies (local subsidies) seems rather to indicate a decline in its ability to generate a very significant additionality effect.

[1] “Shadow effects” refer to the idea that a territory’s increasing attractiveness often comes at the detriment of other territories, due in particular to the impact of competitiveness issues.

References

Salies, E., 2018, [Impact du Crédit d’impôt recherche : une revue bibliographique des études sur données françaises](#), *Revue de l’OFCE* no. 154, February 2018.

OECD, 2018a, “R&D Tax incentives: France, 2017”, www.oecd.org/sti/rd-tax-stats-france.pdf, Directorate

for Science, Technology and Innovation, April.

OECD, 2018b, “OECD time-series estimates of government tax relief for business R&D”, <http://www.oecd.org/sti/rd-tax-stats-tax-expenditures.pdf>, April.

MESRI, 2017, “Le crédit d’impôt recherche en 2014”, http://cache.media.enseignementsup-recherche.gouv.fr/file/Chiffres_CIR/79/1/CIR_2017_chiffres2014_maquette_816791.pdf

European Commission, 2014, “Innovation performance: EU Member States, International Competitors and European Regions compared”, Memo, http://europa.eu/rapid/press-release_MEMO-14-140_en.htm, Figure 6.

The potential headache of measuring economies in public expenditure

By Raul Sampognaro

Since 2009, the French budget deficit has been cut by 3.3 GDP points, from 7.2 percent of GDP in 2009 to 3.9 points in 2014, even though the economic situation has been weighing heavily on the public purse. This improvement was due to the implementation of a tighter budget policy. [Between 2010 and 2013, most of the consolidation effort came from higher taxes](#), but since 2014 the effort has largely involved savings in public expenditure. In 2014, public expenditure excluding tax credits^[1] recorded its weakest growth since 1959, the year

when INSEE began to publish the national accounts: in value, spending excluding tax credits increased by 0.9%, though only 0.3% in volume terms (deflated by the GDP deflator).

At first glance it may seem counter-intuitive to talk about savings on spending even though the latter has been rising constantly. This rise is, however, well below potential growth, which reflects a real long-term effort to reduce the ratio of spending to GDP. Indeed, the formula usually used to calculate the effort on spending depends on the hypothesis adopted on potential growth:

To understand why the extent of the effort on public expenditure is dependent on potential growth, one must understand the underlying concept of the sustainability of the debt. There is a consensus on the theoretical definition of the sustainability of the public debt: it is sustainable if the current stock of debt could be repaid by the anticipated future stream of the State's net revenues^[2]. While the concept is clear, its practical application is more difficult. In practice, fiscal policy is deemed sustainable when it makes it possible to stabilize the ratio of public debt to GDP at a level deemed consistent with maintaining refinancing by the market.

Thus, changes in spending that are in line with that goal should make it possible to stabilize the share of public expenditure to GDP over the long term. However, as public spending essentially responds to social needs that are independent of the economic situation (apart from certain social benefits such as unemployment insurance), stabilizing its share in GDP at any given time (which would imply it changes in line with GDP) is neither assured nor desirable. In order to deal with this, changes in the value of public expenditure are compared to the nominal growth rate of potential GDP^[3] (which depends on the potential growth rate and the annual change in the GDP deflator).

An increase in expenditure that is above (respectively below) the potential reflects a positive (negative) impulse, because in the long run it leads to an increase (decrease) in the ratio of public spending to GDP. While the application of this concept may seem easy, potential growth is unobservable and uncertain because it is highly dependent on the assumptions made about demographic variables and future changes in productivity. In the 2016 Budget Bill (PLF), the government revised its potential growth assumptions for the years 2016 and 2017 upwards (to 1.5% instead of 1.3% as adopted at the time of the vote on the LPFP supplementary budget bill in December 2014).

This revision was justified on the basis of taking into account the structural reforms underway, in particular during the vote on the Macron Act. This was the second revision of potential since April 2014 when it was estimated at 1.6% (2014-2017 Stability Programme). The government is not the only one to repeatedly revise its assessments of potential growth. When the European Commission published its latest projections[\[4\]](#), it revised its assessment of potential growth even though its previous assessment had been issued only in May[\[5\]](#). It is not easy to see what new information could change its assessment now. These recurring revisions generally complicate the economic debate[\[6\]](#) and cloud discussion of the budget.

Hence using identical sets of hypotheses about the public finances, a measurement of savings on spending, and thus of the structural adjustment, would depend on the potential growth adopted (Table). Assuming a value for the growth in public spending (excluding tax credits) of +1.3% in 2016 and in 2017, the scale of the effort on spending was evaluated at 0.7 GDP point in October 2015 (using the hypotheses in the 2016 PLF) but 0.6 point in December 2014 (2014-2019 LPFP).

Table 1. Evaluation of the effort on public expenditure based on different hypotheses for potential growth

In %

	Potential growth			Effort on spending		
	2015	2016	2017	2015	2016	2017
2016 PLF, October 2015	1,1	1,5	1,5	-0,6	-0,7	-0,5
2014-2019 LPFP, December 2014	1,1	1,3	1,3	-0,6	-0,6	-0,4
2015 PLF, October 2014	1,1	1,3	1,3	-0,6	-0,6	-0,4
2014-2017 Stability Programme, April 2014	1,5	1,6	1,6	-0,8	-0,7	-0,5
2014 PLF, September 2013	1,5	1,6	1,6	-0,8	-0,7	-0,5
2012-2017 LPFP, January 2013	1,5	1,6	1,6	-0,8	-0,7	-0,5
November 2015 forecast	1,0	1,1	1,2	-0,5	-0,4	-0,3
May 2015 forecast	1,0	1,1	—	-0,5	-0,4	—
Ageing Working Group*, May 2015	1,1	1,1	—	-0,6	-0,4	—
Ageing Working Group**, May 2015	1,6	1,6	1,6	-0,8	-0,7	-0,5

* simple average of the potential growth of 2013 and of 2020 published in *The 2015 Ageing Report*.

** average of the 2013-2060 potential growth published in *The 2015 Ageing Report*.

Sources : PLF, LPFP, European Commission forecasts, *The 2015 Ageing Report*.

While the differences identified above may seem small, they can have significant consequences on the implementation of fiscal rules, which can lead the various players to act on their assumptions in order to change the effort shown [7]. Even though this notion should guide the vision of the future trajectory of Europe's economies, the debate winds up being hijacked. Recurrent revisions in potential growth focus discussion on the more technical aspects, even though the method of estimating potential growth is uncertain by definition and there is not even a consensus among economists. Thus, the European Semester, which should set the framework for discussion and coordination between Member States in determining the economic policy that best suits the macroeconomic context, for France and for the euro zone as a whole, gets lost amidst technical discussions that are of no particular interest.

[1] Reimbursable tax credits – essentially the CICE and the CIR credits – are recognized in public expenditure on the basis of the 2010 national accounts. In order to remain

closely in line with economic concepts, public spending will be analyzed excluding tax credits, which will be considered as a component of taxation.

[2] This definition is accepted both by the academic literature (see for example, D'Erasmus P., Mendoza E. and Zhang J., 2015, "What is a Sustainable Public Debt?", *NBER WP*, no 21574, September 2015, and by international organizations (see IMF, 2012, "Assessing Sustainability").

[3] It can also be compared to an underlying trend in public expenditure which itself takes into account the changing needs to which spending responds.

[4] The European Commission expects France to grow by 1.1% in 2015, 1.4% in 2016 and 1.7% in 2017.

[5] The evaluation has changed to the second decimal.

[6] For this debate, see H. Sterdyniak, 2015, "Faut-il encore utiliser le concept de croissance potentielle?" [Should the concept of potential growth still be used?], *Revue de l'OFCE*, no. 142, October 2015.

[7] The revisions of potential growth may have an impact on the implementation of procedures. These revisions cannot give rise to penalties. At the sanctions stage, the European Commission's hypothesis on potential growth, made at the recommendation of the Council, is used in the discussion. However, it is likely that a difference of opinion on an unobservable variable could generate friction in the process, reducing the likelihood of sanctions and making the rules less credible.

The myth of fiscal reform

By [Henri Sterdyniak](#)

On 19 November, the French Prime Minister announced that he was suspending the implementation of the “ecotax” and working on a major tax reform. This has been raised frequently in public debate, without the reform’s content and objectives being spelled out. Conflicting proposals are in fact being presented.

Some advocate a sharp reduction in taxes, which could boost the French economy by encouraging employees to work harder, households to save more, and businesses to invest and hire, which would make France more competitive. But public spending would have to be reduced further, even though the government has already committed to a 70 billion reduction by 2017. What spending should be cut in particular? Social benefits would have to be drastically reduced, which is not compatible with the maintenance of the French social model. Some want to shift the burden of social protection from businesses to households. The MEDEF for instance is calling for reducing taxes on business by 100 billion. This would require another sharp hike in taxes on households, leading to a collapse in consumption. Should France move in that direction, should it renew tax competition in Europe by lowering household income?

Others are proposing distributing the tax burden more equitably between income from labour and income from capital and strengthening the redistributive character of taxation. But France is already one of the world’s most redistributive countries, with high taxes on big earners, large estates and capital income. All these are already heavily taxed, following increases made by the Fillon and then Ayrault governments.

Some propose chasing down tax and social niches, expanding the tax brackets and reducing rates. But doesn’t this forget the

incentive role of taxation? Many programmes, even complex ones, are legitimate for reasons of equity (such as the family quotient) or as employment incentives (such as exemption from social charges on low wages or for child care) or assistance to the working poor (e.g. the PPE in-work tax allowance) or as other incentives (such as the exemption of charitable donations or union dues). Some income is of course not taxed, such as certain capital income (life insurance or PEA plans) or unrealized capital gains (but it is difficult to tax gains that are merely potential) or implicit rents (such as enjoyed by those in owner-occupied apartments), but who would dare to touch these? The point is more a patient dismantling of niches, which has been underway for several years, rather than a major reform.

Making our taxation more ecological is certainly a pressing obligation. But is there really a double dividend in jobs and in ecology? Doesn't the environmental gain have a cost in jobs, purchasing power and competitiveness? Can we increase environmental taxation in France without a worldwide agreement, which looks unlikely today? Environmental taxation is necessarily complicated if we want to avoid hitting (too hard) farmers, industry, poor people, marginal regions, disadvantaged suburbs, etc. This is the lesson of the failure of the carbon tax (in 2009) and France's ecotax (in 2013).

We must of course fight against tax evasion by the wealthy and by large corporations, but this mainly involves tax harmonization at the European level, which is not without risk if it means that France must align with the lowest bidder on taxing wealth (ISF), the corporations (IS) or income (IR).

A large-scale tax reform, one that does not alter the tax burden, inevitably means winners and losers. Who the losers will be should be made clear: retirees, homeowners, savers?

A miracle project has shot to the surface: the merger of income tax and the CSG wealth tax. But neither the terms nor

the objectives of this merger have been specified. It is running first of all into opposition on principle from the trade unions, who take a dim view of any merger of a State tax with the CSG tax, whose proceeds are allocated directly to social protection. A reform would lead towards putting the State in charge of sickness and family benefits (especially if at the same time a portion of employer contributions were taxed), with the risk that social benefits become adjustment variables with respect to the public finances.

The CSG tax currently hits employees harder than those on replacement income. A merger of CSG and income tax without specific compensation could thus be very costly for pensioners and the unemployed, and in particular for poor people who currently pay neither the CSG tax nor income tax. Conversely, capital income currently incurs a total taxation – the CSG, the Contribution to the Reimbursement of the Social Debt (CRDS) and the main social charges – of 15.5%, which is significantly higher than the 8% paid by employees. This can of course be considered as offsetting the fact that, by definition, they are not hit by employer contributions. But, as we shall see, comparing levies on different forms of income is not so easy.

A merger like this could provide an opportunity for a complete re-think of the various programmes that have gradually led to narrowing the income tax base, and in particular certain tax loopholes. But some of these tax expenditures are essential, so it would be necessary to replace them with explicit subsidies or keep them in the merged tax. The merger would not in itself solve the problem of income that is currently exempt, whether this is implicit rent or certain capital gains.

Some want to merge all the programmes helping poor people (RSA income supplement, PPE tax benefit, housing allowance) through a negative tax administered by the tax authorities, thereby ignoring the need for the kind of detailed, personalized,

real-time follow-up that France's Family Allowance Fund (CAF) is able to provide.

The lawmakers will have to decide the question of whether the merged tax should be calculated individually or jointly per family. This is an important issue: should the State recognize the right of individuals to pool their incomes and share this with their children? But should we really be launching this debate today? Is calling into question the family nature of our tax system all that urgent right now? Individual treatment would mean transferring the most significant charges, in particular at the expense of single-earner families or middle-class families. With an unchanged burden, this would imply a sharp rise in the tax burden on households. A uniform reduction in rates would be highly anti-redistributive, to the detriment of families in particular and in favour of single people without children. Individualization should necessarily be accompanied by a strong increase in benefits for children (especially large families). This would lead to a more redistributive system in favour of poor families, but better-off families would lose out, which raises difficult questions about horizontal equity.

There is also the question of what kind of levy is used. We cannot move to a simple system of withholding at source without greatly reducing the progressive, family character of the French system. A company does not need to know the income of their employee's spouse or their other income. A reform would make it possible to withhold a first tranche of income tax (of 20% of income for example), while factoring in allowances (an individual deduction, possibly a deduction for a spouse with no income, a deduction for children). The balance would then be collected (or refunded) the following year according to the tax roll. The system would hardly be simplified. Contrary to what we are told by Thomas Piketty, a CSG-income tax merger is not the touchstone of tax reform.

Should we be concerned that the evocation of a tax reform is

simply a sham, masking a refusal to address the real problems of the French economy: the difficulty of fitting into the new international division of labour; the growth of inequality in primary income due to globalization and the financialization of the economy; and the failure of the developed countries, especially the euro zone, to find new sources of growth after the financial crisis?

The problem is probably not so much the structure of taxation as it is the error in economic policy made at the level of the euro zone of adding fiscal austerity to the depressive shock caused by the financial crisis and, at the level of France, of raising taxes by 3 GDP points since 2010 (60 billion euros) to fill a public deficit attributable solely to the recession.

The French tax system takes in 46% of GDP; primary public expenditure represents 50%. At the same time, France is one of the few developed countries where income inequalities have not increased greatly in recent years. Our high level of public and social spending is a societal choice that must be maintained; the French tax system is already highly redistributive. Some reforms are of course necessary to further improve its redistributive character, to make it more transparent and socially acceptable. Nevertheless, what matters most is precisely the level of the formation of primary income. There is no miracle reform: the current system, the product of a long process of economic and social compromise, is difficult to improve.

And what if the austerity budget has succeeded better in France than elsewhere? [1]

By [Mathieu Plane](#)

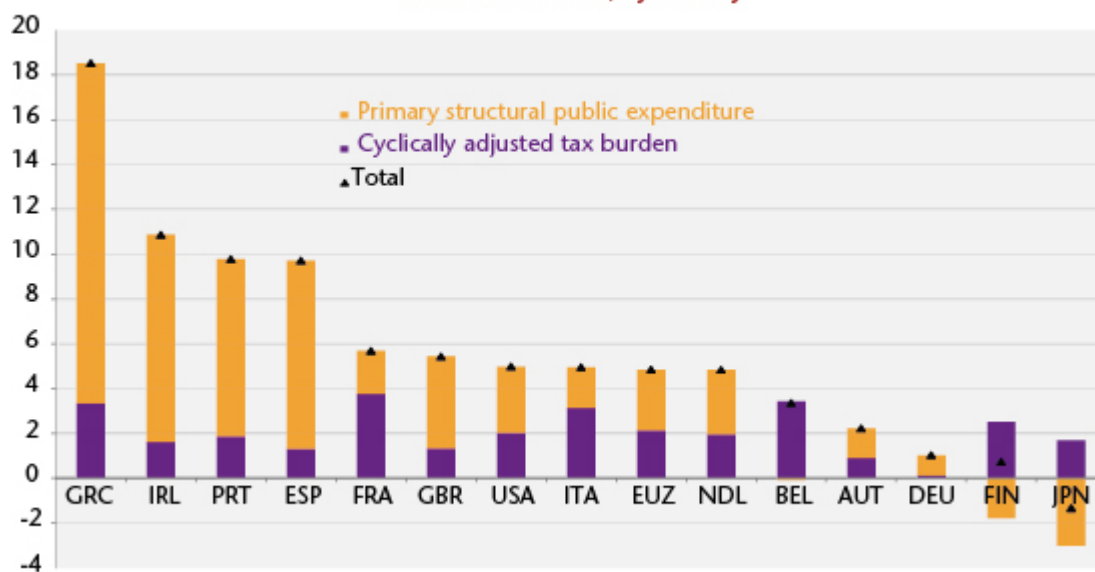
Faced with a rapid and explosive deterioration in their public accounts, the industrialized countries, particularly in Europe, have implemented large-scale austerity policies, some as early as 2010, in order to quickly reduce their deficits. In a situation like this, several questions about France's fiscal policy need to be examined:

- First, has France made a greater or lesser fiscal effort than other OECD countries to deal with its public accounts?
- Second, is there a singularity in the fiscal austerity policy implemented by France and has it had more or less effect on growth and the level of unemployment?

With the notable exception of Japan, between 2010 and 2013 all the major OECD countries implemented policies to reduce their primary structural deficits [2]. According to the [latest OECD figures](#), these policies represented a fiscal effort of about 5 percentage points of GDP over three years on average in the euro zone, the United States and the United Kingdom. In contrast, the differences within the euro zone itself were very large: they range from only 0.7 percentage points in Finland to more than 18 points in Greece. Among the major industrialized countries of the OECD, France is, after Spain, the country that has made the greatest fiscal effort since 2010 from a structural viewpoint (5.7 percentage points of GDP over three years). In the post-World War 2 era, France has never experienced such a brutal and sustained adjustment in its public accounts. For the record, the budget effort that took place in the previous period of sharp fiscal

consolidation from 1994 to 1997 was twice as small (a cumulative negative fiscal impulse of 3.3 GDP points). Between 2010 and 2013, the cyclically adjusted tax burden increased in France by 3.8 GDP points, and the structural effort on public spending represented a gain of 1.9 GDP points over four years (Figure 1). Among the OECD countries, it was France that made the greatest cyclically adjusted increase in the tax burden in the period 2010-2013. Finally, from 2010 to 2013, the structural effort to reduce the public deficit broke down as follows: two-thirds involved an increase in the tax burden and one-third came from public spending. This breakdown is different from that observed on average in the euro zone, where the fiscal effort over the period 2010-13 involved a nearly 60% reduction in public expenditure, rising to over 80% in Spain, Portugal, Greece and Ireland. In contrast, in Belgium, the entirety of the fiscal effort came from a higher tax burden. And in the case of Finland, primary structural public spending in points of potential GDP rose over the period 2010-2013, which was more than offset by the increase in the tax burden.

Figure 1. Contribution of each component to the change in the primary structural balance from 2010 to 2013, by country

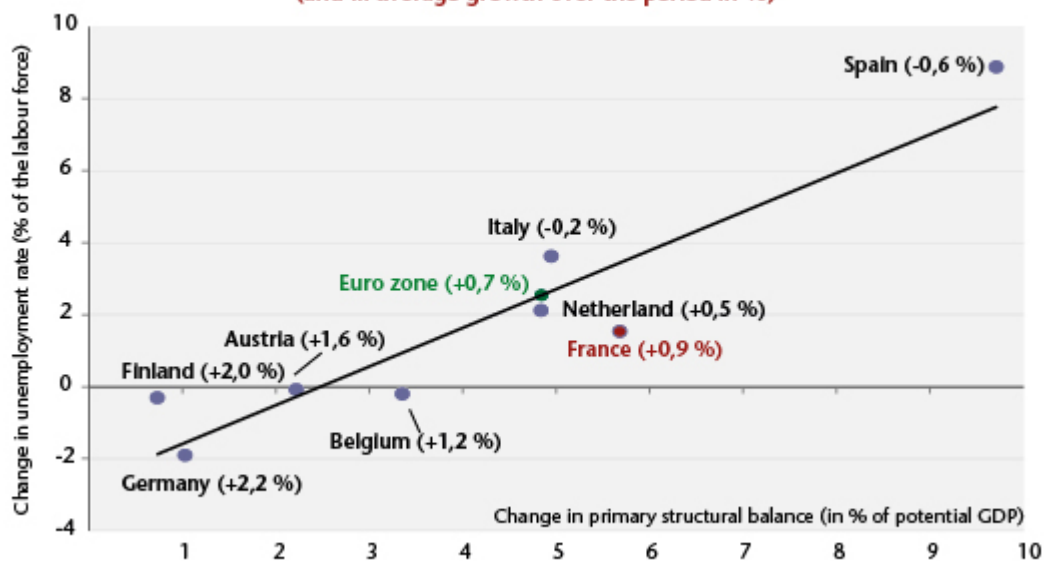


Sources: OECD, OFCE calculations.

While France's substantial budgetary efforts have undeniably had a negative impact on economic activity and employment, it

is nevertheless true that the budget decisions of the various governments since 2010 appear to have affected growth and the labour market relatively less than in most other countries in the euro zone. Within the euro zone-11, from 2010 to 2013 only four countries – Germany, Finland, Austria and Belgium – experienced average growth of over 1% per year, with unemployment rates that not only did not increase, but occasionally even fell. However, these are also the four countries that made the smallest reductions in their structural deficits over this period. France, on the other hand, is among the countries that made the greatest structural effort since 2010, and it has simultaneously managed to contain the rise in unemployment to some extent. Indeed, compared with the Netherlands, Italy and the euro zone average, France’s fiscal policy was more restrictive by about 1 GDP point from 2010 to 2013, yet the unemployment rate increased by 40% less than in the Netherlands, 60% less than the euro zone average and more than two times less than in Italy. Likewise, growth in France was higher on average over this period: 0.9% per year, against 0.5% in the Netherlands, 0.7% in the euro zone and -0.2% in Italy.

Figure 2. Change between 2010 and 2013 in the primary structural balance and the unemployment rate (and in average growth over the period in %)



Sources: OECD Economic Outlook, November 2012; OFCE calculations.

Why has the French fiscal contraction had less impact on growth and employment than in most other countries? Beyond the

economic fundamentals, some evidence suggests that the budget decisions of the successive governments since 2010 may have led to fiscal multipliers that are lower than in the other countries. After Finland and Belgium, France is the country where public spending played the smallest role in reducing the structural deficit. As illustrated by recent studies, in particular the IMF study and the article signed by economists from the central banks in Europe and the U.S., the European Commission, the OECD and the IMF, targeting fiscal adjustment through raising the tax burden rather than cutting public spending has given France smaller short-term fiscal multipliers than those observed in countries that have made the opposite choice (Greece, Portugal, Ireland and Spain). In the case of France, nearly 50% of the fiscal adjustment was achieved by an increase in the direct taxation of household and business income (Table 1). And as has also been the case for the United States, Belgium and Austria, which achieved between 50% and 75% of their fiscal adjustment by increasing direct taxation, it seems that these countries have also done best at maintaining their growth in the face of the budget cuts. Conversely, the ones that have used this lever the least in their fiscal adjustments are the southern European countries and the Netherlands.

Table. Contribution of each component to the change in the primary structural balance between 2010 and 2013, by country

In % of potential GDP															
	GRC	IRL	PRT	ESP	FRA	GBR	USA	ITA	EUZ	NLD	BEL	AUT	DEU	FIN	JPN
Primary structural balance (PSB)															
(= a + b)	18,5	10,9	9,8	9,7	5,7	5,4	5,0	4,9	4,8	4,8	3,4	2,2	1,0	0,7	-1,3
Cyclically adjusted tax burden (a)	3,3	1,6	1,9	1,3	3,8	1,3	2,0	3,1	2,1	2,0	3,4	0,9	0,1	2,5	1,7
o/w increase in direct taxes on household and business income	1,5	3,2	1,9	1,2	2,7	0,0	2,4	1,2		0,8	1,7	1,7	0,1	0,6	0,9
Primary public spending (b)	15,2	9,2	7,9	8,4	1,9	4,1	3,0	1,8	2,7	2,9	-0,1	1,3	0,9	-1,8	-3,0
Contribution of primary public spending to the change in the PSB	82	85	81	87	34	76	59	36	56	60	-2	59	89	-242	225

Sources: OECD Economic Outlook, November 2012; OFCE calculations.

[\[1\]](#) This post makes use of certain parts of the article

published in [Alternatives Economiques, M. Plane, "L'austérité peut-elle réussir en France ?", Special issue no. 96, 2nd quarter 2013.](#)

[2] The primary structural deficit measures the structural fiscal effort made by general government (*les administrations publiques*). It corresponds to the public balance, excluding interest charges, that would be generated by the government if the GDP of the economy were at its potential level. This measure is used to adjust the public balance for cyclical effects.