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ASSESSING FUTURE SUSTAINABILITY OF FRENCH PUBLIC FINANCES

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Abstract

This paper contributes to the debate on the French public finances' consolidation by investigating the long-term sustainability of France's fiscal position. We trace the historical trends of government's tax receipts and expenditures. We find that while the level of public expenditure in France is larger than in the rest of the Euro Area (mostly because of public wages and social benefits), its trend is comparable to its neighbours. Net lending is also under control, thanks to the high levels of taxation, so that we see no real risk of future unsustainability. However, the French tax system is unfair, is not sufficiently progressive, and is too complex. The paper then proceeds to assess the future of France's public finances on the basis of the current debate on the Euro Area fiscal rules. We report two analyses – theoretical and empirical – that project the inflation rate and output gap paths for the next twenty years. We finally assess fiscal rules on this ground. The 'fiscal compact' fares rather poorly compared to the alternative rules that we assess.

Keywords: deficits, debts, debt management, fiscal rules, Fiscal compact, golden rule.

JEL codes: E62, E63, H61, H68

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1. Introduction

The global economic crisis, which began in 2007 in the US financial sector, evolved into a global recession in 2008. In the fall of 2009, while the rest of the world embarked on a fragile recovery, the emergence of public finances' problems in Greece plunged the Euro Area in a second period of turmoil, this time centered on European sovereign debts. Following the revelation of wrongdoings in public finances management in Greece, all the EMU peripheral countries were forced (by markets or by fellow European governments) to embark on repeated consolidation plans. We have increasingly observed a bifurcation between a more or less healthy core (Germany, but also Finland and Austria), and a periphery that is entangled in a recessionary vicious circle. Well into the fourth year of crisis, the Euro Area continues to struggle to see the end of the tunnel.

Within this picture France's situation is interesting for a number of reasons. First, it is very hard to classify it in terms of the dichotomy between core and periphery. Indeed, its economy is struggling in terms of competitiveness (price and non-price competitiveness) and public finances as the peripheral countries, yet it remains strong and resilient thanks to a high labor productivity per hour worked, good infrastructures, large multinational firms in the corporate (most notably, in energy) and financial sectors, and relatively high R&D expenditures in the public sector.[2] France has chronic budget deficit problems, and yet its debt level remains manageable (sovereign interest rates have been low in recent years), mostly because in the past two decades France has had above average economic growth rates.

The second reason of interest in the French economy is linked to the current state of the debate on the Euro Area. As the crisis unfolded, the prevailing narrative blamed it on the fiscal profligacy of peripheral countries. Consequently, the EMU embarked on far reaching reforms of its governance that tend to strengthen the limits to government action in particular in what concerns macroeconomic management. These reforms took for granted at least two aspects: first, more stringent fiscal rules would benefit the Euro Area as a whole and, second, limiting deficits and debts has become an objective of economic policies: usual tools of economic policy like the deficit have been transformed into objectives. These two assertions have not been discussed prior to their adoption and empirical facts point to their lack of validity: fiscal rules in the Euro Area have prevented neither the global financial crisis nor the sovereign-debt crisis. Generalizing the case of some 'deviating' European governments to all European governments to legitimize fiscal consolidation is dishonest. What is certainly more valid is that the wave of fiscal consolidation in the EU has paved the way for recession and higher unemployment. In May 2012 François Hollande was elected president of France during the ratification process of the *Treaty on Stability, Coordination*

[2] See Rapport Gallois (2012) for a view of the weaknesses and strengths of the French economy.

and Governance in the Economic and Monetary Union (fiscal compact) signed by his predecessor Sarkozy. While the rejection of the Fiscal Compact, a tightened version of the Stability and Growth Pact, was pivotal in François Hollande's campaign, the ratification process continued. Moreover, France gave up its ambition to form a coalition opposing European austerity policies: in September 2012 it even passed a budget law for 2013 imposing a consolidation effort of 34 billion euros, 1.5% of French GDP and beyond what is planned in the *Fiscal Compact*.

While not discussing the French political debate, we wonder why President François Hollande did not follow the promises of the Presidential candidate Hollande. An interpretation is that between François Hollande's election and the budget law of September, European financial markets had a summer of turmoil, with speculative attacks against Spanish and Italian sovereign bonds that only stopped when the ECB announced the Outright Monetary Transaction (OMT) program. The French government could have feared to be the next in line, and to avoid being targeted by speculation, it decided to take action and bring the deficit within the Maastricht 3% limit. The argument would go that French public finances being in a dire state, the current very low yields on French treasuries were the effect of wrong market perceptions, and that when the attention turned to France it better be able to prove that it was a good pupil.

We assess the premise of that argument, which is that France has a serious problem of public finances sustainability. To do so, we will begin with a summary of the results of an independent Annual Growth Survey (iAGS, 2012), showing that most European countries, and France in particular, are carrying on fiscal consolidation that goes well beyond the requirements of the letter of the treaties. This can only be explained by the fear of unsustainable fiscal projections. Therefore, after giving some context in terms of international comparison of public finances' aggregates, we trace the evolution and the composition of government revenues and spending since the 1970s. We then look at the structure of the French public debt (average maturity, interest rates, and so on). The conclusion is that there is no serious reason to worry about sustainability, even if French public finances can certainly be improved in terms of fairness and efficiency of the system. Finally, we show by means of two small dynamic macroeconomic models (Creel, Hubert and Saraceno, 2012, 2013) that the Fiscal Compact entered into force on 1 January, 2013, will impose a cost on the French economy that other fiscal rules, equally sustainable, would not impose.

2. The French Fiscal Consolidation: Too Much of a Bad Thing?

Since 2009, most European countries have been implementing strict austerity measures that had a serious impact on their growth performance. A growing consensus (to be discussed below, see section 3.4) is emerging among economists and policy makers, that at the very least the pace of consolidation should be slowed, if not reversed. Unfortunately,

in Europe, the Commission and core Euro Area countries resist. The only effect of the recession and of the debate on austerity is a slight lengthening of the consolidation path for peripheral countries. Furthermore, a report by iAGS (2012) shows that France, like most other Euro Area countries, has been implementing measures that go well beyond the European requirements. The report further shows that there is no need to go beyond what European legislation requires, and doing so can be especially harmful if in fact the additional budgetary efforts generate less growth and, ultimately, further deterioration in the public finances due to higher social spending and lower tax revenue. What do the existing European treaties actually demand? In the case of a government deficit that exceeds 3% of GDP, the minimum effort required for fiscal adjustment consists of reducing the cyclically adjusted deficit, *i.e.* the structural deficit, by at least 0.5% of GDP per year. Furthermore, the time period for reducing the debt to 60% of GDP is 20 years. Finally, exceptional circumstances now include an 'unusual event' that could justify deviating from the current standards for the deficit.

iAGS (2012) takes for granted these exceptional circumstances and the rule requiring an annual improvement of at least 0.5% of GDP in the structural deficit. iAGS (2012) shows that the French government had fiscal maneuvering room in 2012 and 2013, while still complying with European fiscal rules. That space was not used, inflicting useless harm to the French economy. This cost on the French economy is related to the fiscal multiplier effect that has been shown recently to be non-linear (see section 3.4): the more negative the output gap, the higher the multiplier.

According to the spring 2012 European Commission forecast, the French structural deficit was supposed to decrease by 1.2% of GDP between 2011 and 2013, remaining on average slightly above what is required by the Commission. In fact, the improvement from 2011 to 2012 exceeded 0.5% of GDP, while it fell below that from 2012 to 2013.

What about the autumn 2012 forecast? The expected improvement in France's structural deficit had been expected to be 1.1% of GDP between 2011 and 2012 and then 1.4% of GDP between 2012 and 2013, taking into account the government's commitment to reduce public spending and raise taxes. These projected improvements in the structural deficit were two and three times greater than what European fiscal rules require, which is excessive! For the year 2013, this amounts to almost 20 billion euros that need not be levied on French households and businesses. Abandoning this levy would not mean abandoning fiscal austerity, but rather *spreading it out over time*.

Furthermore, the European Commission expects a slowdown in the French economy in 2013. Unless one argues that the French government is responsible for this slowdown – and while this might indeed be the case in light of the austerity budget the government is imposing on the French economy, it is far from clear that the European Commission would want to employ such an argument, given its role in championing austerity! – this deterioration in the country's growth prospects could fall within the category of an 'unusual

event', thus giving France an opening to invoke exceptional circumstances to *stagger* and *extend* its fiscal adjustment efforts.

Instead of awaiting the miraculous effects of structural reform – a potentially lengthy and uncertain process – all that is really needed is to apply the regulations in force, without imposing an overly restrictive reading of what they contain, so as to limit the reduction in growth being caused by austerity and avoid a new period of rising unemployment. According to the conclusions of the iAGS report (2012), staggering the fiscal austerity measures in France would lead to adding 0.7 GDP point to growth every year from 2013 to 2017.

The 'unusual event' constituted by yet another year of very low growth in 2013 for France also opens the possibility of suspending the austerity policies, at least temporarily. Once again according to the findings of the iAGS report (2012), the French government should put off till 2016 its policy of consolidating the public finances. The gain in terms of growth would be 0.9 percentage point per year between 2013 and 2017. Provided that this policy is actually conducted carefully and not postponed indefinitely, it would enable France to reduce its public debt to GDP ratio in compliance with existing EU treaties: France sovereign debt would reach 60% of GDP in 2032.

Some may argue that the French public debt trend may vary according to non-expected events and shocks, hence the requirement to foster austerity in the short- to mid-run to grasp future rooms for maneuver to cope with these possible events and shocks. Nevertheless, austerity in the short run is counterproductive if the output gap is negative: slower growth (or even lower output) may produce an increase in the debt to GDP ratio despite the austerity measures.

Moreover, a question remains unanswered. Why did France (and most other European countries) feel compelled to implement consolidation measures that even went beyond the requirements of the Stability and Growth Pact (and now of the Fiscal Compact)? A widespread explanation is that in the current situation countries had to prove that they were overzealous in their effort to enforce fiscal discipline, because they were being closely watched by financial markets worried by future sustainability. It is common nowadays to hear in policy circles and in Brussels that even if the fundamentals would require a fiscal stimulus, public finances (in France as well as in many other EU countries) are so poor that markets would punish any deviation from fiscal discipline. It is then worth investigating this claim a bit further, and to assess whether public finances in France are really in the dire situation often depicted. This is what will be undertaken in the next section.

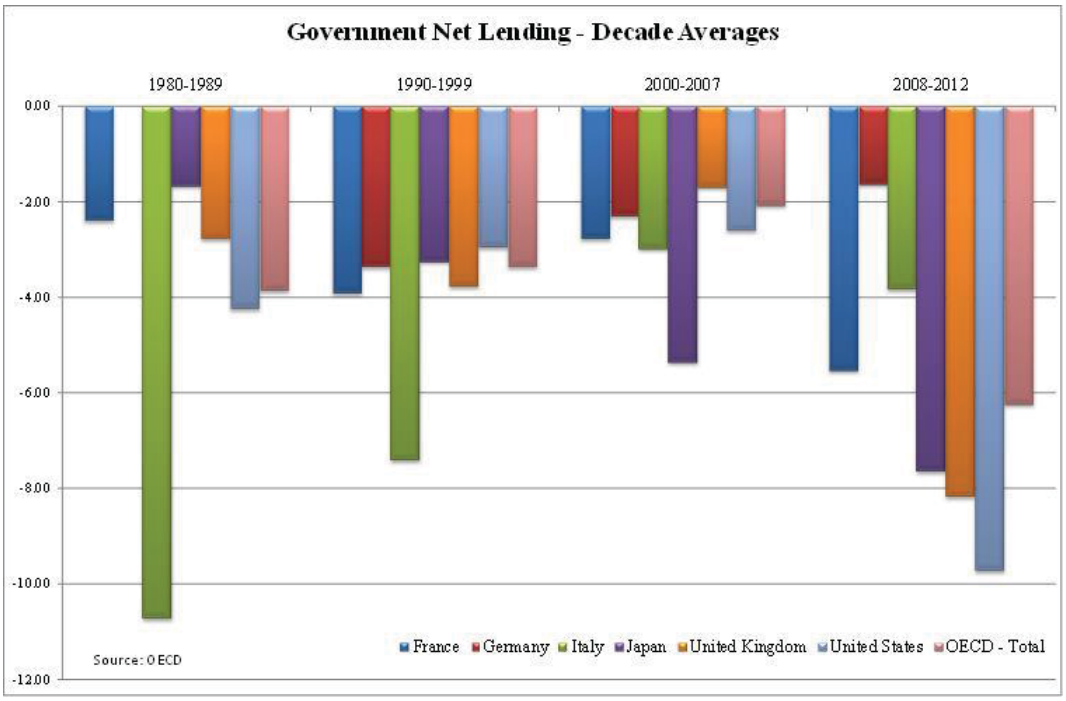
3. French Public Finances: An Overview

3.1 The long term trend in public finances: an international comparison

Before looking into the details of France's public finances, it may be worth giving some context, by means of a comparison with other major advanced economies.

This comparison reveals that France's public finances situation is not extraordinary. If we take a long view, as in Figure 1, we can observe that France on average since the 1980s has never run deficits substantially larger than the average of other OECD countries.

Figure 1. Net Lending over the Long Term



Source: OECD. Unless otherwise specified, in this and in the following tables and figures, we report data downloaded from Thompson's Datastream or from the sources' websites, on which we performed our own calculations.

Quite naturally, this translates into an accumulated stock of debt that is also not significantly different from other countries. If we look at Table 1, we can observe that French gross debt remained slightly below the Euro Area average during the crisis, and is forecast by the IMF to remain so in the foreseeable future.

Table 1. General Government Gross Debt - % of GDP

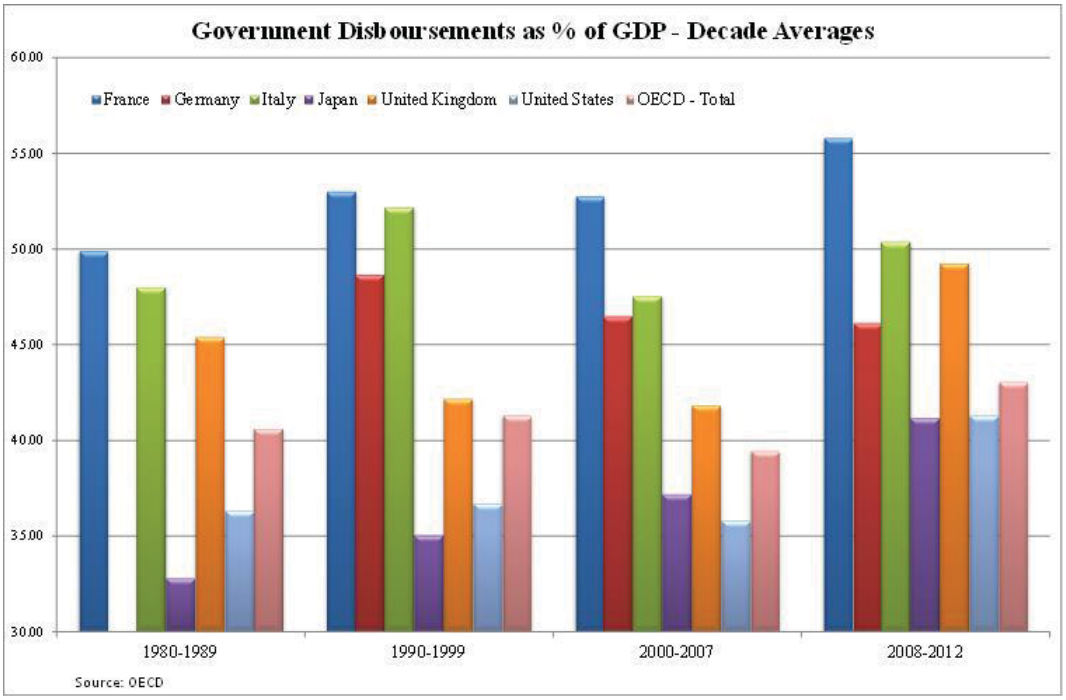
	2007	*2012*	*2017*
Germany	65.355	83.038	73.701
Italy	103.082	126.332	120.635
France	64.215	89.968	86.457
USA	67.161	107.18	114.015
UK	43.713	88.684	93.722
Japan	183.012	236.564	250.328
G7	83.47	125.146	127.566
Eurozone	66.432	93.624	89.509

Source: IMF WEO

While the general situation of France in relation to its public finances' balances and sustainability, do not stand out as special among developed countries, its share of government expenditure is indeed larger than in other OECD large economies (

Figure 2).

Figure 2. Government Spending



Source: OECD.

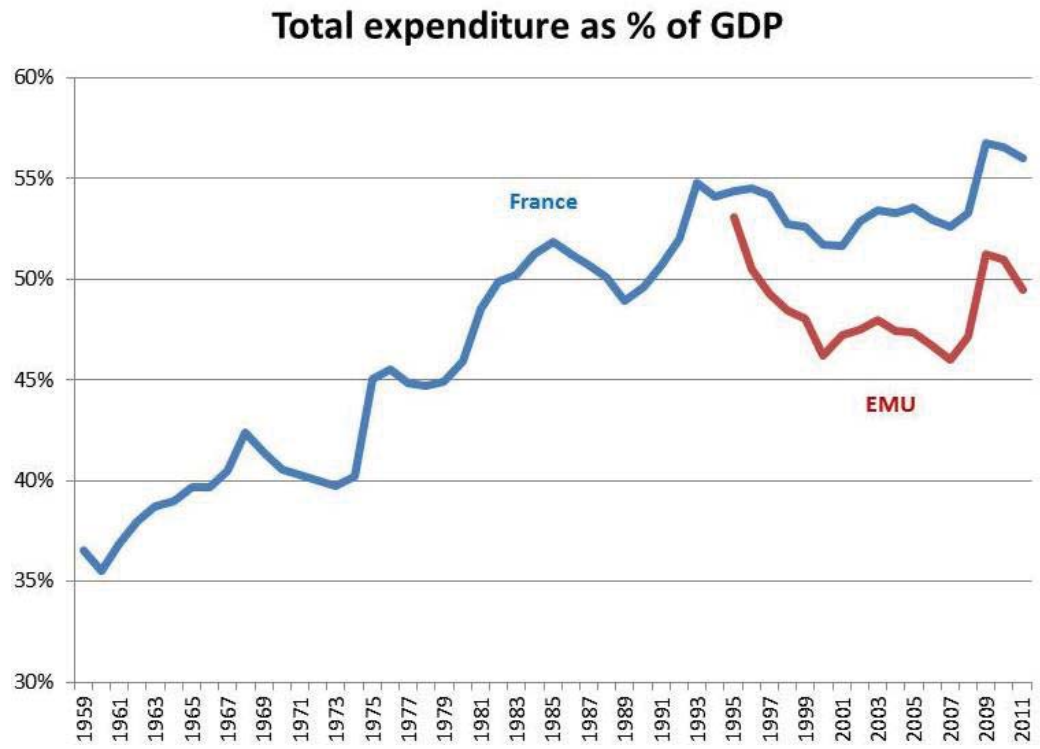
It can be seen that government expenditure in France is over 12 percentage points higher than the average of OECD countries, and a full 5 points larger than the second largest spender among the large economies, Italy. This difference may be found, almost unchanged, in the ratio of government consumption spending to GDP. For this as well, France stands well above the OECD average, even if the difference is not as large as for total expenditure. This amounts to saying that the excess of French government expenditure over the OECD total can be mostly attributed to consumption of goods and services, and to a smaller extent to other spending items (mostly social security).

The next sections deal with the evolution in time and composition of French public expenditure and revenues; we then come back to the issue of public finances, assessing the composition and sustainability of the French public debt.

3.2 Trends in Expenditure, 1959-2011

As we reported in the previous sub-section, the ratio of total government expenditure over GDP has been almost constantly increasing since the late 1950s. In 2011 it amounted to 11,180.7 billion euros, or 56% of GDP (Figure 3).

Figure 3. Public Expenditure



Sources: INSEE and Eurostat.

This ratio is almost seven percentage points larger than the Euro Area average (49.5%). To a certain extent this comparison is influenced by the fact that in some countries, health, education and pension services are provided by the private sector, whereas they are provided by the general government in France.[3]

A large part of the increase in France public spending happened between 1959 and the early 1990s. The average growth rate of the ratio between 1959 and 1993 was of the order of 1.2%, while since then it has increased by a mere 0.12% per year (and it had actually decreased before the crisis started in 2007). It appears therefore that, contrary to conventional wisdom, the ratio of public expenditure to GDP had stabilized before the crisis; most likely, this happened thanks to the external constraint represented by the Maastricht treaty and the European fiscal norms.

The latest substantial surge of public spending in France dates back to the 1974-84 period, when primary public expenditures were growing at a rate of 5.1 % per year in real

[3] In France, the health system operates mostly as a public insurance system even though a large part of health care supply is provided by private doctors (*médecine libérale*).

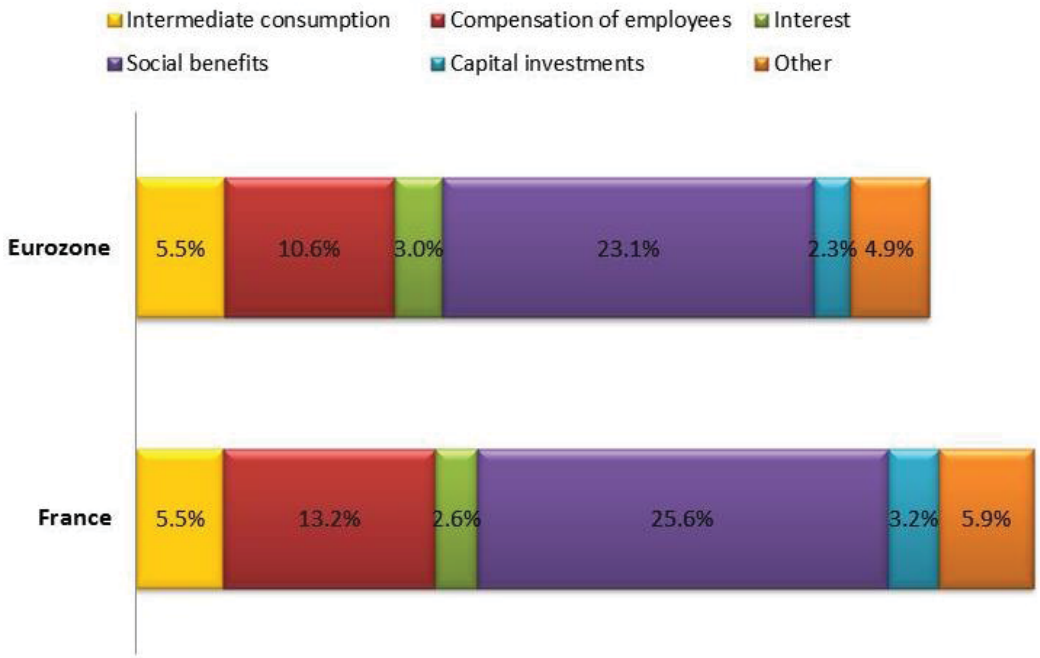
terms, and GDP was growing at 2.2 %. In the 1980s and 1990s, primary expenditures grew at a rate similar to that of GDP though their allocation between the different government tiers was modified. Disaggregating general expenditures shows that the central-to-general government expenditures ratio decreased sharply from 50% down to 35% at the beginning of the 2000s. Due to the gradual application of the decentralization laws of 1982-83 (which transferred some functions from central government to local governments, now more involved than before in spending on education and social interventions), the share of local government expenditures had been rising steadily in the 1980s and 1990s up to 10 percentage points of GDP (to be compared with 7.9 points in 1980). Moreover, social expenditures grew by 5 percentage points of GDP over the same period; most of this rise was linked to old-age pensions – they have contributed by more than 2 percentage points of GDP – and to health expenditures which have contributed by almost 1 percentage point of GDP. All in all, the rise in expenditures by local governments and social institutions was met by lower spending by the central government.

The most substantial source of spending cuts in France since the 1980s has been wage restraint. A strict management of public-sector wages, especially between 1984 and 1987 and between 1992 and 1993, was implemented. The persistent high unemployment rate in France certainly helped curbing wages both in the public and in the private sector. Moreover, since 2004, public-sector employment has started decreasing because retirees from the public sector have no longer been fully replaced.

Conversely, social expenditures and transfers rose sharply as reported above. This rise occurred in spite of a series of measures designed to restrict eligibility and generosity of the various allowances, most notably old-age pensions, unemployment benefits, active labor-market policies (like programs of subsidized employment contracts for low-skilled workers) and health care reimbursement. Most expenditure cuts in the 2000s hit the subsidised jobs (jobs for young unskilled individuals, or *emplois jeunes*) that had been initially promoted by the 1997-2002 left-wing government. However, those subsidized jobs have sometimes changed labels (*contrats jeunes en entreprises*, during right-wing governments, *emplois d'avenir* with the current government). *Emplois d'avenir*, full-time jobs, which are planned to last a maximum of 5 years and are paid at least the minimum wage, will be 75% funded by the State, with the rest of the cost being borne by local authorities, associations, foundations and business. According to Heyer and Plane (2012), the creation of 150,000 of these jobs will increase the *ex post* budget deficit by a mere 0.1% of GDP after 5 years, with an *ex ante* cost of 0.2% of GDP.

Indeed, looking at the composition of public spending in percentage points of GDP (Figure 4), one can observe that with respect to the Euro Area average most of the extra spending of France comes from public wages and social benefits (in both cases about 2.5 percentage points more than Euro Area average), thus explaining why so far most of the efforts to curb expenditure have focused on driving down these two spending items. Spending for public investment is also larger in France than in the average of other Euro Area countries (3.2% against 2.3%); but in both cases the amount seems rather modest especially if we consider that it is gross investment, hence including capital depreciation.

Figure 4. Composition of Government Expenditure in 2011, in percent of GDP



Sources: INSEE and Eurostat.

Drawing on the composition of government expenditure in 2011 (as percentage of GDP) the largest bulk of spending goes to social benefits (46%, or 25.6% of GDP), and to public wages (23%, or 13.2% of GDP). Interest charges only account for 5% of overall spending. This is, of course, due to the exceptionally low level of interest rates, a consequence of the storm that has hit Euro Area peripheral countries, but also due to a very skilful management of the stock of debt (see section 3 below).

Taking a longer perspective, there is striking evidence that the shares of social benefits and public wages have remained strong at least since 1959. Moreover, the share of social benefits on the total has slightly increased since the 1950s, while the weight of wages and intermediate consumption (operating expenses) has decreased.

In the early 2010s, public investment is significantly lower than at its peak, in the mid-1960s, and while interest rates never increased substantially (rather the opposite), the

increase of public debt from the early 1980s on has caused a significant increase of interest payments.

3.3 The French tax system: a few stylized facts

Four important features are generally associated with the French tax system: tax levies are high, the progressive part of the French tax system rests on a narrow basis, the French tax system lacks fairness and it is very complex.

3.3.1 Tax levies are high

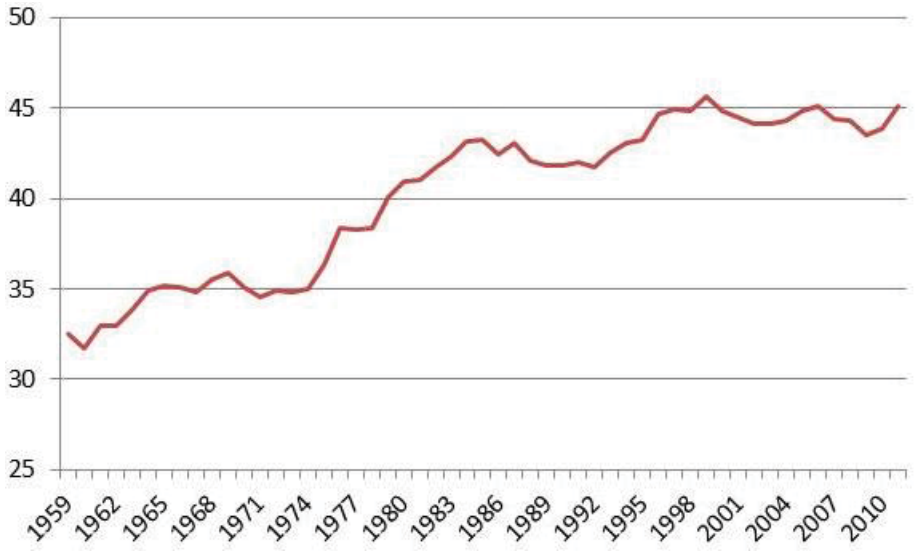
In 2011 the global average tax rate in France was 45%, to be compared with an average EU tax rate of 40%. The level of compulsory levies in France is certainly high. It has been relatively constant since the late 1990s, despite several attempts to reduce tax rates under the mandates of Presidents J. Chirac and N. Sarkozy. The most noticeable tax modification has certainly been the 50%-cap according to which the total amount of direct taxes paid by a household could not exceed 50% of its annual (capital and labor) revenues. Introduced in 2007, this measure was later abolished when the rise of public deficits required sharing the burden of consolidation between higher taxes and lower spending. The motivation of the 50%-cap (known as the tax shield) to foster work and entrepreneurial incentives was finally in contradiction with the necessity of funding fiscal packages for private firms (like the car industry and banks) and social spending to dampen income losses during the world financial crisis. In an economy, which has long evidenced global average tax rates above 40%, the tax shield at 50% was certainly a puzzle: Landais et al. (2011) recall that in a country where the average tax rate has been close to 45% for many years, it is inevitable that some tax payers pay more than 50% of taxes, except in a flat tax system. However, France does not have a flat tax system.

The rise in compulsory levies (in proportion to GDP) has been very strong between the early 1960s and the late 1990s (Figure 5). The longest and steepest increase occurred after the first oil shock and up to the mid-1980s, hence after the so-called 'trente glorieuses' of almost non-interrupted 30 years of real economic growth past WWII. The rise in taxes in France has coincided with new social spending, higher public debt and subsequent net interests.

3.3.2 A progressive tax system with a narrow basis

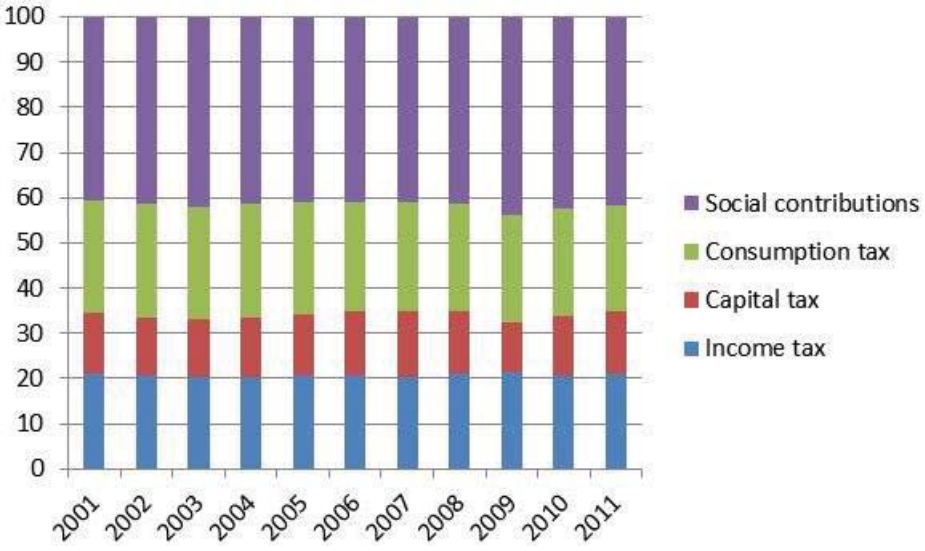
Tax revenues in France can be split into four main categories: income taxes, capital taxes, consumption taxes and social contributions. Their different shares are rather uneven. In 2011, taxes on personal incomes represented 21% of overall taxes in France, taxes on capital 14%, consumption taxes 23% and social contributions 42%. Since only taxes on personal incomes retain some progressive features, it is straightforward that the French tax system cannot be a progressive one. This is not a novel feature in France: at least since the beginning of the 2000s, the progressive part of the tax system has rested on a narrow basis (Figure 6).

Figure 5. Compulsory levies, in % of GDP



Source : INSEE.

Figure 6. Evolution of the tax structure, 2001-2011



Source: INSEE.

Income taxes are split into two categories: the first one, called IR (*impôt sur le revenu*), is a progressive tax with tax rates spread from 5.5% to 45% of household income; and the second one, called CSG+CRDS (*Contribution sociale généralisée+contribution au*

remboursement de la dette sociale) is a flat tax at 8% of household income. Both taxes are levied on labor and capital incomes, but the yield of CSG+CRDS is almost twice that of IR. IR revenues are 50 billion euros per year, hence 6% of the total amount of compulsory levies in France.

Capital taxes are levied on corporate profits according to a flat rate of 20%, which yields 35 billion euros of revenues per year; a wealth tax is levied according to a progressive system that yields 3 billion euros of tax revenues per year. A property tax complements capital taxes and yields 15 billion euros per year.

Consumption taxes yield more than 200 billion euros per year. By their nature, these taxes are regressive: low income households pay a higher share of their income in consumption taxes than high income households.

The remaining part of compulsory levies and the main one is social contributions. Landais et al. (2011) recall that the 23% of national income that represent the amount of social contributions paid each year by French households is a very substantial amount in comparison with other European countries. It remains that these contributions not only finance replacement incomes (pensions under a PAYG system, and unemployment allowances, both make up for 13% of national income) but also health insurance, family allowances and vocational training.

3.3.3 The French tax system lacks fairness and is complex

Landais et al. (2011) show that the French tax system is regressive: although from the 1st to 50th percentile, effective tax rates are smoothly growing, they remain constant between the 50th and the 95th before declining rather substantially for the top-5% of the income distribution. Hence, whereas households from the middle-class pay almost 50% of their income in taxes, households in the top 0.1% of income distribution pay only 35%.

Two reasons explain this result. First, most of tax revenues originate in regressive taxes like consumption taxes but also social contributions. Since the latter are used to finance allowances, they benefit for pensioners, with high life expectancy than to those with a shorter one, for longer by definition. There will be transfers from low income to high income households because average life expectancy is higher for high income than low income households. Between 2000 and 2008, the ratio of life expectancy at 60 between senior executives and workers (respectively employees) was 1.22 and 1.14 respectively according to INSEE. Second, the narrow basis for progressive taxation makes it impossible for the income and capital taxes to dampen the regressive feature of other taxes. Moreover, there are many tax exemptions, which limit the yield of these taxes.

Besides the large incidence of social contribution to French tax revenues, which makes it difficult to draw comparisons with other countries, the French tax system includes an approximate number of 400 tax exemptions. They can be divided in five categories.

First, a few taxpayers receive large tax exemptions for their investments in the film industry or in the overseas' departments. Some firms also receive the research tax credit. Second, donations up to a limit give rise to an exemption: below 20% of taxable income, up to 66% of donations can be deduced from the income tax. Third, the use of the denomination 'taxable income' reveals that a certain part of income is *automatically* exempted from the income tax: 10% of wages and pensions (up to a limit) and up to 40% of dividends (without limit) are exempted. Fourth, up to 10,000 euros, half of the gross nominal wage, including employer social contributions, paid to maids and baby sitters, also give rise to a tax exemption. Fifth, the consumption tax system includes lower VAT for some foods, for restaurants and for craftsman work.

3.3.4 The French tax system under reform

Different fiscal reforms have been undertaken since the 1990s in France. We will mention a few of them.

To begin with, the value-added tax (VAT) has witnessed many changes since the late 1980s. The decrease in the VAT rate in 1988 that was undertaken to comply with EC harmonization was reversed in 1995 after the highest rate rose from 18.6% to 20.6%. This and the resumption of economic growth induced a slight increase in the proceeds of this tax between 1995 and 1997 (of about 0.5 percentage point of GDP). Its proceeds have since decreased. On 1 April, 2000, the VAT slightly declined to 19.6%, with a reduced rate at 5.5% in agreement with Appendix H of European VAT Directive of 1977. In late 2011, a second reduced rate at 7% was introduced. Only goods of bare necessities were applied the smallest rate, the others formerly falling under the 5.5%-rate incurring a higher rate at 7%. In January 2014, the French government will implement a VAT reform: the highest rate will be 20%, whereas the two reduced rate will be 10% (for the former 7% rate) and 5% (for the former 5.5% rate). The VAT reform is meant to yield a supplement of tax receipts of more than 6 billion euros per year.

Secondly, the tax on corporate profits has been declining during the 1980s to harmonize with the other EU member states; it was set at 33.3% in 1993, with a reduced rate at 15% for profits under a threshold. Despite a downward trend, taxes were increased twice during the 1990s. In 1995, the deliberate increase in revenues was of 0.5 billion euros thanks to an increase in the tax base, and the total rise in the proceeds of the tax was equal to 1.5 billion euros. In 1998, i.e. on the eve of EMU, the deliberate effort imposed on firms amounted to 1 billion euros and the total rise in the proceeds of the tax on corporate profits was equal to 2.6 billion euros. Finally, since 2000 firms pay a 'social contribution on profits'. It remains that though the tax rate is among the highest in the EU, its proceeds and efficiency are among the lowest: the many abatements and exemptions that exist have considerably reduced the tax base (Le Cacheux, 2008).

Thirdly, in June 2013, the Ayrault government planned a reform of the family quotient that will start impacting tax receipts in 2014. The family quotient (FQ) represents the units of

a fiscal household (or fiscal unit). For instance, a couple has an FQ of 2, and an individual taxpayer with a child forms a fiscal unit with an FQ of 1.5. The FQ ceiling will be reduced from 2,000 to 1,500 euros. The FQ ceiling represents the maximum abatement that a fiscal unit with children can achieve. This reform will bear on top-income fiscal units and is meant to yield an increase in tax receipts of 1.3 billion euros per year. The reform will change the distribution of income taxes between top-income and low-income fiscal units, at the expense of the formers.

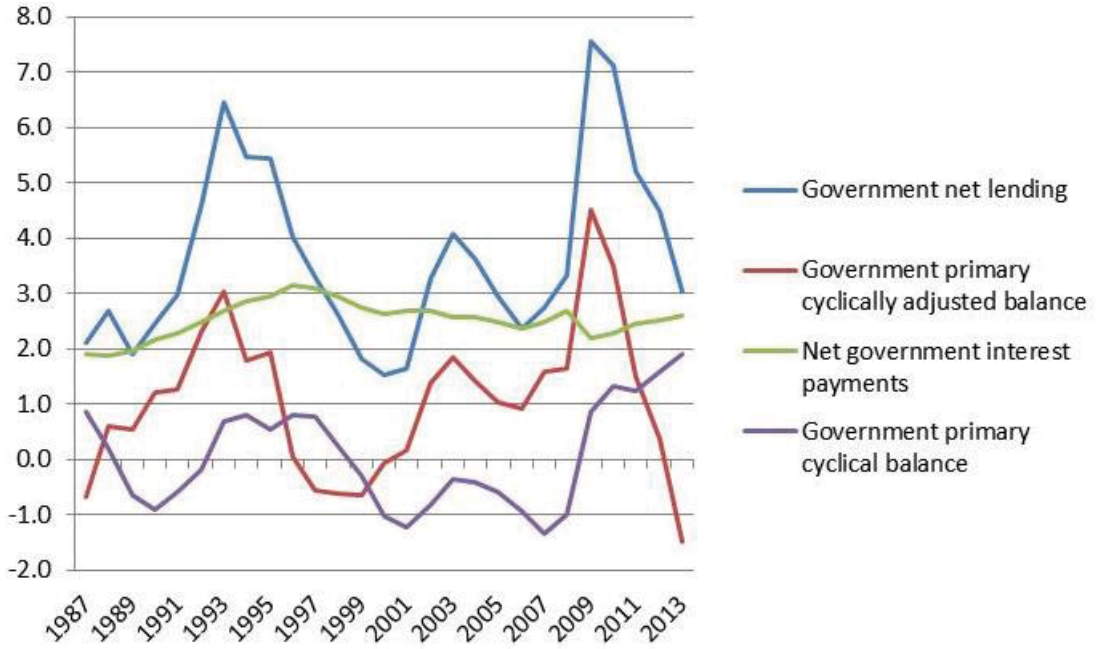
Since 1999, successive governments have also taken measures to *cut* taxes. Under the Jospin government, the local business tax and employers' social contributions were reduced. As far as households were concerned, they benefited from the decrease in the top-marginal rate of the personal income tax, as well as from the creation of both an earned income tax credit (part of in-work benefit schemes) and the modification of the local income tax for poor households to remove the so-called 'poverty trap'. This government also awarded a targeted reduced rate for real estate investments. As for the Raffarin and De Villepin governments, they lowered the income tax rate. After three years of constant decrease (from 2002 to 2004), the following Law of Finances enforced a pause in tax decrease. The necessity to curb the public deficit, to pass under the 3% of GDP ceiling of the Stability and Growth Pact, has been the major explanation for this sudden stop. The Fillon government in 2007 enacted a 'tax shield' that we already mentioned. This cap on households' taxes was later abandoned during the same legislature. Finally, the Ayrault government decided upon a joint reform of the VAT (already mentioned above) and social contributions. While the first will be increased in 2014, the second will be decreased, hence giving rise to a 'quasi-social' VAT (Heyer, Plane and Timbeau, 2012). A competitive devaluation might ensue, under the provision that domestic firms pass the lower social contributions on their production prices (before VAT is applied) and foreign firms do not modify their mark-ups or production costs to compensate for higher prices including VAT. According to the assessment by Heyer, Plane and Timbeau (2012), the 'social VAT' reform will have a minor impact on French GDP, employment and exports. They show that when domestic firms use the reduction in social contributions to increase mark-ups, firms' profitability in France is weakened, as happened as a result of the consequences of the global financial crisis. Also, and by the consequences of a similar type of VAT reform in Germany in the 2000s, the impact of the reform in France would even be negative on GDP and employment, following an increase in consumer prices.

3.4 What do we learn from public deficits?

The trends of public spending and tax receipts in France have led to relatively substantial deficits since the late 1980s (Figure 7). The real crises of the early 1990s and late 2010s pushed deficits at unusual heights, i.e. above 6 and 7 percent of GDP. Even excluding these heights, the average public deficit in France since 1987 has been 3.2 percent of GDP. Quite interestingly, public deficits have frequently hit or exceeded the limit authorized by the Maastricht criteria and the Stability and Growth Pact.

The regular high-level of French public deficits, in relation to the European so-called 'norms' on 'adequate fiscal rules' (see Fitoussi and Saraceno, 2008),[4] has certainly reduced the margins for maneuver when the global financial crisis happened. Between 2008 and 2009, the deficit rose by 4.2 percent of GDP, hence one point more than in Germany. However, German deficit in 2009 barely hit the 3% limit, whereas France largely exceeded it. Consequently, and under the auspices of European fiscal rules, French governments have had to limit *early* and *steeply* their public imbalances, hence producing a sharp fiscal contraction. Between 2010 and 2013, the deficit was initially expected to decrease by 4.2 percent of GDP, hence erasing the previous crisis-related surge. Nevertheless, this expectation has been revised at the beginning of 2013. As we write (July 2013), France does not forecast to return below the threshold of 3% before the year 2015. The Commission and the other European governments *de facto* accepted this delay at the end of May 2013.

Figure 7. Public deficits, in % of GDP



Source: OECD.

Two main reasons explain that the fiscal deficit will not return to 3% of GDP in 2013, but will be close to 3.7% of GDP. First, GDP growth forecasts are gloomy, not only in France but also in the Euro Area and the EU, the two main trade and financial partners of France. Gloomy prospects mean that tax bases will be lower and social spending higher than initially expected, hence the higher updated deficit. Second, revised fiscal multipliers by the IMF (see Blanchard and Leigh, 2013, and the IMF World Economic Outlook 2012) have revived attention about the non-linearity of fiscal multipliers *vis-à-vis* the values of the output gap.

[4] Fitoussi and Saraceno (2008) suggest the view that the Stability Pact is a public social norm that countries obey in order to preserve reputation among the other members of the EU. Using this extreme—but not implausible—hypothesis, they show that reputation issues may cause the emergence of a stable but inferior equilibrium.

Indeed, a few papers (Creel, Heyer and Plane, 2011; Auerbach and Gorodnichenko, 2012; Batini et al., 2012; de Long and Summers, 2012) show empirically that fiscal multipliers are stronger under recession and slow growth than at full employment. This is certainly not a novel idea since it is at the core of J.M. Keynes' plea in favor of fiscal policy during the Great Depression. Nevertheless, these empirical studies put to the forefront that what fails in theory (fiscal contraction) also fails in practice. Although so far in France, it has had no influence on policy decisions, it has on the assessment of their consequences, hence on macroeconomic forecasts.

The preceding paragraph has linked public deficits to economic growth. It is certainly also important to draw attention to the composition of the public deficit. The latter can be split into three components: first, net interests paid on past public debts; second, the primary cyclical deficit and, third, the primary cyclically-adjusted deficit. The latter component is the most discretionary part of the overall deficit and can be used to gauge the fiscal stance. Measuring the cyclical and cyclically-adjusted components of a public deficit is a tricky issue, mainly because it is based on the output gap and, consequently, on the assessment of 'potential output'. In Figure 7, we use the data from the OECD for the primary cyclically-adjusted deficit.[5] This indicator is netted out of net interests and depends on the elasticity of the public deficit *vis-à-vis* the output gap. The elasticity and the output gap have been computed by the OECD. To compare the different components of public deficit, we present the primary cyclically-adjusted deficit in percent of GDP, whereas the OECD presents it in percent of potential GDP. We also compute the primary cyclical component as a residual between the overall deficit, on the one hand, and the sum of net interests and the primary cyclically-adjusted component on the other hand.

Figure 7 reports the cyclicality of the primary cyclical part of the deficit: the average primary cyclical deficit has been 0.1 percent of GDP since 1987.[6] It is not surprising over a sufficiently long-time span that has witnessed good and bad times, hence periods of high and low economic growth. Nevertheless, Figure 7 also reveals that the largest primary cyclical deficits have rarely exceeded 1 percentage point of GDP. Therefore, on average or on a time-to-time basis, the main culprit for an average large public deficit in France is not the cyclical component, according to OECD data.

We are thus left with two other culprits: the discretionary stance and net interests. The first one is under the responsibility of the present government whereas the second is under the responsibility of past accumulated deficits and past and current long-term interest rates. If one excludes the recession years, the discretionary stance accounts for 0.7 percentage points of GDP. Peaks at 3% and 4% in 1993 and 2009-2010 drive this average at 1.1% of GDP,

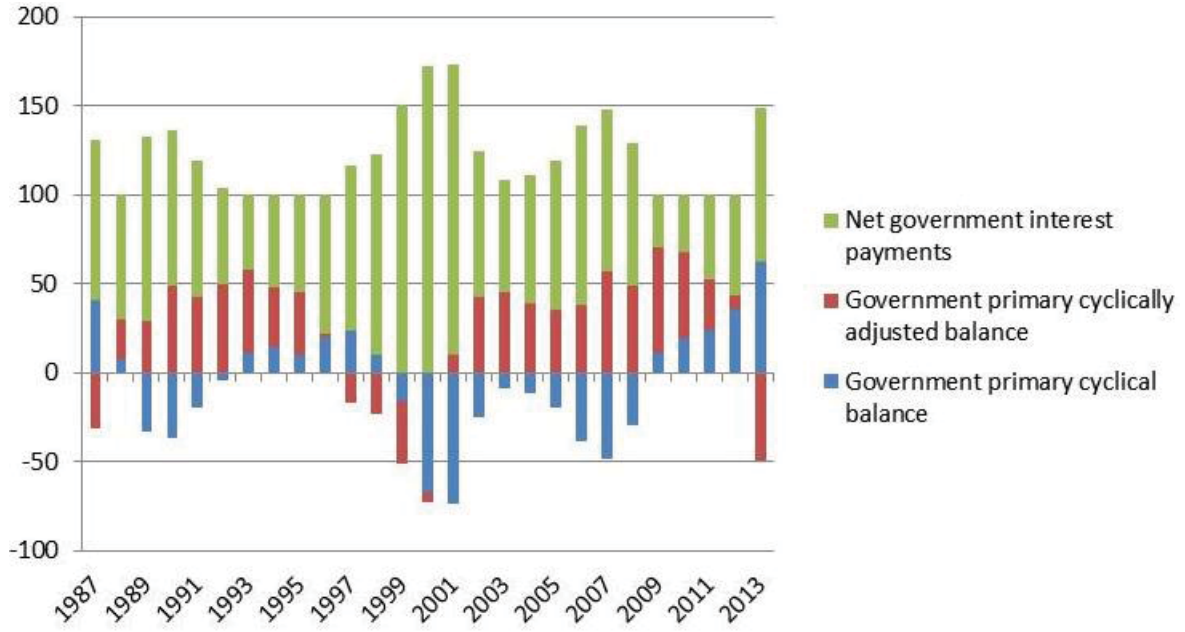
[5] It would be considered a drawback of Figure 8 if one asserted that the OECD underestimated the output gap. If it were true, the cyclical component of the full deficit would also be underestimated whereas the cyclically-adjusted component would be overestimated. Yet, a discussion of the merits of OECD's assessment of the output gap is beyond the scope of this paper.

[6] The average is 0 percent of GDP when recession years are excluded.

for an average overall public deficit at 3.7%. Though this is not a minor contribution to the deficit, the discretionary stance does not explain the major part of the French public deficit.

Figure 8 reports the contributions to the public deficit of the three already mentioned components. It appears clearly that except under recessions, the largest part of the French deficit stems from net interests. In sharp contrast with the remaining components, net interests have been very stable in proportion to GDP since 1987 (see Figure 7).

Figure 8. Contributions to public deficits, in %



Sources: OECD and authors' computations.

Figures 7 and 8 also report that the fiscal adjustment since 2010 has been a pure fiscal contraction in the sense that it has been exclusively related to the discretionary stance, whereas the cyclical component and net interests were growing and making increasing contributions to the deficit. The contribution of the fiscal stance to the deficit was almost nil in 2012 and then will turn negative in 2013 despite the on-going Euro Area sovereign-debt crisis. This pure fiscal contraction has been of an outstanding amount of close to 6 percentage points of GDP between 2010 and 2013.

If no political change in the interpretation of European treaties and laws by French governments does occur, the margins for maneuver to consolidate further French public finances will depend only on net interests; hence on the management of debt issuances, and on the return of economic growth, which would alleviate the deficit and debt's burden.

The next part of this chapter will discuss debt management issues whereas the fifth part will discuss the impact of different fiscal rules on the future path of economic growth in France.

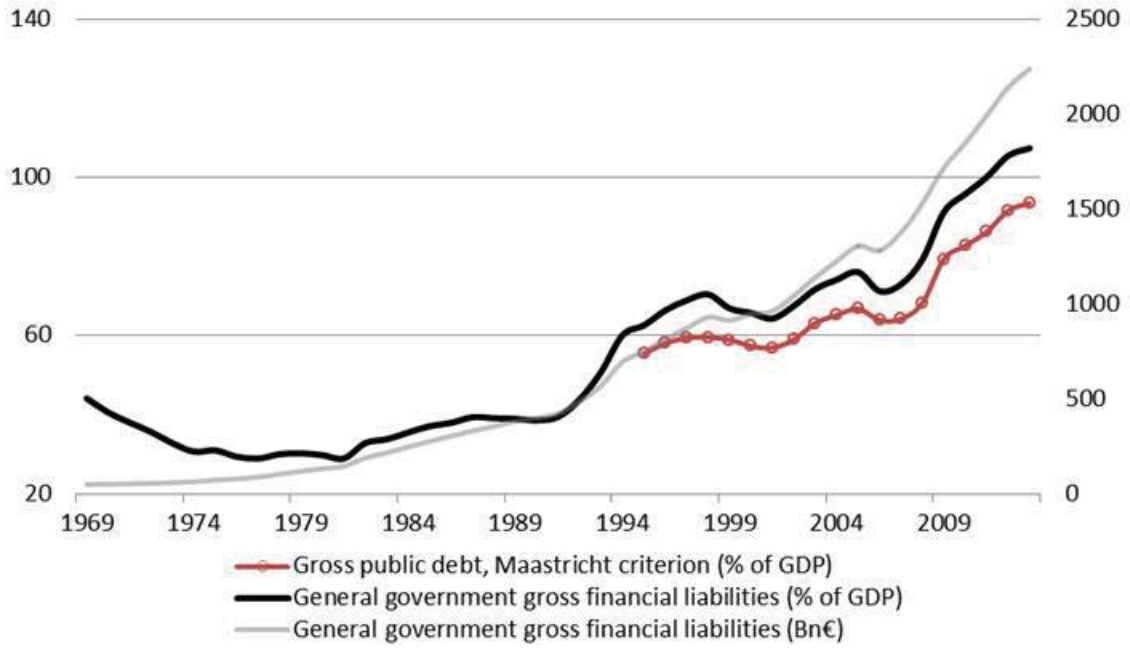
4. The French Government Debt

The different trends in spending and tax receipts that were described in the previous part have had strong consequences on the level, but also on the composition of public debt in France. Public debt was a non-issue in France before the 1990s and ever more so before the 1980s. But since the Maastricht treaty was signed, public debt has become a major political and economic issue.

4.1 Evolution and Composition of Debt

France's government gross debt has increased significantly over the past two decades (Figure 9). In 1993, government debt was 51% of GDP, while in 2013 it was 107% of GDP and 93% of GDP according to the gross public debt Maastricht criterion that consolidates parts of general government (central government, local governments and social security). One can note that the government debt has increased significantly during two periods: first, between 1993 and 1998, French debt went from 51% to 70%, so a rise of 37 percentage points in 5 years; second, between 2007 and 2013, it went from 73% to 107%, so a rise of 47 percentage points in 6 years. While the government budget has not been in surplus since 1974, these two periods share a common characteristic: recession and slow economic growth. Both impacted on cyclical deficits but also on interest charges, hence on debts, because monetary policy, quite certainly in the 1990s, and to a lower extent over the most recent years, has not been sufficiently accommodative to offset the real costs of recessions.

Figure 9. French Gross Government Debt

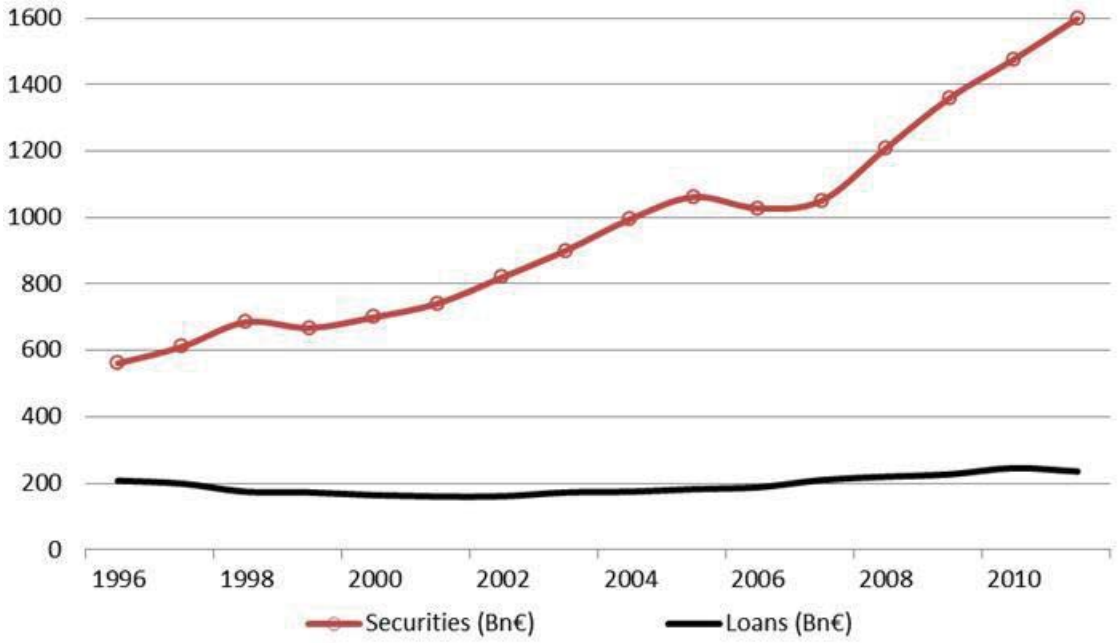


Source: OECD.

The French government debt can be decomposed in two different types of liabilities: long-term securities and short-term loans which both represent more than 85% of the French

government liabilities. It is quite interesting to note that the management of the French debt and its instruments has evolved over the past fifteen years. While in 1996 the amount of securities represented 3 times the amount of loans, the ratio increased substantially to 8 in 2011 with 1600 billion € of securities and 200 billion € of loans. One can interpret this change with the reduction of long-term interest rates over the same period that has encouraged the government to favor long-term securities rather than short-term loans. Moreover, the development and deepening of financial markets during the same period have allowed the issuance of more securities (Figure 10). The management of the French public debt has gone hand in hand with the financialisation of the French economy.

Figure 10. The Nature of the French Government Debt



Source: INSEE.

Financialisation of the French economy has been accompanied by a strong market orientation of banking activities (Table 2), as reported in OFCE (2012). Quite interestingly to our purpose, the raising bond market capitalization has substantially improved liquidity and has made it possible for the French government to seek for better financial conditions.

Table 2. Indicators of financialisation (in % of GDP)

Country	Bank loans to private sector			Total market capitalization			Stock market capitalization			Bond market capitalization		
	1979	2001	2009	1975	2001	2009	1975	2001	2009	1975	2001	2009
France	67	85	113	27	186	242	11	100	124	16	86	118

Sources: Datastream, Eurostat, OFCE (2012).

4.2 French Government Borrowing Requirements

The French government constantly has had borrowing requirements over the past three decades with on average 3.3% of GDP per year of financing needs, hence an average positive public deficit over three decades (see part 1 for a discussion of the deficit composition). As was already pointed out in the previous part, the evolution of these financing needs and, more specifically, the two most impressive increases in financing needs closely match the two recessions that France experienced over the period considered. This descriptive graph suggests that government net lending seems much more correlated to the business cycle than to structural factors and in particular the primary structural balance, which was in surplus between 1997 and 1999.

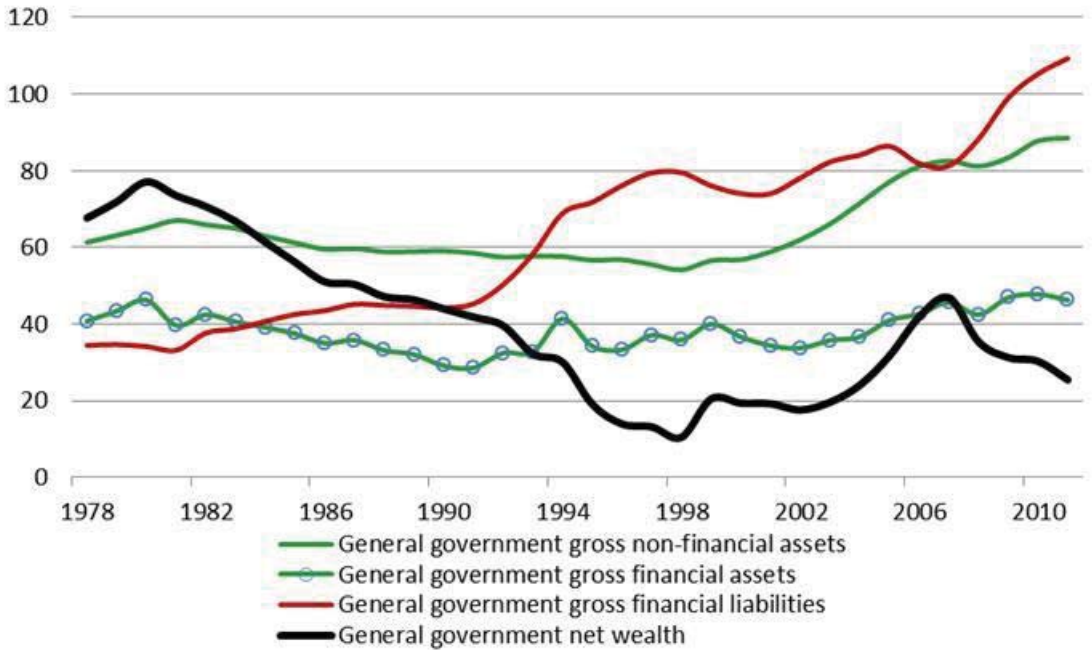
Gross versus Net Debt

The analysis of the evolution and level of sovereign debts is usually exclusively realized at the level of the gross debt, which appears quite irrelevant since the level of gross debt does not give an indication on the use of this debt. If debt has been invested in acquiring assets with high capital gains or with higher returns than the cost of debt, then looking solely at gross debt levels is misleading.

Since the beginning of the 1980s, the general government net wealth has been considerably reduced, from almost 80% of GDP in 1980 to 25% of GDP in 2011 (Figure 11). This trend was mostly explained by the surge of gross liabilities under a stable provision of non-financial assets, at least until 2002 when their value also increased.

Overall, in the case of France, despite the increase in gross debt that we already mentioned, the net wealth position of the government has always been positive since 1978: it means that the sum of the non-financial and financial assets owned by the French government is superior to its liabilities. This positive net wealth of the French government represented 25% of France's GDP in 2011. To reinforce the argument that gross debt levels do not capture adequately the balance sheet position of the French government. One can take the example of the year 1998: the gross debt represented 70% of France's GDP which seems a lot better than the 107% of 2011. However, the net position was only 10% of GDP at this time compared to the 25% of 2011.

Figure 11. French Government Net Wealth, in % of GDP



Sources: OECD and INSEE.

It is certainly important to acknowledge that the general government net wealth nets out liabilities with non-financial assets. The values of these non-financial assets, like roads, water facilities, education building, etc., are certainly difficult to assess (see the contributions by Eisner and Nebhut, 1982; Eisner and Pieper, 1984; Boskin, Robinson and Huber, 1989). As a matter of fact, the flow of revenues that public infrastructures will produce is very uncertain and remains an open issue. Hence, the question of the sustainability of public finances is fettered by the lack of instruments to gauge future streams of revenues and costs stemming from public infrastructures.

For this reason, net public debt is usually used as an intermediate indicator of net government assets/liabilities, between gross debt and general government net wealth. In contrast with the latter, net public debt is gross public debt netted out of financial assets only. Contrary to non-financial assets, values of financial assets are market-related. Nevertheless, prices may include noise when booms or busts on financial markets are under way. Despite its potential drawbacks, net debt gives a more precise picture of the State financial position than the purely liabilities-related gross debt.

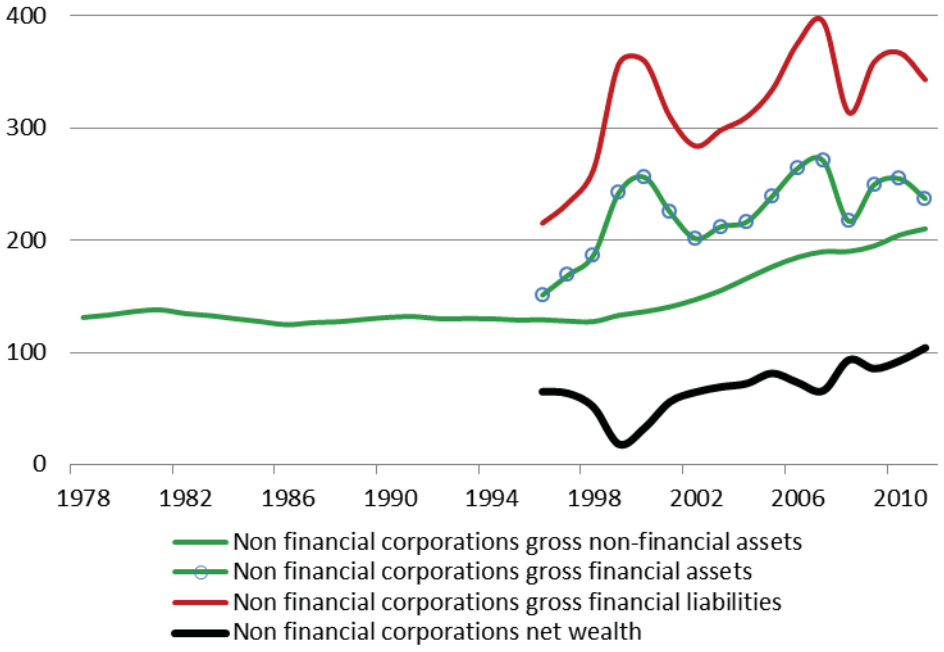
As already mentioned, net public debt data reveal that France had no issue with public debts until the early 1980s. Indeed, net public debt was negative in 1980! However, the 1980s and early 1990s produced a sharp increase in net public debt which went above 40% of GDP in 1995. After a cyclical evolution around this value until 2008, the ratio jumped rapidly above 60% of GDP. Consistently with gross debt data, the steepest rise in the net debt-to-GDP ratio occurred during recessions. Between 1999 and 2006, France's net debt was below the Euro Area average but since then, France has overtaken it.

4.3 Public versus Private Debt

Going back to gross debt data – the European Commission monitors public debts assessed in gross rather than net terms - it is interesting to analyze and compare non-financial corporations' and households' balance sheet expressed in the same manner. Notwithstanding the amounts of private assets, a focus on the sole public debts is misleading: there may be countries with high public debt and low private debt which overall sustainability would not be at stake, and countries with high public and private debts that would need to recourse to external indebtedness, hence producing a potential risk of unsustainability.

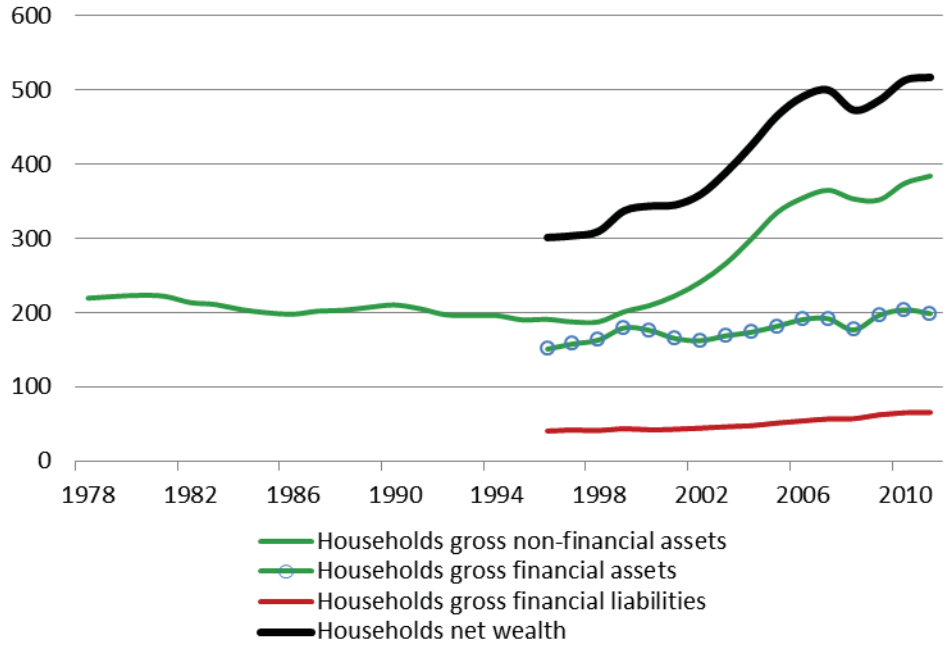
In France, the levels of gross private debt are substantial, notably in comparison with the gross public debt to GDP ratio: the gross debt of French non-financial corporations was 343% of GDP in 2011 while the gross debt of households was 66% of GDP. Neither rating agencies nor European institutions have asked French non-financial corporations or households to reduce their debt levels, although both institutions have made regular pleas in favor of fiscal consolidation to reduce public debt to GDP ratio. Figure 12 shows that the rise in non-financial corporations' gross financial liabilities was very sharp in the mid-1990s and then, during the 2000s until the global financial crisis started. In contrast, households' debts have been very stable in proportion to GDP since 1995 (Figure 13).

Figure 12. Non-Financial Corporations' Net Wealth, in % of GDP



Source: INSEE.

Figure 13. Households' Net Wealth, in % of GDP



Source: INSEE.

In the case of firms and households, one is certainly more used to looking at the assets' side in front of the liabilities' side because they are generally associated with production, investment and consumption. For the governments are also involved in these three activities (production, investment, consumption), it should be standard practice to assess balance sheets through net wealth for all economic agents, be they private or public.

Indeed, the picture of balance sheets of households and firms is no less striking than the government's if one focuses on net wealth rather than on gross debts. The net wealth positions of non-financial corporations and households have been positive since 1995 (first year of available data) and they were equal to 104% of GDP and 517% of GDP respectively in 2011. One major difference between the net wealth of non-financial corporations and households and the one of the French government is their recent evolution: whereas it increased between 2007 and 2011 for firms and households, it decreased for the French government. Figures 12 and 13 report steady increases in the value of non-financial assets since the late 1990s for households and firms; it contrasts with those of the government. Reasons behind this difference in pace may be twofold. First, firms and households may not invest in the same sectors as a government: the former sectors may be more dynamic than sectors dedicated to public services and public infrastructures, hence public goods, in which governments may decide to invest. Second, the privatization process under the various French governments, either left-wing (1997-2002) or right-wing (2002-2007), led to governments' divestment and sale of assets at periods when firms and households were acquiring assets thanks to decreasing interest rates. Since 2007, privatization has been rather scarce but at the same time, governments have not increased their participation in non-financial corporations.

4.4 Government Debt Financing

The growing size of public debts has raised the issue of the rise in interest payments that may burden the French public deficit. The crowding-out effect has been implicit, when it was not explicit, in the analyses of observers. However, with an adequate (or optimal) management of debt, it has been made possible to match the needs of investors and issuers, and also to adapt the maturity of debt to the yield curve, so that nominal rates would be set at a minimum.

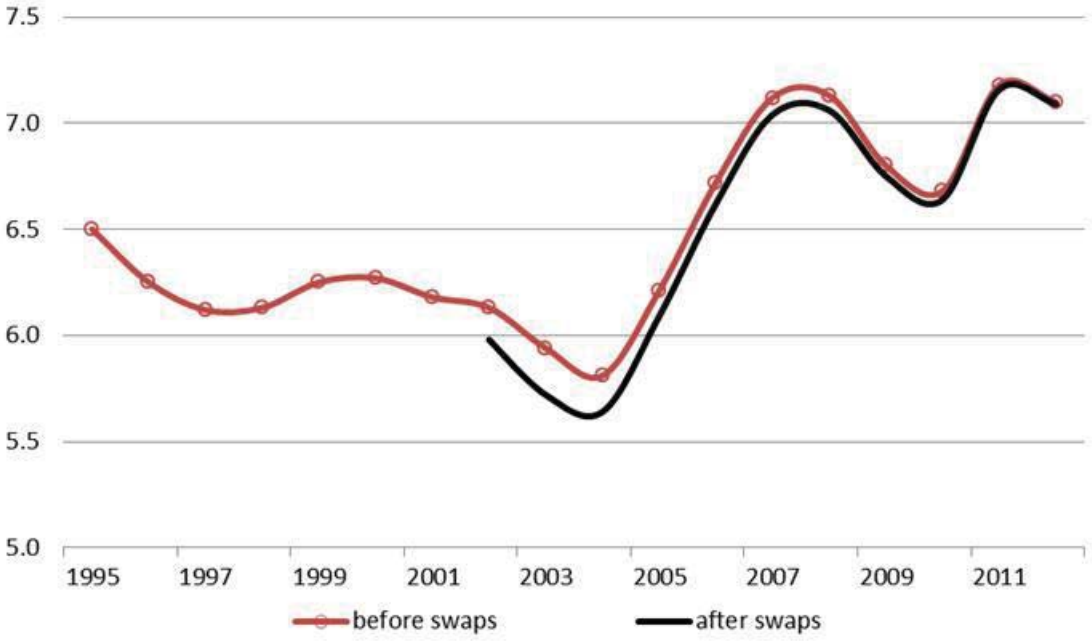
Indeed, in the previous part, we mentioned the relative stability of the French ratio of net interests to GDP. However, despite a small decrease since the mid-1990s, net interests still represented 2.5% of GDP in 2012. Therefore, they limit the scope for fiscal stimulus in the EU where public deficits are capped at 3% of GDP. Nevertheless, the stability of net interest rates (in proportion to GDP) during a period of growing debts opposes the crowding-out effect argument.

The average maturity of the French government debt has been around 6.5 years for the last two decades (see Figure 14). However, one can note on the Figure that while this average maturity had tended to decline until 2003 – to reach a minimum at 5.75 years – it increased sharply over the past ten years and is in 2012 around 7 years. The Agence France Tresor (AFT), created in 1999 and whose mission is to manage the debt and cash of the French State in the best interests of the taxpayer and the best security conditions, regularly issues at all maturities of the yield curve to get the best liquidity and to reduce risks, including the volatility of the debt burden and the refinancing risk. Its portfolio policy has resulted in an increasing average maturity of the debt of the French State. In this respect, France is well positioned in terms of average maturity; it is much longer than the United States (4.3 years) and slightly higher than in Germany (6.6 years); only the United Kingdom has a longer maturity because of the importance of pension funds in this country whose demand for long-term securities is naturally driven by regulation.[7]

The reliance of AFT on more sophisticated financial products, like swaps, has not fundamentally modified the average maturity of public debt. The average maturity was significantly reduced only after these swaps were introduced, hence between 2002 and 2004. In 2012, maturity was similar with or without swaps.

[7] Despite reforms, the French pension system is still dominated by a compulsory pay-as-you-go scheme. The attractiveness of French public debt is circumscribed to foreign pension funds, in contrast with UK public debt.

Figure 14. Average maturity of French debt



Source: Agence France Trésor.

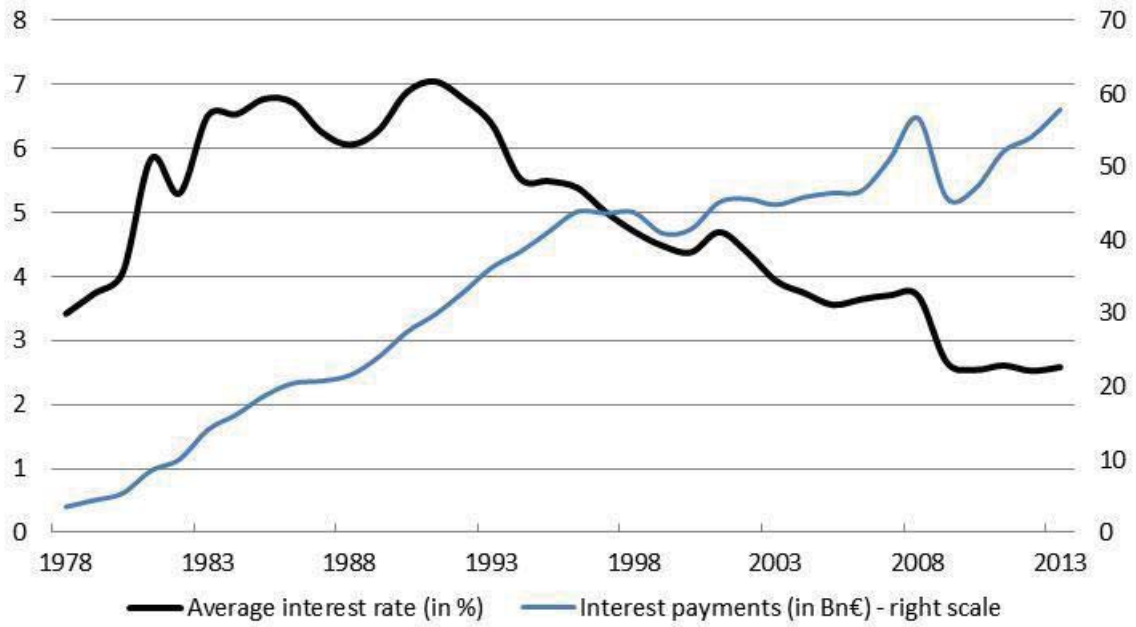
Despite the strong increase of the French government debt over the past 6 years, interest payments have paradoxically made little progress over the same period of time (Figure 15). After a period of increase together with the government debt until the mid-1990s, it remained stable during a decade; it increased again recently but at a smaller pace than the underlying debt.

This apparent paradox is related to the sharp decline in interest rates over the past 20 years – from 7% to 2.5% – and it has helped to moderate the impact of the increasing debt on interest payments. The decline in inflation from the early 1980s was indeed followed by a decline in global interest rates, in an environment where economic agents expected more permanent low inflation. This rate decline was amplified in the case of France, thanks to the disappearance of risk premia following the adoption of the euro. This development has been very supportive to public finances.

To give an idea of the impact of low interest rates on interest payments, we can calculate the interest payments that the French government would have had to pay, had the average interest rate in 1990 been applied to the 2011 debt: interest payments would have equalled 156 billion € against 58 billion € today. This estimate illustrates the room for manoeuver enjoyed by the French government because of these low interest rates. However, one cannot count on a further reduction in interest rates to reduce the debt burden. Indeed, the margins have been exhausted: the long-run interest rates will not remain permanently below the growth rate of the economy once the global financial crisis and its sequel, the European sovereign debt crisis, will be over. The financial crisis, through the monetary easing and the phenomenon of 'flight to quality' that stemmed from the Euro Area sovereign debt crisis, has induced a further decline in interest rates since 2009. A potential risk now is

that due to the relatively high level reached by the French government debt, investors require higher returns. However, this risk has not yet materialized since the crisis has led, at the opposite, to a strong demand for government securities, which appeared safer than private ones. Recent debt issuances in France have been achieved at historically low interest rates.

Figure 15. Average interest rate of French debt



Sources: OECD and INSEE. The average interest rate is computed as the ratio between interest payments and government gross debt for each given year.

The attractiveness of French public debt for investors can be achieved *via* the interest rate, but it can also be *via* the bid-to-offer ratio. From 1999 to 2012, the demand for French public debt has always exceeded its supply, and the bid-to-offer ratio has been 2.85 on average. The same ratio has been 2.55 since November 2009 and the starting point of the sovereign debt crisis, and the 'flight to quality' resumed in 2012 when the bid-to-offer ratio reached 2.71.

These developments on French public deficits and debts have shown that, though both have increased since the global financial crisis, the situation of French public finances is not dramatic. Consequently, our conclusion questions the relevance of adopting and implementing stringent fiscal rules which impact on real economic growth might well be dramatic in the near future.

5. French Debt and Deficits under Different Fiscal Rules

The sovereign debt crisis has challenged some Euro Area countries since the last quarter of 2009. In 2011 and 2012, risks of default and contagion effects to the rest of the area arose and paved the way for European governance reforms. The climax of reform was reached on March 2nd 2012 when 25 of the 27 EU countries (the UK and the Czech Republic stepped down) adopted the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union. This so-called 'Fiscal Compact' complemented the provisions of the 'revised Stability and Growth Pact' of November 16th 2011 with a new fiscal rule: the balanced structural budget rule.

The focus by EU authorities on further limiting deficits and debts, in a context of slow growth, confirms a long-lasting trend in EU governance: public deficit and debt are not to be managed with the objective of smoothing the cycle and reducing unemployment, but have rather *become* an objective. Since the devil is in the details, one counter-argument to our line of reasoning can state that the new balanced-budget rule is expressed as a cyclically-adjusted deficit of 0.5 % of GDP. One may argue that this leaves sufficient margins for maneuver to smooth the cycle. We have a different view. First, in a survey about EU automatic stabilizers, Creel and Saraceno (2009) showed that automatic stabilizers have been weakening since the 1990s and that their effectiveness has also decreased. It means that the smoothing properties of automatic stabilizers have been decreasing, which, Creel and Saraceno (op. cit.) conclude, requires a commitment to discretionary, rather than automatic, fiscal policies. Limiting the cyclically-adjusted component of budget deficit hence goes in the wrong direction. Second, the global crisis had strong negative consequences on EU potential output (see, e.g. DG EcFin, 2009; van Ark, 2010; DG EcFin, 2011), and the use of fiscal instruments *beyond* automatic stabilizers can still be required.

The European renewed emphasis on transforming a policy instrument into a policy objective is rather paradoxical. First, the misbehaviors that emerged in 2009, notably in the management and in the reporting of public finances by the Greek authorities, triggered a discussion that went well beyond the need for increased and more efficient monitoring of public finances. Markets and policy makers have brought into the spotlight countries like Spain and Ireland, where the surge in deficit and debt was not linked to public sector wrong doings, but rather to the need to correct strong imbalances in the private sector. Second, the global crisis that started in 2007 saw in a first phase monetary policy interventions, and then a liquidity trap situation that called for traditional textbook fiscal stimulus packages in most developed and emerging economies. It has been almost unanimously acknowledged that proactive monetary and fiscal policies dampened the global crisis. Hence, policy instruments and policy objectives were clearly separated, and instruments were effective at reaching the objective.

The change in perspective occurred in 2009, when the Greek crisis led to the wave of austerity measures discussed in sections 1 and 2. There, we noted that under the pressure of

EU institutions and of core countries, most Euro Area countries underwent brutal consolidation plans that went beyond the letter of the treaties. We also reported results from iAGS (2012) showing that simply following the letter of the treaty would make the adjustment path significantly less recessionary than the measures currently implemented.

In this section we want to push our argument one step further, and ask the question of whether the current rules (the Fiscal Compact) are fit for purpose. We will draw on results of our previous work that has had the objective of contributing to the debate about EU governance. We deem necessary shifting back the attention to what should be the objective of policy action, growth and the output gap. We thus give two different assessments of the impact of different fiscal rules on the output gap and public finances in France. The first assessment is an empirical one and draws on VARs and counterfactuals. The second is more theoretical and uses a fiscal policy-augmented 'New-Keynesian' framework.

Both assessments contribute to criticizing the new EU fiscal rules that are shown to increase the real costs of fiscal contraction. Therefore, we analyze the recent EU governance reforms, hence the balanced-budget requirement and the debt reduction scenario by one-twentieth of the gap with the 60 percent limit per year (article 4 of the Fiscal Compact). Drawing on these four fiscal rules, we rank them based upon their macroeconomic outcomes.

5.1 An empirical assessment of new and old EU fiscal rules in France[8]

The medium-to-long term performance of European economies will crucially depend on the macroeconomic governance tools put in place by the EU. As the previous section made clear, three fiscal rules have been on the floor, adopted or discussed by EU governments, since 2011: (a) a status quo where public deficits must be maintained below the 3 % of GDP limit (with the objective of balanced deficit over the cycle); (b) an unconditional diminishing rate of public debt towards the 60% of GDP reference value (the distance with respect to this reference value has to decline in the order of one twentieth per year); (c) a balanced structural budget where the (cyclically-adjusted) structural deficit must not exceed 0.5% of GDP. Beyond these three rules, we will also test an alternative reform proposal, which has a long history in economics, that was proposed by the Italian Prime Minister in 2012: a 'golden rule of public finance', whereby public current budget is balanced whereas public investment is financed with debt issuance. These four rules differ on the criteria and on the type of constraints they impose on countries.

It is important to assess the potential impact of these rules on growth and inflation. In a Euro Area where spillovers from one country to the other are so important, through a contagion effect due to budget deficits or a trade effect due to the strong integration between members, a multi-country assessment is required.

We perform a comparison of fiscal rules within a simple simulation exercise in line with Eichengreen and Wyplosz (1998) and Monperrus-Veroni and Saraceno (2005). We start

[8] Section 5.1 draws on Creel, Hubert and Saraceno (2012) where details are available.

from a simple parsimonious reduced-form VAR model that has its theoretical basis in a new Keynesian aggregate demand/Phillips curve: dependent variables are the output gap and inflation, while domestic public deficits and debts are the exogenous explanatory variables. The estimation results are the basis for a counterfactual assessment of the effect of alternative budgetary rules. Such an exercise has shortcomings acknowledged by the authors themselves. The main one is that it represents a typical Lucas' Critique victim: had the rules been applied in the past, agents would have embedded their consequences in their behavior, which would have then been different from the current one, provided their expectations are forward-looking. Actual data hence have a limited explanatory power when trying to quantify the effects of alternative policies. The paper by Eichengreen and Wyplosz (1998), nevertheless, retained a remarkable interest because it gave a measure of the magnitude of costs and benefits of the Pact; furthermore, in our extension. It has the advantage of allowing a meaningful and consistent comparison of different institutional arrangements.

Eichengreen and Wyplosz (1998) followed a three-step procedure: (1) they estimated the reduced form of a two-equation VAR with output gap and inflation changes as endogenous variables. Among the exogenous variables, they introduced the fiscal impulse (that they define as the change in structural deficit) and a dummy variable to capture recessions. (2) They used the estimated coefficients and an artificial series for the fiscal impulse (derived by capping total deficit at 3% for each period in which it surpassed the threshold) to build the simulated series for output gap and inflation. (3) The simulated output gap series was finally compared to the actual one, to compute the difference in output.

We have used a similar procedure to rank the different fiscal rules that we discuss. The first difference with the other authors is that we undertake an out-of-sample estimation, projecting the series of output gap, inflation and debt starting from 2010 onwards (for 2 decades). The second difference is that we use a loss function – a metric – to rank the performance of the various rules. The third difference is that we introduce more fiscal rules.

Differently from Eichengreen and Wyplosz, our VAR also includes the change in public debt (expressed in percent of GDP), and dummies meant to capture episodes of extreme changes in the output gap. Data come from the OECD annual database and the sample is 1972-2008.

5.1.1 Empirical Results

Drawing on the VAR estimate, we simulate the output gap and inflation paths corresponding to artificial time series of debt and deficit. Artificial series incorporate the different EU fiscal rules: a cap at 3% of GDP for the fiscal deficit (Maastricht rule), a cap at 0.5% of GDP for the cyclically-adjusted deficit (Fiscal compact 1), the debt rule (Fiscal compact 2), and a golden rule of public finance whereby tax receipts cover current expenditures.

The artificial fiscal impulse series used in the counterfactual experiment are the simulated change in the cyclically adjusted deficit corresponding to the fiscal adjustment paths consistent with the different rules to be tested. Thus, for rules constraining nominal balances, such as the Maastricht rule, the nominal golden rule and the diminishing debt rule, we compute the corresponding change in cyclically adjusted terms. We start from the hypothesis that a change in the fiscal adjustment path in *t-1* influences growth and the output gap in *t* and that this change in the output gap has only an effect on the cyclical component of the budget balance without affecting its structural component in the short term. We then calculate the new nominal budget balance in *t* adding to the original, unchanged structural budget balance the new cyclical component. The new cyclical component in *t* is obtained by applying the government budget elasticity to cyclical variations in economic activity calculated by the OECD to the simulated output gap in *t-1*, consistent with the fiscal adjustment strategy implemented. Then, the nominal budget balance, thus obtained, is constrained according to the rule and adjusted for the cycle.

We compare the effects on the output gap and the inflation rate of these different fiscal trajectories, each consistent with one of the four rules. We assume that each of the four rules was applied from 2010 onwards, taking as given the 2009 levels of French output gap and inflation, and we further assume that no other major shock intervenes. In other words, we are analyzing an 'everything else equal' scenario.

To rank the different fiscal rules, we use as a very simple metric a quadratic loss function of the form:

$$L = \frac{1}{2}\left(y - \bar{y}\right)^2 + \frac{1}{2}\Delta\pi^2$$

where $\left(y - \bar{y}\right)$ is the output gap, and $\Delta\pi$ the inflation rate in difference. The assumption here is that French authorities wish to minimize deviations from potential output and variations of inflation. This loss function assumes that the weights put on each objective are equal. The loss function, though simple, is very common in the macroeconomic literature dedicated to optimal monetary and / or fiscal policies.

We start from the *status quo*, the rule establishing that deficit should not exceed the 3% limit set in the Maastricht treaty. The debt to GDP ratio stabilizes largely above 100% of GDP, with the structural deficit converging towards 3% of GDP after the output gap comes close to 0. The output gap starts from large negative values and is gradually reduced; it is even slightly positive after 6 years.

We carried out the same experiment by imposing the new Fiscal Compact rule on the structural deficit (Fiscal Compact 1), i.e. capping the structural deficit at 0.5% of GDP. The most notable result is the impact of this new rule on public debt. The debt-to-GDP ratio would decrease by 50 percentage points of GDP, 20 years after the adoption of the rule. It is noteworthy that the Fiscal Compact 1 would not have a different impact on the output gap

than the status quo. The expansionary impact of debt reduction has been an outcome of the VAR estimations. It is even more apparent on the simulations based upon the Fiscal Compact 2 – debt reduction rule.

The proposal to reduce each year the debt to GDP ratio by 5% of the difference with the 60% reference level was tested next and, in comparison with the Maastricht scenario or Fiscal Compact 1, it gives a radically different picture. The reduction of the debt level requires initially a very large structural surplus which may undoubtedly be socially unbearable. It remains that despite this sharp fiscal consolidation, but because of the large and sustained decrease in public debt, output gaps would recover slightly faster than with other SGP rules (status quo and fiscal compact 1). As a consequence of fast recovery, the debt rule is always more inflationary than the other rules.

Finally, we tested a particular version of the golden rule, i.e. assuming that the structural deficit is balanced net of two components: a deficit of 1% per year to finance public investment and debt depreciation caused by inflation (for all the experiments we assumed an interest rate of 2%). Results show that such a rule would reduce the ratio of debt to GDP (albeit at a slower pace than the debt rule), while being less recessionary than the other rules in the short run and closer to the potential output in the longer run. It is worth noticing that simulations do not take into account the long run effects on productivity (and hence on potential output) of an increase of the stock of public capital (for a survey of the literature, see Romp and De Haan, 2007; and for a recent estimation in EU countries, see Creel and Poilon, 2008).[9] The present estimates may be considered as a lower bound and the real impact of the golden rule of public finance in the framework is thus certainly under-estimated.

The Fiscal Compact, under its structural deficit cap or its debt-reduction scheme, leads to the highest output gap in the long run; hence it is more deflationary in the short run and more inflationary in the long run than the status quo and the golden rule. Debt reduction under the provisions of the Fiscal Compact increases, both inflation (in difference) and the output gap according to VAR estimated coefficients. The property of the Fiscal Compact to stabilize the economy is weaker than the other two rules in the long run, according to the values of the loss functions.

The cumulative values of loss functions according to the adopted fiscal rule give an assessment of the stabilization property of these rules from the short to the long run. The lowest value is achieved when the golden rule is adopted, and the 'second-best' is the Maastricht fiscal rule. Quite interestingly, the two fiscal rules embedded in the Fiscal

[9] Creel and Poilon (2008) address the issue of whether and by how much public investment or public capital can increase GDP. In comparison with the literature, they apply different methodologies to answer these questions. A vector autoregressive (VAR) model (for France, Italy, Germany, the UK and the USA), a panel of 6 European countries (Austria, Belgium, France, Germany, Italy and the Netherlands) and a regional panel (French regions) are estimated. Public investment is a significant determinant of output; this is also true for public capital but to a lesser extent than public investment.

Compact perform substantially worse than the rule they complemented (the Maastricht rule): the performances of Fiscal Compact 1 and 2 are worsened respectively by 114% and 68%. The improvements in the stabilization property of the golden rule in comparison with the Maastricht rule are 5%.

Finally, we checked the robustness of fiscal rules' ranking to the initial output gap levels. Creel, Heyer and Plane (2011) and DeLong and Summers (2012) argue that fiscal contractions prove more recessionary as they take place when the output gap is already negative. The counterfactual exercise that we perform highlights this argument: the initial output gap is strongly negative and it paves the way for deeper recessions and deflations once strict fiscal rules are implemented. To escape a potential bias against those rules, which are the most severe to implement, like the Fiscal Compact, because of initial negative output gaps, we reproduce the counterfactual exercise setting at 0 or 2% the initial output gaps.[10] The ranking is confirmed in the long run: the loss function is at its lowest if the golden rule is implemented. Results are a bit different with cumulative values of the loss function. The lowest cumulative value is obtained with the status quo, and the golden rule is a 'second-best'. If the initial output gap of France is set at 0, the net gain of the status quo *vis-à-vis* the golden rule is 1.7%; if it is set at 2%, the net gain is 16%.

5.2 A theoretical assessment of new and old EU fiscal rules in France[11]

We simulated the macroeconomic effects of the adoption of EU fiscal rules in a structural small scale New-Keynesian model that we augmented with a public finance block and a yield curve embedding risk premia.

Medium or large scale New-Keynesian models have been used to assess the impact of fiscal policy on real GDP and inflation rates. Coenen et al. (2012) review the fiscal properties of nine dynamic stochastic general equilibrium (DSGE) models in which Keynesian features like price and wage rigidities are introduced. Most models use rule-of-thumb fiscal rules by which taxes respond to deficits or debts (as in the seminal specification of Barro, 1986). Hence, public finance sustainability is always met. In this study and in contrast with these models, we specify the fiscal rules which governments have to abide by.

While in a number of occasions fiscal rules have not been respected, we assume the French government to follow the fiscal rules, which have been decided at the EU level. We investigate the real consequences of sticking to the rules. We assess these consequences under a specific assumption regarding the initial levels of public deficits and debts. We assume that initial deficits and debts are at their current level, i.e. above their so-called steady-state values and we evaluate the effect of fiscal consolidation under the regimes corresponding to each fiscal rule. Contrary to DSGE models, we start the simulations out-of-equilibrium: the economy is not supposed to start at steady-state.

[10] The initial inflation rate (in difference) is also set to zero per cent.
[11] Section 5.2 draws on Creel, Hubert and Saraceno (2013) where full details are available.

We simulate the effect of the rules on the level and variability of the output gap, inflation rate and structural deficit, and the impact on the level of public debt. This is done in a framework in which on the one hand, the evolution of deficit is countercyclical (which is a new specification in a DSGE-like model), but on the other hand, excessive debt feeds back into the economy through increasing risk premia. Finally, we simulate the different rules over a 20-year horizon, consistently with the target of the one twentieth debt-reduction rule.

The rules we simulate are (a) the Fiscal Compact; (b) the 3% total deficit cap (status quo). We also evaluate the effect of (c) adopting an investment rule or golden rule of public finances. The simulations are carried out starting from a structural New-Keynesian model, where the IS and Phillips curves have hybrid specifications with backward and forward expectation terms. Moreover, our specification also takes into account the nonlinearity of the risk premium and the zero lower bound.

The macroeconomic framework is partly biased against the use of an investment rule, because we rule out the endogeneity of potential output, which could be positively affected by public investment. On the opposite, the investigation is partly biased in favor of the Fiscal Compact because we only simulate the less restrictive rule among the two embedded in the Fiscal Compact.

Results are manifold. First, the adoption of rules produces a short-run recession. Second, recession fosters deflation. Although we do not model deflation differently from inflation in this framework, the former is difficult to reverse in presence of a binding fiscal constraint and of a zero lower bound for the interest rate (Woodford, 2001). Third, the investment rule performs better than the other two rules: recessions are shorter and milder; the average loss of output over a 20-year horizon is smaller. Fourth, this result is strongly robust to changes in parameters' values.

The economy starts from 2011 levels of deficit and debt, and is tracked over 20 years. We focus on fiscal consolidation abstracting from the *initial* size of the output gap and inflation which, as a consequence, in the simulations are set at their steady-state values (0 for the output gap and the 2% central bank target for inflation).[12] Initial debt and deficit are 2011 OECD figures. The public debt to GDP ratio was equal to 86 % of GDP, whereas the structural (or cyclically-adjusted) primary deficit was equal to 1.45 % of GDP. France is a large country; hence, by assumption, the fiscal multiplier is equal to 0.8.

The French economy starts outside the steady state equilibrium to capture the effects of a fiscal consolidation. The initial impulse stems from how fiscal rules applied in period one constrain the primary structural deficit which impacts the economy. In the case

[12] If Creel, Hubert and Saraceno (2013) had begun with the current values of the (negative) output gap and inflation, the initial drop of output would have been larger, and the interest rate would have hit the zero lower bound earlier.

of the status quo, the initial impulse brings total deficit back to 3% of GDP at period one when the rule is set up. All the rules yield long-run convergence of output gap, inflation, and public finance variables, towards their steady state levels. Furthermore, the debt ratio steadily decreases. All rules produce deep recession in the short run.

The Fiscal Compact yields the larger initial drop of output, which causes deflation in the medium run. The status quo's output drop is larger than the one of the investment rule, whereas inflation dynamics are quite similar for these two rules. On the other hand, the long run reduction of debt is more substantial with the Fiscal Compact than for the other rules. The central bank interest rate drops below two percent, and as a consequence interest payments are lower than in the other rules. This yields faster debt reduction in the medium to long run.

We computed the average of the discounted variables of interest (assuming a discount rate of 5%). The average loss of output is lower in the case of the investment rule. In addition, the investment rule is associated with lower output variability. It can most probably be attributed to the lesser recessionary impact in the early phase of the consolidation process. In all cases, the Fiscal Compact fares worse than the other rules.

The investment rule yields a lower inflation gap to its target on average, and the status quo exhibits lower variability. As expected, the Fiscal Compact yields substantially lower debt levels at $t = 20$.

Setting aside the investment rule, which is currently not an option in the policy debate, the status quo performs considerably better than the 5% debt reduction rule in terms of macroeconomic performance.

The model yields the unequivocal result that implementing the investment rule would minimize the average loss of output, and would also prove less deflationary than the EU fiscal rules. Among these, the status quo is largely to be preferred if we use the output gap as a metrics, while the debt-reduction rule is less inflationary and yields faster debt reduction. Relatively larger structural deficits are not necessarily inconsistent with output stabilization and public finances sustainability. Because of depressed growth, debt ratios may actually decrease less than actually planned during fiscal consolidation.

6. Summary and Conclusions

We assessed the premise of the argument according to which France has a public finances sustainability issue. We reported the results of iAGS (2012), showing that most European countries, like France, are carrying on fiscal consolidation that goes well beyond the requirements of the letter of the treaties. This effort can only be explained by the fear of unsustainable fiscal projections. Therefore, after giving some context in terms of

international comparison of public finances' aggregates, we traced the evolution and composition of French government revenues and spending since the 1970s. We looked at the structure of public debt (composition, average maturity, interest rates). Our conclusion is that there is no serious justification to worry about sustainability, even if French public finances can certainly be improved in terms of fairness and efficiency. The management of public debt has been successful if one looks at the long-term interest rate on public bonds or at the gap between demand and supply for bonds. Interest rates have been low and demand has remained strong despite growing indebtedness. We showed, with two macroeconomic models that the Fiscal Compact would impose a real cost on the French economy that other fiscal rules, equally sustainable in the long run, would not impose.

Our analysis allows drawing some policy recommendations for the French government. First, it is important to deviate from the Fiscal compact and to apply a less restrictive fiscal stance. In spite of 'excessive' deficits, a more gradual fiscal consolidation would still be compatible with the Treaties. In the longer run, a fiscal rule smarter than the Fiscal compact, like a golden rule, would be beneficial to macro-economic stability and it would promote an increase in public capital and future potential output. Second, regarding the composition of deficits, it is important to raise the basis for the income tax and to limit the number of exemptions, so that a more progressive and fairer tax system for households can be put in place. This reform would improve the efficiency of the tax system in that it would reduce inequality. Otherwise, growing inequality in France may produce social unrest and economic instability.

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