



European
Commission

ISSN 2443-8022 (online)

The Economic Effects of a Tax Shift from Direct to Indirect Taxation in France

Francisco de Castro Fernández,
Marion Perelle and Romanos Priftis

DISCUSSION PAPER 077 | MARS 2018

EUROPEAN ECONOMY



Economic and
Financial Affairs

European Economy Discussion Papers are written by the staff of the European Commission's Directorate-General for Economic and Financial Affairs, or by experts working in association with them, to inform discussion on economic policy and to stimulate debate.

The views expressed in this document are solely those of the author(s) and do not necessarily represent the official views of the European Commission.

Authorised for publication by Carlos Martínez Mongay, Director for Economies of the Member States II.

LEGAL NOTICE

Neither the European Commission nor any person acting on behalf of the European Commission is responsible for the use that might be made of the information contained in this publication.

This paper exists in English only and can be downloaded from https://ec.europa.eu/info/publications/economic-and-financial-affairs-publications_en.

Luxembourg: Publications Office of the European Union, 2018

PDF ISBN 978-92-79-77414-0 ISSN 2443-8022 doi:10.2765/610397 KC-BD-18-004-EN-N

© European Union, 2018

Non-commercial reproduction is authorised provided the source is acknowledged. For any use or reproduction of material that is not under the EU copyright, permission must be sought directly from the copyright holders.

The Economic Effects of a Tax Shift from Direct to Indirect Taxation in France

Francisco de Castro Fernández, Marion Perelle, Romanos Priftis

Abstract

This paper uses the European Commission's DSGE model QUEST to investigate the impact of alternative tax reforms shifting the tax burden away from labour or corporates, making the French tax system more growth friendly. These experiments consist in raising VAT and, simultaneously reducing either social security contributions borne by employers or corporate income taxes. These tax reforms overall entail positive and permanent effects on GDP and price competitiveness. Scenarios that imply cuts in social contributions borne by employers bring about more positive effects on employment, the trade balance and the general government deficit. By contrast, while lowering corporate taxes also gives rise to a positive GDP response, external price competitiveness and private investment, they negatively affect employment, the trade balance and the general government deficit.

JEL Classification: H30, E62, H20, H22.

Keywords: Tax-shift, tax incidence, DSGE model.

Acknowledgements: We would like to thank Matthias Burgert for his work at earlier stages of this project. We are also thankful to Carlos Martínez Mongay, Martin Hallet and Jan in ' Veld for valuable comments and suggestions, as well as our referees Caterina Astarita and Matteo Salto.

Contact: Francisco de Castro Fernández, European Commission, Directorate-General for Economic and Financial Affairs, francisco.de-castro@ec.europa.eu.

CONTENTS

- 1. Introduction3
- 2. Literature review 4
- 3. Why a tax shift in france5
- 4. Options for a tax-shift in France7
 - 4.1. VAT increase offset by a reduction in social contributions (fiscal devaluation) 8
 - 4.2. VAT increase offset by a reduction in corporate taxes..... 10
 - 4.3. VAT increase offset by a mixed option..... 12
- 5. Concluding remarks..... 14

LIST OF GRAPHS

- 1. Total taxes on companies in selected Member States in 2015.....6
- 2. Taxes on consumption in selected Member States in 2014 7
- 3. Responses to an increase in VAT matched by a reduction in social contributions.....9
- 4. Responses to an increase in VAT matched by a reduction in the corporate income tax 11
- 5. Responses to an increase in VAT matched by a reduction in social security contributions and the corporate income tax and an increase in transfers..... 13

REFERENCES

1. INTRODUCTION

The public sector in France is the largest in the EU. Public expenditure represented 56.4% of GDP in 2016, almost 10 pps. higher than the EU average. Actually, public expenditure has always been above 50% of GDP since the eighties, but rose by around 4 pps. of GDP after the outbreak of the economic and financial crisis in 2008. Regardless of temporary changes in its relative position, such a high level of public expenditure has been one of the defining features of French public finances and one of their main challenges.

Such a high level of public expenditure calls for a very high tax burden that weighs heavily on France's potential growth. The tax burden reached 47.5% in 2016, also the highest in the EU, thereby levying heavy duties on production factors. Taxes on labour have fallen significantly, especially for lower wages, since 2012 due to the introduction of the CICE (Credit d'Impôt pour la Compétitivité et l'Emploi) and the Responsibility and Solidarity Pact (RSP) (see Section 2). Nevertheless, taxes on labour amounted to 23.9% of GDP in 2015, which implied an implicit tax on labour at 41.3% (the fifth highest in the EU). In turn, taxes on capital represented 10.8% of GDP (the second highest in the EU), with an implicit tax rate on capital at 52.7% that represents an increase of some 16 pps. since 2003.

However, when compared to other EU economies taxes on consumption are relatively low. In 2015 they amounted to 11.2% of GDP, placing France in the twentieth place in the EU. This is mainly due to widespread recourse to reduced VAT rates and VAT exemptions, which represent an annual cost of almost EUR 50 billion (2.3% of GDP) (CASE, 2016). While reduced rates stem from equity considerations, under certain conditions they may introduce inefficiencies in the tax system.

Moreover, the prevailing tax system in France is highly complex (see, for instance, Taly, 2016). For instance, in 2014, the general inspection of finances (*Inspection Générale des Finances*) identified more than one hundred inefficient taxes, which had no or only a low yield. Accordingly, the French tax system is characterised by its heavy tax burden, a high complexity and an acute bias towards production factors. This paper focuses in this last aspect.

It has been argued that the excessive reliance on taxes on production factors, jointly with its complexity, make the French tax system unfriendly to growth (European Commission, 2016, 2017a). Therefore, the purpose of this paper is to present alternative tax-shift scenarios, aimed at making the French tax system more growth friendly, in order to assess their potential economic impact, especially on GDP and employment. The simulations are undertaken with the European Commission's DSGE model QUEST III. The experiment consists in raising VAT and, simultaneously reducing either social security contributions borne by employers or corporate income taxes. We also aim to illustrate the different channels through which these reforms can affect the main macroeconomic variables. This aspect is, in our view, of the utmost importance as the responses of variables such as employment, the trade balance or the general government deficit can be very different and accordingly can condition the effectiveness of any hypothetical tax-shift policy initiative. The simulations show that the expected macroeconomic impact stemming from such reforms is positive but moderate.

The rest of the paper is organised as follows: section 2 offers a brief overview of the main theoretical predictions and empirical conclusions in the relevant literature; section 3 presents the arguments put forward in favour of a tax-shift away from labour or corporate profits in France; section 4 presents a set of simulations to illustrate the macroeconomic effects following the implementation of alternative tax-shift options; finally, section 5 concludes.

2. LITERATURE REVIEW

In classical growth models the equilibrium level of output per capita depends on the saving rate, the population growth rate, the economic depreciation rate of capital and an exogenous technical progress that captures the increase in productivity over time. However, out of these variables, only is the saving rate likely to be affected by fiscal policy measures. In these models there is an optimal saving rate that maximises consumption in the steady state.

Endogenous growth models (see, for instance Romer, 1986) are however more appropriate to assess how tax policies affect growth. Insofar as taxation can affect the relative levels of production factors, it can significantly affect growth. Specifically, taxes on labour (including social security contributions) may affect labour demand, labour participation and hours worked and investment in human capital. In turn, taxes on corporate profits impact directly the cost of capital and hence investment decisions.

More generally, in terms of economic efficiency, proportional taxes levied on more inelastic tax bases such as consumption, excise duties or environmental taxes generate lower deadweight losses. Therefore, reorienting the tax system to these lower-elasticity taxes may allow for tax rate reductions on production factors, thereby improving overall efficiency and boosting growth. Moreover, broadening tax bases would also help create some margin to decrease tax rates and enhance efficiency.

Most empirical studies are in line with the dominant predictions from the theoretical literature. Kneller et al. (1999), with a panel dataset for 22 OECD countries over the period 1970–95, conclude that distortionary taxes reduce growth, whilst non-distortionary taxation barely has any impact. However, they only find modest effects as reducing distortionary taxes by 1% of GDP can increase the growth rate between 0.1% and 0.2% per year. Myles (2009) states that "distortive taxes" (personal income tax and corporate income tax) weigh on growth. In a similar fashion, Arnold (2008) finds that corporate and personal income taxes have strongly negative effects on growth, whereas the share of consumption taxes and taxes on immovable property have the opposite effect. Acosta-Ormaechea and Yoo (2012) conclude that for high- and medium-income countries property and consumption taxes are less detrimental to growth than income taxes, whereas personal income taxes and social security contributions (SSC) are more harmful than corporate incomes taxes. However, Xing (2012) does not find any significant difference between personal and corporate income taxes in terms of their growth friendliness. In turn, Pestel and Sommer (2013) also observe a positive effect on employment from an increase in VAT offset by a decrease in the personal income tax in Germany. However, such a shift has a regressive impact on household budgets. Finally, Arachi, Bucci and Casarico (2015) find a positive and significant short-term impact from shifting taxation to consumption with a panel including 15 OECD countries.¹

Despite mixed evidence, the empirical literature seems to conclude that corporate, capital and labour taxes are the most detrimental for growth, whereas consumption and recurrent property taxes are the least damaging.

There are several QUEST model-based analyses discussing budgetary-neutral tax reforms and their implications for macroeconomic aggregates from both an efficiency and a distributional perspective. For example, Varga and in 't Veld (2014) employ the Commission's QUEST model to assess the potential impact of structural reforms in EU Member States. Among the several policy options considered, they include a shift in the burden of taxation from labour income to consumption in a budgetary-neutral way. In this setting, the study shows that by reducing total distortions on labour decisions, labour income becomes more attractive, which can boost employment and GDP permanently. Burgert and Roeger (2014) in turn show that a tax shift from labour to consumption has sizeable positive and permanent GDP effects and redistributes real consumption income from capital

¹ See also Mathé et al. (2015) for a summary of recent tax-shift episodes in the EU.

owners to wage earners. Vogel (2015) uses a small open economy DSGE model to compare scenarios of fiscal and nominal exchange rate devaluations and investigate their impact on economic activity and the current account. He finds that a tax shift from labour (10pp SSC reduction) to consumption (7pp VAT increase) implies a very limited degree of output stabilisation compared to an exchange rate devaluation or an export subsidy-import tax combination, but also positive employment effects in the long run deriving from an implied tax shift in the tax burden from labour to all kinds of income.²

3. WHY A TAX SHIFT IN FRANCE

Taxes in France weigh significantly on production factors, especially on labour. Specifically, taxes on labour remain very high despite having fallen significantly, especially for lower wages, since 2012 due to the introduction of the CICE (*Credit d'Impôt pour la Compétitivité et l'Emploi*) and the Responsibility and Solidarity Pact (RSP). Both contributed to reducing the tax wedge by around 1 ppt. at the average wage and by more than 3 pps. for workers earning 50% of the average wage between 2012 and 2015. However, despite this reduction, taxes on labour amounted to 23.9% of GDP in 2015, which implied an implicit tax on labour at 41.3% (the fifth highest in the EU). In turn, the tax wedge amounted to 48.7% for workers at the average wage, compared to 40.7% in the EU as a whole.³ This is partly explained by the fact that social security contributions as a share of total labour costs borne by the employers, at 13.3% of GDP, are the highest in the EU.⁴ This is due to the fact that the social security system in France is mostly financed through employers' contributions, which is only partially the case in other countries (Graph 1). Such a high tax wedge can represent an obstacle for a better functioning of the labour market and hamper a faster job creation.

In turn, taxes on companies are also high in relative terms. At 38.4%, the effective average corporate tax rate in France was the highest in the EU in 2016 (ZEW, 2016). In spite of the high nominal rate, actual revenues as a percentage of GDP are relatively reduced because of generous tax credits and relatively low profit margins. Other taxes on production⁵ are also particularly high. They stood at 3.1% of GDP in 2015, above Italy (2.0%), Spain (1.1%) or Germany (0.4%). These taxes are particularly distortive because they are weakly linked to the economic performance of the firm but affect profit margins directly. As a matter of fact, these taxes have continued to increase since 2011, in spite of the phase-out of part of the turnover tax (*Contribution Sociale de Solidarité des Sociétés*, commonly known as C3S). In particular, local-level taxes account for roughly two thirds of such taxes and its share on GDP has increased since the reform of the local government taxation. Overall, the high level of taxes weighing on companies represents an obstacle to private investment and hampers companies' growth. They contribute strongly to increasing corporate capital costs in France, which at 7.8% are the highest in the EU and have remained broadly constant since 2000.

Likewise, taxes on capital in France are high compared to other Member States. They amounted to 10.8% of GDP in 2015 (the second highest in the EU), compared to around 8% on average for the euro area. The implicit tax rate on capital stood at 52.7% in 2015, which represents an increase by some 16 pps. since 2003. Not only are capital taxes high, but also little conducive to growth in that the prevailing capital taxation system favours investment in low-risk products like housing and deposits

² A thorough survey of the mechanisms of fiscal devaluations (tax shift from labour to consumption) and the mechanisms behind it can be found in Koske (2013). The paper discusses short term gains of the tax shift and its robustness to aspects such the degree of accommodation of monetary, the openness of the economy, the sensitivity of exports and imports to price changes, or the rigidity of exchange rates.

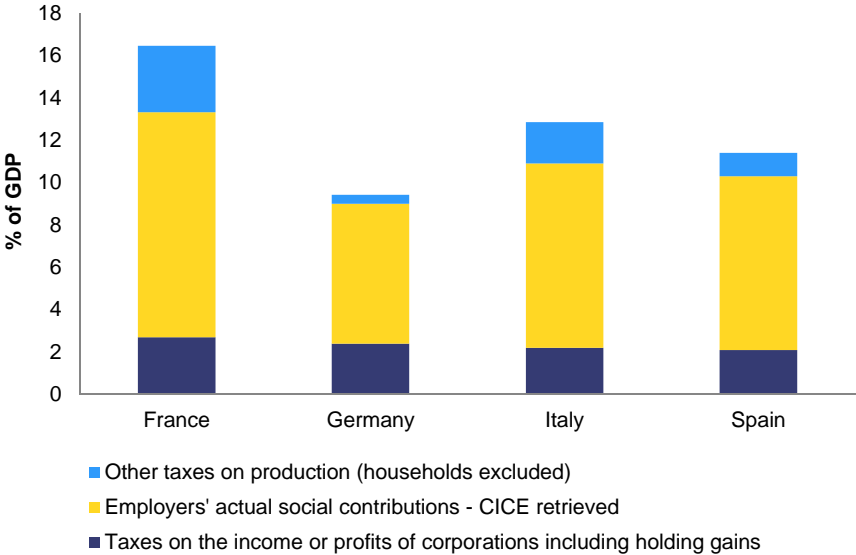
³ See European Commission (2017a).

⁴ See European Commission (2017b).

⁵ These taxes are levied on companies as a result of their activities of production, independently of their production or sales. These mainly include the payroll tax, compensatory payments related to transport, the territorial economic contribution (which replaces the professional tax since 2010), taxes on land and buildings and the social contribution of solidarity of companies (C3S).

over riskier assets and securities. While life insurance products and the implicit rents on the main immovable property enjoy an overly favourable treatment, capital gains on securities are taxed according to the progressive personal income tax regime. Moreover, specific tax regimes such as the full exemption of savings products, the deductibility of interest from the corporate income tax bases or the capital gain tax create a relative distortion between fixed-income instruments (and especially deposits) and shares. Such distortions negatively affect growth, investment and financial stability.

Graph 1: Total taxes on companies in selected Member States in 2015



Source: National Tax List 2016 and AMECO

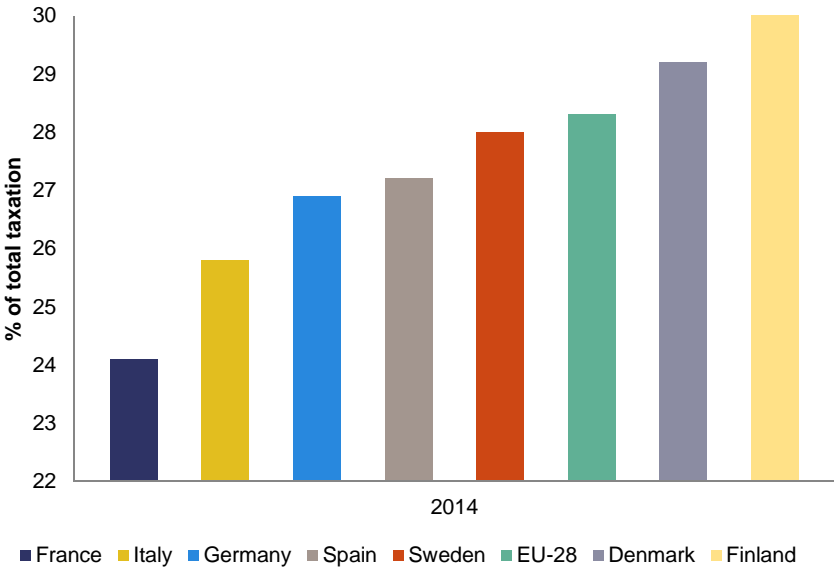
By contrast consumption taxation is relatively low when compared to the rest of the euro area. The burden of taxation continues to fall less on consumption than it does in other EU countries. In 2015, taxes on consumption represented 24.4% total tax revenues, which stands in stark contrast with respect to other countries (Graph 2). In this regard, the standard VAT rate is broadly in line with the euro area average, but low and reduced rates applied to a large base and numerous exemptions lead to a low implicit rate on average while diminishing the efficiency of the VAT system (Kalyva et al., 2016). Specifically, in 2014, the revenue foregone from applying reduced rates represented 10% of the theoretical total VAT liability (around 1% of GDP) that would have resulted from a perfectly flat system, which is above the EU average estimated at some 5% (see CASE, 2016).

Therefore, the French tax structure would be more growth-friendly if it weighed less on production factors and more on consumption, including VAT. On the other hand, there is scope to accomplish such a shift by broadening tax bases, especially in taxes on consumption. This would allow for some fiscal space to alleviate taxes relying on production factors.

The fact that the VAT in France is low compared to the rest of the EU is partly explained by the sizeable tax expenditures associated to this tax. These tax expenditures are mainly related to widespread use of reduced tax rates and exemption for a number of spending categories. While serving for different policy targets, including equity reasons, some of these reduced tax rates can be considered as economically inefficient in that the same goals could be achieved by using other less economically distortive policy instruments. In particular, the French Council for taxes and contributions (*Conseil des Prélèvements Obligatoires*) identified as inefficient, at least, the reduced rates applied to renovation and maintenance works on housing and to hotels and restaurants. These

implied revenue losses by EUR 6.3 bn. in the 2016 finance law. Improving the efficiency of the VAT system by eliminating inefficient reduced rates would call for a less pronounced increase in VAT rates in a hypothetical reform aimed at shifting the tax burden away from production factors. These elements would be key so as to bring about long-lasting positive effects on growth and employment.

Graph 2: Taxes on consumption in selected Member States in 2014



Source: Taxation trends in the European Union 2016

4. OPTIONS FOR A TAX-SHIFT IN FRANCE

As taxes on production factors are relatively high in France whereas the share of taxes on consumption is low, we present three alternatives consisting in simulating an increase in the implicit VAT rate, jointly with reductions in implicit tax rates levied on production factors.

The macroeconomic effects derived from these tax-shift alternatives are simulated with the European Commission's DSGE model QUEST III.⁶ While this model can capture the macroeconomic effects stemming from changes in implicit tax rates, it cannot reflect the peculiarities derived from a shift in the structure of a given tax. Specifically, QUEST III cannot distinguish between changes in reduced VAT rates and a linear increase in all VAT rates affecting the different taxable goods and services as in both cases they are simulated via their impact in the overall implicit rate. Moreover, neither is the model designed to capture the incidence of proposed tax reforms as there are only two types of consumers, non-liquidity-constrained (Ricardian) and liquidity-constrained consumers (non-Ricardian). However, similar increases in the implicit VAT rate could be attained through alternative formulas with very different effects in terms of tax incidence.

We present simulations where revenues from VAT are increased by 0.4% of GDP (equivalent to an increase in the implicit VAT rate by 0.5 pps, or approximately €8.5 bn.) and are offset in an ex-ante budgetary neutral manner by i) either an equivalent reduction in social security contributions borne by

⁶ See Ratto et al. (2009).

employers,⁷ ii) by a reduction in corporate income taxes, or iii) by a combination of the two while also allowing for some increase in government transfers.

The first simulation is justified by the fact that taxes on labour are comparably high in France, especially because social security contributions as a share of total labour costs borne by the employers are the highest in the EU, thereby contributing to a high tax burden on companies. Based on an indicator-based screening taxonomy, Wöhlbier et al. (2014) and Wöhlbier (2016) conclude that the high overall tax burden on labour in France, combined with a relatively low taxation of consumption, suggests some scope for a tax-shift on those bases. Moreover, in the 2016 Country specific recommendations France is recommended to "ensure that the labour cost reductions are sustained", while in the recitals it is explained that the tax system weighs significantly on production factors but relatively little on consumption.

The second simulation stems also from the relatively high taxes on companies in France. As shown in section 3, the effective average corporate tax rate in France was the highest in the EU in 2016. Moreover, the overall corporate capital costs in France are the highest in the EU28 and have remained broadly constant since 2000. These factors weigh heavily on corporate investment. Based on this evidence, the Council recommended France in 2017 to take action to reduce the taxes on production and the corporate income statutory rate.

The third simulation is chosen to address both issues of high taxes on labour and on corporates, while allowing for higher government transfers aimed at offsetting part of the short-term regressive impact that an increase in VAT rates could have.

Each reform is entirely undertaken within the first quarter and is permanent, and in all simulations ex-post budgetary effects are neutralised by adjusting the labour tax rate to keep the debt-to-GDP ratio at its target level. It should also be noted that, in all scenarios, benefits as well as transfers are indexed to the consumer price index before VAT. Burgert and Roeger (2014) show the sensitivity to this assumption and, in particular, how compensation schemes for benefit and transfer recipients dampen the effects stemming from changes in the VAT rate.⁸

4.1. VAT INCREASE OFFSET BY A REDUCTION IN SOCIAL CONTRIBUTIONS (FISCAL DEVALUATION)

Graph 3 shows the impulse responses of the main variables to the simulated tax-shift whereby a VAT increase is offset on impact by an equivalent reduction in social security contributions borne by the employers. The increase in the implicit VAT rate entails a substitution effect that brings about a decline in private consumption on impact, due to lower consumption expenditure by liquidity-constrained consumers (40% of total consumers in the model). This fall in private consumption is however very short-lived. In this case, the initial decline in households' purchasing power stemming the VAT increase is more than offset over time by the rise in both employment and the net real wage (net real consumption wage in the charts). These two elements feed private consumption, which remains above the baseline by almost 0.25 pps. ten years after the tax-shift.

⁷ Barrios et al. (2016) present a dynamic scoring analysis of tax reforms for Italy, Belgium and Poland, where they account for the feedback effects resulting from the adjustment in the labour market and for the economy-wide reaction to tax policy changes. A similar analysis for France is expected shortly.

⁸ Burgert and Roeger (2014) present a systematic analysis of a tax shift from labour to consumption and discuss its distributional consequences. Allowing for a compensation of transfer and benefit recipients does not alter the dynamics of aggregate variables, but does dampen the effect of the said tax shift. Regarding distributional considerations, even though disposable income of households originating from transfers and benefits is higher when compensated (higher effective cost of consumption), given that the reservation wage increases the employment effects are lower.

Graph 3. Responses to an increase in VAT matched by a reduction in social contributions



Source: Commission services based on QUEST III simulations

The response of private consumption is non-homogeneous by type of consumer. Consumption by non-liquidity constrained consumers rises permanently given that the increase in employment and net real

wages enhance their purchasing power and permanent income. By contrast, in the case of constrained consumers consumption declines on impact owing to the VAT increase, but recovers quickly as a result of the positive reaction of employment and the real wage. The reduction in social contributions reduces the cost of labour for employers, which provokes an increase in labour demand that triggers hiring by around 0.28% with respect to the baseline after ten years and pushes real wages up permanently.

In turn, private investment displays a permanent increase by almost 0.15% with respect to the baseline. Such increase is explained by the increase in profits. However, the rise in private investment is less pronounced than that of employment, for which a tax-shift consisting in raising VAT and reducing social contributions brings about a fall in the capital intensity.

The simultaneous increase in VAT and the reduction of social contributions would have a positive impact on price competitiveness by increasing the price of imported goods while reducing the production costs of domestic goods. This translates into a decline in the terms of trade and real exchange rate depreciation (increase). The real depreciation results into lower imports, whereas exports rise on a permanent basis. Thus, net exports' contribution to growth improves permanently as expected from a fiscal devaluation. However, the positive effect on the trade balance and, consequently, on the domestic current account, tends to fade away in the long term, mainly due to the decline in export prices.

As a result of the pick-up in private consumption, investment and net exports, GDP rises permanently above the baseline. This increase is however moderate in that it amounts to a cumulative increase of 0.25% after ten years. This means that a permanent GDP effect of some 1% would call for an increase in the implicit VAT rate of around 2 points. The moderate size of these effects is nevertheless in line with the estimated magnitude in Kneller et al. (1999) or Obringer et al. (2005).

According to the simulations in Graph 3, the simulated policy shift would entail a net positive effect on public finances too. The reduction in employers' social contributions is calibrated to neutralise the VAT increase ex-ante. However, in the medium term the responses of the relevant macro variables break this budgetary neutrality ex-post. The permanent increase in VAT revenues is offset only in part by the decline in social contributions in that the raise in employment mitigates the impact on social security revenues. In turn, the resulting rise in consumer prices brings about a mild positive response of government transfers, which are nevertheless insufficient to counter the effect on government revenues. Consequently, this policy option would bring about a permanent improvement in the general government balance, a persistent decline of public debt and thus an improvement in medium-term public debt sustainability.

4.2. VAT INCREASE OFFSET BY A REDUCTION IN CORPORATE TAXES

The impulse-responses to this policy option are shown in Graph 4. The shock to corporate taxes is again calibrated so that the budgetary effect is neutral ex-ante. Contrary to the previous case, the increase in the implicit VAT rate entails a protracted negative effect on private consumption that affects more strongly liquidity-constrained consumers. This is led by the fall in the net real (consumption) wage and the response of employment, that falls below the baseline three years after the shock and remains negative thereafter, though marginally (by an accumulated 0.03% in ten years). In the case of non-constrained consumers, consumption displays a hump-shaped pattern that resumes to the baseline by the end of the simulation horizon.

The reduction in the corporate income tax rate brings about a permanent, more pronounced pick-up in private investment that is supported by the increase in corporate profits in the medium-to-long term. On the other hand, the long-term decline in employment and the higher investment contribute to raising capital intensity.

Graph 4. Responses to an increase in VAT matched by a reduction in the corporate income tax



Source: Commission services based on QUEST III simulations

The investment pick-up pushes imports, while exports also go up as a result of the real depreciation. Thus, net exports prove more positive to growth, thereby leading to an accumulated mild GDP

expansion by 0.17% in the long term. In this case however, the increase of GDP is lower than when social contributions are cut as the private investment pick-up is the main driving force behind the GDP expansion but its share on GDP is significantly lower than the share of private consumption.

The reduction in the corporate tax rate lowers the cost of capital and stimulates investment, thereby leading to some labour substitution in the long term. In turn, real wages tend to increase in the medium-to-long term as a result of the increase in labour productivity. However, net real consumption wages decline permanently. Therefore, this policy option seems to generate regressive effects in that the rise in VAT entails a loss in households' purchasing power that is not offset over time by higher compensation of employees.

In this case, there is also a positive impact on price competitiveness as export prices also increase although more slowly than import prices. The fall in the terms of trade and the real exchange rate depreciation are more intense than in the case of a decline in social contributions. The real depreciation translates on impact into an improvement in the trade balance. However, this improvement proves only transitory in that imports also pick up, fuelled by higher private investment, and the persistent increase in import prices bring about a slight deterioration in the trade balance in the medium-to-long term.

In terms of public finances, the initial increase in VAT revenues is marginally offset by the decline in private consumption, whereas the reduction in corporate taxes remains broadly stable over the simulation horizon. Therefore, this policy shift entails a marginally negative impact on overall tax revenues. However, the resulting rise in consumer prices also imply a positive response of government transfers, which adds up to slightly lower tax revenues in the medium term. Hence, the general government balance deteriorates, thereby undermining the medium-term public debt sustainability.

4.3. VAT INCREASE OFFSET BY A MIXED OPTION

The previous two sets of simulations show that reducing social contributions or corporate income tax rates in isolation would have very different effects on some key variables depending on the channels through which they operate. Arguably, these are two extreme cases, but tax-shifts aimed at reducing taxes on production factors and increasing indirect taxes, can be achieved by many possible combinations depending on the targeted effects.

This sub-section shows a mixed policy option consisting in using the additional VAT revenues to finance simultaneously cuts in social security contributions and corporate taxes, while allowing for a moderate increase in government transfers. Specifically, the simulation assumes that the reduction in social security contributions on impact amounts to 71% of the additional VAT revenues. Likewise, corporate income tax rates are reduced to attain a reduction in receipts from this tax equivalent to 25% of the additional VAT revenues. The remaining 4% of additional VAT receipts is used to raise social transfers targeted to financially-constrained consumers to partially compensate for the initial regressive effect stemming from the increase in VAT rates. These shares have been calibrated in order to prevent a negative response of employment over a 10-year horizon. Graph 5 shows the corresponding responses to this policy option.

Under these conditions, the responses of the main variables reproduce many aspects, though at somewhat different scale, of those observed under the option consisting in reducing social contributions only. The increase in the implicit VAT rate weighs on private consumption in the short term due to the fall in expenditure by liquidity-constrained consumers. However, in the medium-to-long term, private consumption rises as a result of the permanent increase in the case of non-liquidity-constrained consumers and the recovery of consumption expenditure by constrained consumers backed by the pick-up in employment, higher real wages and government transfers. Accordingly, as in the case of the VAT increase matched by a reduction in social contributions, with this policy the initial decline in households' purchasing power stemming the VAT increase is more than offset in the long

term by the rise in employment, the net real wage and government transfers, especially in the case of non-constrained consumers.

Graph 5. Responses to an increase in VAT matched by a reduction in social security contributions and the corporate income tax and an increase in transfers



Source: Commission services based on QUEST III simulations

In this case, higher employment is accompanied by a rise in private investment, led by the lower corporate income tax rates. The contribution to growth by net exports improves too. Exports go up on a permanent basis, pushed by price/cost competitiveness gains. In turn, imports dwindle over the first years following the policy shock but recover thereafter, pushed by higher final demand, especially investment, although more moderately than exports. Consequently, GDP rises permanently, with its cumulative increase after ten years reaching some 0.2%.

Lower employers' social security contributions reduce the cost of labour, while lower corporate taxes do so with the cost of capital, thereby pushing up corporate profits. This brings about an increase in labour demand, investment and real wages. However, as in the previous cases, the cumulative effect in employment is moderate, by 0.2% by the end of the simulation horizon.

Price competitiveness also improves in that the price of imported goods rises at the same time as production costs and export prices dwindle. The terms of trade decline and the real exchange rate depreciates, which translates into temporarily lower imports. This, jointly with stronger exports, implies an improvement in the trade balance that lasts for some years but reverts when real imports recover and add up to their higher prices.

This policy combination is also able to generate net positive effects on public finances too. Total tax revenues increase with respect to the baseline, although these are partly countered by also higher public spending. The latter derives from the assumed initial increase in government transfers (by an amount of 4% of the additional VAT revenues), but also from higher consumer prices. The permanent improvement in the general government balance puts public debt on a steady downward trend and thus contributes to improving public debt sustainability in the medium-term.

5. CONCLUDING REMARKS

The French tax system is very complex and heavily reliant on taxes on production factors, whereas taxes on consumption are relatively low when compared to the rest of the EU countries. Accordingly, it is widely claimed that the French tax system is not growth-friendly.

The simulations presented in this paper show that a tax-shift whereby taxes on consumption are raised to alleviate taxes on production factors would make the system more growth friendly as it would have a positive and permanent impact on GDP and on price competitiveness. However, the alternative options at hand are far from neutral as they entail quite different results for some of the key macroeconomic and fiscal variables. In particular, the simulations show that tax-shift scenarios that imply cuts in social contributions borne by employers are expected to bring about more positive effects on employment, the trade balance and the general government deficit. By contrast, while lowering corporate taxes would also give rise to a positive GDP response, external price competitiveness and private investment, it would affect employment, the trade balance and the general government deficit negatively. In turn, the increase in private investment is more pronounced when corporate taxes are cut. Therefore, any tax-shift option should be chosen carefully by considering the different mechanisms through which the main variables are likely to react.

The simulations also show that, despite tax reforms shifting away taxes from production factors can entail positive GDP effects, these are likely to be moderate. According to the simulations presented in this paper, a 0.5% increase in the implicit VAT rate would bring about a cumulative GDP rise of 0.25% at the most after ten years, which is in line with values obtained in some empirical studies. This means that only sizeable GDP effects could be attained by deep reforms of the French tax system. However, these positive effects could be larger if such reforms also aimed to significantly enhance the

efficiency of the different taxes, an aspect that cannot be captured explicitly in QUEST III. The positive effects from these reforms in France could also have some positive spill-overs on other EU countries. However, as in absolute terms the effects are moderate, the euro area spill-overs would be even more limited as they would represent around one fifth of the domestic effect (see European Commission, 2017a).

On the other hand, there is another potential price to pay for a tax-shift consisting in raising taxes on consumption, namely the increase in inequality. Indirect taxes, and in particular VAT, are usually deemed to be regressive as their incidence is higher at the bottom of the income distribution. While VAT increases derived from broadening tax bases and increasing reduced rates could contribute to increasing the overall efficiency of the system, they would also bolster its regressivity. However, when VAT increases are accompanied by cuts in social contributions, as is assumed in scenarios 1 and 3 in this paper, the initially regressive effect stemming from the VAT increase is more than offset in the medium-to-long term by the rise in both employment and the net real wage, with the former benefitting constrained consumers more strongly.

Finally, another possibility to shift taxes away from production factors while avoiding some of the drawbacks of VAT increases would be to raise environmental taxes. As showed in European Commission (2017a) environmental taxes are relatively low in France compared to the EU. As a percentage of total taxes, environmental taxes in France were the lowest in the EU in 2014. Hence, there is significant scope to increase these taxes. In fact, the current French government is already taking some steps in this direction. Environmental taxes are normally levied on items with more inelastic demand compared to the overall VAT base. Thus, raising environmental taxes would imply less detrimental effects on private consumption than VAT increases, for which tax shifts based on increases of the former could lead to somewhat more positive effects than shown in this paper.

REFERENCES

- Acosta-Ormaechea, S. and J. Yoo (2012), Tax Composition and Growth: a Broad Cross-Country Perspective. IMF Working Paper, 12/257.
- Arachi, G., Bucci, V. and A. Casarico (2015), Tax Structure and Macroeconomic Performance. *International Tax and Public Finance*, 22 (4): 635-667.
- Arnold, J. (2008), Do Tax Structures Affect Aggregate Economic Growth? Empirical Evidence from a Panel of OECD Countries, OECD Economic Department Papers, 643.
- Barrios, S., Dolls, M., Maftai, A., Peichl, A., Riscado, S., Varga, J. and Christian Wittneben (2016), Dynamic scoring of tax reforms in the European Union. JRC Working Papers on Taxation and Structural Reforms No 3/2016. European Commission.
- Burgert, M., and Roeger, R. (2014), Fiscal Devaluation: Efficiency and Equity. *European Economy. Economic Paper no. 542*. European Commission.
- CASE (2016), Study and reports on the VAT Gap in the EU-28 Member States: 2016 Final report.. TAXUD/2015/CC/131, Center for Social and Economic Research, Institute for Advances Studies Warsaw.
- European Commission (2016), Commission Staff Working Document, 2016 Country Report France, Including an In-Depth Review on the prevention and correction of macroeconomic imbalances.
- European Commission (2017a), Commission Staff Working Document, 2017 Country Report France. Including an In-Depth Review on the prevention and correction of macroeconomic imbalances.
- European Commission (2017b), Taxation Trends in the European Union, 2017 edition.
- Kalyva, A., Naudts, H., and Princen, S. (2016), The French VAT System and Revenue Efficiency. *European Economy, Economic Brief 015*, European Commission.
- Kneller, R., Bleaney, M.F. and Gemmel, N (1999), Fiscal policy and growth: evidence from OECD countries. *Journal of Public Economics* 74: 171–190.
- Koske, Isabell (2013), Fiscal Devaluation – Can it Help to Boost Competitiveness?, OECD Economics Department Working Papers, No. 1089, OECD Publishing.
- Mathé, M., Nicodème, G., and Ruà, S. (2015), Tax Shifts. *Taxation Papers, Working Paper No 59*, European Commission.
- Myles, G.D. (2009), Economic Growth and the Role of Taxation – Aggregate Data. OECD Economics Department Working Papers, 714.
- Obringer, C., Boeters, S. and Feilc, M. (2005), Taxation and unemployment: an applied general equilibrium approach. *Economic Modelling*, Vol. 22 (1): 81-108.

Pestel, N. and Sommer, E. (2013), Shifting Taxes from Labor to Consumption: Efficient, but Regressive?, IZA Discussion Paper No. 7804.

Ratto M., Roeger W., and in 't Veld J. (2009), QUEST III: An Estimated Open-Economy DSGE Model of the Euro Area with Fiscal and Monetary Policy. *Economic Modelling*, 26 (2009), pp. 222-233.

Taly, M. (2016), *Les Coulisses de la Politique Fiscale*. Ed. Presses Universitaires de France, Paris.

Varga, J., and in 't Veld, J. (2014), The potential growth impact of structural reforms in the EU. A benchmarking exercise. *European Economy*. Economic Paper no. 541. European Commission.

Vogel L., (2015), Stabilisation and rebalancing with fiscal or monetary devaluation: a model-based comparison. *ECFIN Discussion Paper 22*

Wöhlbier, F., Astarita, C. and Mourre, G. (2014), Consolidation on the revenue side and growth-friendly tax structures: an indicator based approach. *European Economy*. Economic Paper no. 513. European Commission.

Wöhlbier, F., Astarita, C. and Mourre, G. (2016), Growth-Friendly Tax Structures: An Indicator-Based Approach. *German Econ Rev*. doi:10.1111/geer.12116.

Xing, J. (2012), Does tax structure affect economic growth? Empirical evidence from OECD countries. *Economics Letters*, 117(1), 379–382.

ZEW (2016), The Effects of Tax Reforms to Address the Debt-Equity Bias on the Cost of Capital and on Effective Tax Rates. *Taxation paper No. 65*, 2016.

EUROPEAN ECONOMY DISCUSSION PAPERS

European Economy Discussion Papers can be accessed and downloaded free of charge from the following address:

[https://ec.europa.eu/info/publications/economic-and-financial-affairs-publications_en?field_eurovoc_taxonomy_target_id_selective=All&field_core_nal_countries_tid_selective=All&field_core_date_published_value\[value\]\[year\]=All&field_core_tags_tid_i18n=22617](https://ec.europa.eu/info/publications/economic-and-financial-affairs-publications_en?field_eurovoc_taxonomy_target_id_selective=All&field_core_nal_countries_tid_selective=All&field_core_date_published_value[value][year]=All&field_core_tags_tid_i18n=22617).

Titles published before July 2015 under the Economic Papers series can be accessed and downloaded free of charge from:

http://ec.europa.eu/economy_finance/publications/economic_paper/index_en.htm.

GETTING IN TOUCH WITH THE EU

In person

All over the European Union there are hundreds of Europe Direct Information Centres. You can find the address of the centre nearest you at: <http://europa.eu/contact>.

On the phone or by e-mail

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),
- at the following standard number: +32 22999696 or
- by electronic mail via: <http://europa.eu/contact>.

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: <http://europa.eu>.

EU Publications

You can download or order free and priced EU publications from EU Bookshop at: <http://publications.europa.eu/bookshop>. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see <http://europa.eu/contact>).

EU law and related documents

For access to legal information from the EU, including all EU law since 1951 in all the official language versions, go to EUR-Lex at: <http://eur-lex.europa.eu>.

Open data from the EU

The EU Open Data Portal (<http://data.europa.eu/euodp/en/data>) provides access to datasets from the EU. Data can be downloaded and reused for free, both for commercial and non-commercial purposes.

