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Consolidation on the revenue side
and growth-friendly tax structures:
an indicator based approach

Florian Wöhlbier, Caterina Astarita, Gilles Mourre



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Florian Wöhlbier, Caterina Astarita and Gilles Mourre

Abstract

The paper examines potential challenges arising at Member State level from the need and scope for either consolidating on the revenue side or shifting taxes away from labour. It uses a systematic indicator-based screening to identify Member States that may face a challenge in each of these two policy areas. The first quantitative screening is applied to identify Member States that have need and room for shifting taxation away from labour to other tax bases. The analysis of labour taxation looks at overall labour taxation and at taxation of two specific groups considered to be rather responsive to labour supply incentives, namely low-skilled workers and second-earners. A second screening aims at identifying Member States that might consider using taxation – in addition to expenditure control – to consolidate their public finances and steer them onto a sustainable path. This screening looks into the potential need for substantial fiscal consolidation and the availability of 'tax space'. Robustness checks are carried out to test how far the screening results depend on the screening approach. These checks overall confirm the outcome of the main screening approach. However, both screenings need to be complemented with in-depth country analysis before being able to draw firm policy conclusions.

JEL classification: E62, H2, J2.

Keywords: taxation, tax policy, tax reforms, tax revenue, tax structure, tax shift, consolidation, quality of taxation, fiscal sustainability.

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CONTENT

1. Introduction	5
2. Brief literature overview	7
2.1. The macroeconomic effect of shifting tax away from direct taxation	7
2.2. The relevance of consolidation on the revenue side	8
3. Benchmarking approach	11
4. Growth-friendly tax structures	15
4.1. Screening principles to identify a potential need and room for a tax shift	15
4.2. Screening of Member States	16
4.2.1. Need for a shift: high tax burden on labour	17
4.2.2. Scope for tax shifting towards taxes considered less detrimental to growth	22
4.2.3. Summary of the findings on the potential for tax shifting	26
4.3. Robustness check: results using alternative screening benchmarks	27
5. Consolidation on the revenue side	31
5.1. Screening principles to identify the potential need and scope for revenue-based consolidation	31
5.2. Application of screening	33
5.2.1. Fiscal sustainability and consolidation needs	33
5.2.2. Availability of 'tax space'	35
5.2.3. Summary of screening results	36
5.3. Robustness check: results using alternative screening benchmarks	37
6. Concluding remarks	39
References	41
Statistical annex	45

LIST OF TABLES

2.1. Multipliers to an increase in net taxes (derived from econometric and VAR estimations)	11
4.1. Tax burden on labour and overall labour market situation	18
4.2. Tax burden on low-wage earners and labour market situation of low-income earners	19

4.3.	Gender specific labour market situation and tax burden on second earners	22
4.4.	Consumption taxes and indirect taxes	23
4.5.	Tax burden on the environment	26
4.6.	Overview: tax structure indicators	27
4.7.	Need and room for tax shift: outcome of different screening approaches – robustness check	29
5.1.	Sustainability gap and consolidation challenge	34
5.2.	Indicators of 'tax space'	34
5.3.	Assessment of tax space and fiscal consolidation challenge	35
5.4.	Fiscal consolidation challenge: outcome of different screening approaches – robustness check	36
A.1.	Need and room for tax shift: robustness check (1) - LAF unweighted	45
A.2.	Need and room for tax shift: robustness check (2) - Ranking approach	46
A.3.	Need and room for tax shift: robustness check (3) – Winsorising 1	47
A.4.	Need and room for tax shift: robustness check (4) – Winsorising 2	48
A.5.	Need and scope for contribution from the revenue side to consolidation: robustness check (1) – LAF unweighted	51
A.6.	Need and scope for contribution from the revenue side to consolidation: robustness check (2) – Ranking approach	50
A.7.	Need and scope for contribution from the revenue side to consolidation: robustness check (3) – Winsorising 1	51
A.8.	Need and scope for contribution from the revenue side to consolidation: robustness check (4) – Winsorising 2	52
A.9.	Need and scope for contribution for revenue side to consolidation: robustness check for overall tax space	53

LIST OF GRAPHS

4.1.	Revenues from property taxation, 2011 (in % of GDP)	25
4.2.	Need and room for tax shift: outcome of different screening approaches – summary of robustness checks	28
5.1.	Summary of different screening results regarding the potential need and scope for increasing revenue to consolidate	37

LIST OF BOXES

5.1.	Fiscal sustainability – the S1 and S2 indicator	32
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1. INTRODUCTION

The consequences of the financial and economic crisis are, and will be, deeply reflected in Member States' government revenues. Having implemented a wide range of stimulus measures over the period 2008-10, the focus has clearly shifted towards a much needed consolidation of public finances. Large and differentiated fiscal adjustments are underway across EU countries. These require credible strategies to restore the sustainability of public finances while creating the basis for lasting growth. Fiscal policy recommendations under the EU framework aim at promoting a growth-friendly approach to consolidation design. This involves considering the structure of taxation and the composition of the budgetary adjustment between taxes and spending.

Fiscal consolidation offers an opportunity to improve the structure of the tax system. It seems that some countries have some need and scope for tax shifting so as to reduce the tax burden on labour, which is commonly considered as very distortionary.

Moreover, the composition of the consolidation effort per se may deserve specific considerations. While the experience from successful consolidations suggests that fiscal adjustment should primarily come from the expenditure side of the budget, some Member States could consider increasing tax revenues – as a complement to expenditure cuts – so as to make the necessary budgetary adjustments. This is particularly relevant for countries that show unsustainable budgetary situations and, at the same time, have room for potential tax revenue increases.

The paper examines potential challenges arising at Member State level from the need and scope for either consolidating on the revenue side or shifting taxes away from labour. It is structured as follows: Section 2 presents a brief literature survey on the macroeconomic impact of shifting tax away from labour and on the relevance of consolidation on the revenue side. Section 3 presents the logic behind the different screening approaches applied in this paper, and used either as baseline or in sensitivity analysis. Section 4 applies a series of horizontal quantitative screenings – against common horizontal criteria and indicators – and analyses which Member States have need and room to shift taxation or, in other words, appear to face particular challenges regarding their tax structure. Section 5 runs similar quantitative screenings to identify Member States that might consider using taxation – in addition to expenditure control – to consolidate their public finances and steer them onto a more sustainable path. The screening criteria regard both the need for consolidation and the availability of 'tax space'.

2. BRIEF LITERATURE OVERVIEW

2.1. THE MACROECONOMIC EFFECT OF SHIFTING TAX AWAY FROM DIRECT TAXATION

Achieving consolidation through higher revenues offers an opportunity to improve the structure of the tax system. An efficient tax system designs taxes minimising distortions and correcting market failures where possible. In many Member States, a high tax burden on labour, especially on those groups that face a particularly weak attachment to the labour market (i.e. low-skilled workers or second earners in couples), coexists with relatively low levels of those taxes considered less detrimental to growth, i.e. consumption taxes, recurrent property taxes and environmental taxes. This corresponds to the ranking of taxes by the OECD in terms of growth-friendliness (Johansson et al., 2008; Arnold et al., 2011). These studies showed that the composition of tax revenues was significantly related to the level of income per capita in the long run, which was broadly confirmed by Acosta-Ormaechea and Yoo (2012) over a larger country sample. It should be noted that consumption taxes, considered as less distortive than direct taxation, also include excise duties on tobacco, alcohol and polluting activities. These are part of the 'sin taxes' and meant to mitigate related-health problems and environmental issues, by pricing in negative externalities on public health and the environment. Some also argue that a possible complement for recurrent property taxes could be to raise inheritance taxes (along parental gift taxes) which are very low in some countries (Piketty and Saez, 2012, IMF, 2013), although evidence on the distortion of such taxes is mixed (Boadway et al., 2010).

Model simulations seem to broadly confirm the OECD findings. While the precise ranking of taxes may be slightly altered, direct taxation appears much more distortionary than indirect taxation. Calculations with the European Commission's QUEST III model confirm the relationship between the different taxes and growth, both in the short and long run (Roeger and In't Veld, 2010; European Commission, 2011 and 2013a). A simulation of a permanent fiscal consolidation (reduction in the deficit-to-GDP ratio of 1%) highlights the importance of the choice of the tax instrument. An increase in corporate profit tax has, with relatively high adjustment costs on capital, a relatively small short term impact but GDP losses build up over the following years as investment is depressed and the capital stock reduced. It causes the largest long run GDP loss of all tax-based consolidations. In contrast, a consolidation through labour tax hikes yields a strong initial GDP loss (although in the long run labour taxes can be curtailed owing to the fiscal space that becomes available as a result of the reduction in government debt, and GDP eventually turns positive). Taxes on consumption (VAT and other consumption taxes) and taxes on housing property have smaller short term impacts. GDP falls by 0.2-0.1 percent below baseline in these cases and gradually recovers to become positive after 3-4 years. A revenue neutral shift from labour taxes to consumption taxes is thus found to have positive effects on employment and GDP ⁽¹⁾.

Coenen et al. (2012) compare the impact of seven discretionary fiscal stimulus shocks in seven structural DSGE models, all used heavily by policymaking institutions. They confirm the relative impact of the different tax instruments. In the short term, a temporary increase in labour taxation leads to a significant contraction of GDP of 0.53% in Europe on average across models ⁽²⁾. The long-term negative GDP effect across type of taxation broadly mirrors the ranking of taxes by distortionary effects in the public finance literature. For instance, for the IMF model GIMF, a permanent 10 percentage point increase in the US public debt-to-GDP ratio leads to crowding out private investment and a permanent increase in real interest rate. The ensuing rise in debt servicing leads a long-run reduction in GDP of 0.35% and 0.64% if financed by an increase in labour income taxes and corporate income taxes respectively, while leading to a cut of 0.26% only, if funded by an rise in consumptions taxes. This negative output effect in the long run, arising from a negative wealth effect (crowding out effect), is exacerbated by the distortion induced by taxation.

⁽¹⁾ See also Roeger and In't Veld (2010), European Commission (2010 and 2011).

⁽²⁾ The average figure is only 0.23 in the US. The stronger impact in Europe may be related to the higher level of taxation in Europe, combined with relatively generous benefit systems, which generates 'unemployment and inactivity traps', especially for the low-wage earners.

However, a recent econometric study (Xing, 2012) shows that the OECD ranking is not robust under different assumptions about the heterogeneity of the long-run and short-run coefficients across countries in the underlying econometric model. It should be borne in mind that the OECD ranking applies with all other things being equal: the specific design of the individual taxes also plays an important role in terms of economic efficiency, as noted by Keen (2013) in the case of the VAT structure or the base of corporate income tax.

In addition to its positive impact on GDP in the long run, shifting the tax burden from labour to consumption might also be beneficial, mainly in the short-term, for those countries that are suffering from losses in price competitiveness built up over the past decade (tax devaluation). While VAT is applied in the same way to foreign and domestic producers, a decrease in labour costs stemming from the tax shift would mainly benefit domestic producers, with their production costs being (temporarily) lowered vis-à-vis foreign competitors. The tax devaluation effect will not be analysed further, as this would require examining the other factors of competitiveness in detail, which is beyond the scope of this paper. In general, the competitiveness effects of a tax shift are mainly seen in the short-term (see de Mooij and Keen, 2012, and European Commission, 2013a, for a discussion).

2.2. THE RELEVANCE OF CONSOLIDATION ON THE REVENUE SIDE

As summarised by Carnot (2013), economists often advocate privileging expenditure control rather than tax increases as part of a well-designed consolidation strategy. This reflects the broad view that both spending and taxation levels have reached relatively high levels in advanced economies. There is no optimal size of the government, but both potential efficiency gains in spending and the opportunity cost of taxation are likely to rise more than proportionately with the size of the public sector. Focusing on expenditure reduction would be especially advisable where levels of taxation and spending are already elevated. This concern was echoed by national debates relative to the tax fatigue in several countries, after a sustained period of tax-based consolidation.

There are empirical indications that spending-based consolidations are more durable and more growth-friendly in the long-term. While many factors affect the likelihood of success of fiscal adjustments, including the overall economic, monetary and financial environment, empirical evidence suggests that adjustments relying mostly on expenditure are more likely to be sustained, rather than reversed at a later stage (European Commission, 2007). Macroeconomic models such as QUEST (Roeger and in't Veld, 2010) tend to confirm that expenditure-based adjustments are more growth-friendly in the long-term, with possible exceptions such as investment or innovation-related expenditures. Cuts in inefficient spending imply a lower tax burden in the long run and thus less economic distortion and positive supply-side effects.

However, in some specific cases, three arguments could be put forward to back the use of revenue-based consolidation.

The first argument contends that revenue-based consolidation seems to harm the economic activity less than expenditure-based consolidation in the first years of implementation. In other words, the negative output impact of tax increases seems to be lower in the short term than that induced by a cut in expenditure. In general, fiscal multipliers (ratio of the output effects of fiscal shocks to the size of this initial shock) are found to be higher in the short-term for government expenditure shocks than for tax shocks (e.g. Coenen et al., 2012). The first-year instantaneous multipliers for Europe, averaged across seven structural DSGE models, are ranging from 1.52 to 0.90 for expenditures (except for general transfers) and from 0.66-0.15 for taxes. QUEST multipliers (Roeger and in't Veld, 2010) amount to 1 for government wages and government investments, to 0.5 for government purchases and to below 0.4 for transfers and taxes. Surveying VAR-approach multipliers, Boussard, de Castro and Salto (2012) show that most of the empirical estimates reveal that tax shocks usually entail lower effects on GDP than public

Table 2.1: Multipliers to an increase in net taxes (derived from econometric and VAR estimations)

Studies	Sample	Short-term multiplier	Medium-term multiplier	Identification strategy
Blanchard and Perotti (2002)	US (1947:1-1997:4)	Within range -0.7 and -1.3	Within range -0.4 and -1.3	Decision lags in policy making and imposition of contemporaneous GDP elasticities
Perotti (2004)	US (1960:1-1979:4)	-1.41	-23.87	Blanchard-Perotti
	US (1980:1-2001:4)	0.7	1.55	
Favero and Giavazzi (2007)	US (1980:1-2006:4)	0.29	0.65	Narrative approach
Mountford and Uhlig (2009)	US (1955:1-2000:4)	-0.16	-2.35	Sign restrictions on impulse responses
Romer and Romer (2010)	US (1945:1-2007:4)		-3	Narrative approach
Perotti (2004)	Germany (1960:1-1974:4)	0.29	-0.05	Blanchard-Perotti
	Germany (1975:1-1989:4)	-0.04	0.59	
Baum and Koester (2011)	Germany (1976:1-2009:4)	-0.66	-0.53	Blanchard-Perotti and TVAR
Benassy-Quere and Cimadomo (2006)	Germany (1971:1-2004:4)	-1.17	-1.08	FVAR and Blanchard-Perotti
Biau and Girard (2005)	France (1978:1-2003:4)	-0.5	-0.8	Blanchard-Perotti
Giordano et al. (2007)	Italy (1982:1-2004:4)	0.16		Blanchard-Perotti
De Castro (2006)	Spain (1980:1-2001:2)	0.05	0.39	Cholesky decomposition
Afonso and Sousa (2009)	Portugal (1979:1-2007:4)	+	+	Blanchard-Perotti
Perotti (2004)	UK (1963:1-1979:4)	-0.23	-0.21	Blanchard-Perotti
	UK (1980:1-2001:2)	0.43	0.7	
Benassy-Quere and Cimadomo (2006)	UK (1971:1-2004:4)	-0.23	-0.07	FVAR and Blanchard-Perotti
Cloyne (2011)	UK (1945-2010)	Between -0.5 and -1.0	-2.5	Narrative approach
Burriel et al. (2010)	Euro Area (1981-2007)	-0.63	-0.49	Blanchard-Perotti

Source: Commission services, Boussard, de Castro and Salto (2012).

expenditure shocks. As far as European countries are concerned, tax shocks usually lead to very low, mostly non-significant multipliers according to the influential study by Blanchard and Perotti (2002). The large majority of estimates of first-year spending multipliers in normal times are located in the range of 0.4 to 1.2. The values are lower – quite often below 0.7 - for tax multipliers.

However, this literature has given rise to heated debates and bitter controversy on the size of multipliers by type of fiscal instrument and the appropriate mix of government spending restraints and tax cuts. Some authors (Giavazzi and Pagano, 1990, Alesina and Perotti, 1995, Alesina and Ardagna, 2010 and 2012) insist that expenditure-based adjustments are also less contractionary in the short run and could even be expansionary, with negative multipliers. However, recent research by the IMF (2010) and Perotti (2012) criticises the idea that expenditure-based deficit reductions could be expansionary and stresses that the studies claiming the existence of expansionary consolidation downplay the contractionary impacts of tight fiscal policy. Moreover, other authors, often using a narrative approach, find much higher tax multipliers (Romer and Romer, 2010) than major earlier studies, such as Blanchard and Perotti (2002). But, there again, this extreme results were heavily criticised as implausibly large by Favero and Giavazzi (2010) and Perotti (2011), for methodological reasons and because of the absence of theoretical distinction between the discretionary component of tax changes and the endogenous response of taxes generated by output fluctuations.

Second, if we agree with the idea of a lower negative response of short-term GDP to tax increases (than to expenditures cuts), one might argue that a tax increase will be less 'self-defeating'. This holds at the current juncture, when public debt levels as a percentage of GDP are very high in many EU countries and on the rise, partly to heavy debt servicing, the lack of market confidence pushing sovereign debt spreads up and an adverse denominator effect generated by the contraction of GDP. Boussard, de Castro and Salto (2012) calculate a 'critical' value of the first-year multipliers, above which a deficit reduction leads to a further rise in the public debt-to-GDP ratio in the short-term. The 'critical' multipliers lie between 0.8 and

1.5 for most countries. This may make a case for tax-based consolidation, often associated with a multiplier below 0.7. It could be a way to maximise in the short term the impact of consolidation on actual public debt reduction. Of course, this should be qualified by other considerations, such as the dispersion of the tax and spending multipliers across countries, the uncertainty surrounding their estimates, their persistence over time and the actual reaction of sovereign yields to consolidation efforts.

Third, large fiscal corrections have to rely on multiple instruments to be successful, reflecting more pragmatic considerations (Carnot, 2013). While the emphasis should ideally be put on expenditure, policy makers should go beyond the broad categories of aggregate spending and taxation and pick up growth-friendly measures in an encompassing manner. First, redistribution is a key objective of many governments, and this can sometimes conflict with spending-based adjustment. A comprehensive approach distributes the costs more widely across the population, rather than targeting specific groups: this helps convey the message that everyone pays its fair share (Steger, 2012). Furthermore, consolidation needs are sizeable in many countries today, making almost unavoidable the reliance on a mix of tax and spending measures. This is all the more relevant because parts of government spending can be highly efficient – by increasing physical and human capital, or raising the productivity of the private sector – and need to be preserved. Finally, curbing spending can often be implemented over time only owing to the well-documented policy lags, whereas revenue increases can typically be adopted faster and kick in promptly.

3. BENCHMARKING APPROACH

In this paper, Member States are benchmarked against EU Member States to identify if they face a challenge in a particular tax policy area. The main benchmarking approach used is based on the so-called LIME Assessment Framework (LAF).⁽³⁾ With the 'standard' LAF approach, a Member State is, in short, considered to face a challenge in a particular policy area if it is amongst the worst performers, which is concretely defined as the bottom third of the distribution for a specific indicator (under normality assumption).

The benchmark is used to assess the relative performance of a Member State in a specific aspect of tax policy captured by an individual indicator.⁽⁴⁾ Although the benchmarking leads to a purely statistical assessment, it has the advantage of being transparent and treating each country in a consistent way. This information is factored in the elaborated screening approaches presented in Sections 4 and 5, which combine the performance of several indicators according to precise algorithms to assess whether a Member State faces a challenge in one of the two policy areas covered in the paper. To check for the robustness of the screening results with the standard LAF approach, several other benchmarking approaches are applied. Most of them are based on different variations of the standard LAF approach. In addition to those, a screening based on a ranking of countries, i.e. a purely ordinal approach, is applied.

Screening approaches applied - standard LAF approach

Applying the standard LAF approach, Member States are considered to face a challenge if an indicator value is significantly worse than the weighted EU average. This is defined in LAF by the fact that a Member State is in the bottom third of the distribution for a specific indicator⁽⁵⁾. Technically and under the normality assumption, this implies that the indicator is at least 0.4 standard deviations below the weighted EU average after reordering, so that a high indicator corresponds to a good performance.

The reordering – not displayed in the tables of the paper – is key to calculate the two performance thresholds: 'LAF plus' and 'LAF minus', indicating a good and a poor performance respectively. The reordering consists in multiplying the value of the indicator by -1, if a high value of the indicator is associated with a bad performance. Therefore, the direction of performance needs to be identified, and this is sometimes a delicate normative exercise: is the high value of the original indicator indicative of a bad or a good performance? The same indicator may point to several different concepts and its interpretation depends on its purpose.

For the sake of simplicity, the wording 'LAF plus' and 'LAF minus' or 'very high' and 'very low' are used in the paper as synonyms for significantly above/significantly below average. If a high (low) value of a – normally distributed – indicator refers to a good performance, the values above (below) 'LAF plus' capture the third of the distribution with the best performers. The values below (above) 'LAF minus' capture the third of the distribution with the worst performers. The values between 'LAF plus' and 'LAF minus' capture the third of the distribution which is not significantly different from the EU average.

⁽³⁾ The LIME Assessment Framework (LAF) was developed by the Lisbon Working Group attached to the Economic Policy Committee (EPC), which gathers together experts from all Member States, the EU Commission, ECB and OECD. LAF is an analytical tool that can help underpin the assessment of policy challenges facing Member States in raising growth potential. For a general description of LAF, see European Commission (2008).

⁽⁴⁾ The indicators applied are, in many cases, backward looking and can be subject to limitations as explained further in Sections 4 and 5. Furthermore, indicator-based screening is not only influenced by the tax policy stance, but also by the behavioural effects generated by tax policy measures (including the change in tax compliance) and the economic environment including the position in the business cycle.

⁽⁵⁾ The second third of the distribution corresponds to observations around the average, that is, not 'significantly' different from the average. The last third of the distribution corresponds to good performance, significantly above average.

In more technical terms, the 'LAF plus' and 'LAF minus' thresholds are calculated as follows:

$$\begin{aligned} LAF \text{ plus} &= \bar{x} + (\pm 1) \times 0.4 \times \sigma \\ LAF \text{ minus} &= \bar{x} + (\pm 1) \times 0.4 \times \sigma \end{aligned}$$

Where \bar{x} and σ are, respectively, the GDP-weighted mean and the GDP-weighted standard deviation.

First robustness check - Variations of standard LAF approach

In order to see how robust the screening results are, it is analysed how different variations of the standard LAF approach impact the results.

The first additional screenings called 'LAF un-weighted', uses the unweighted average and the unweighted standard deviation, instead of the weighted average and standard deviation. By giving equal weight to all Member States, this approach controls for the economic size of Member States, since the results of the 'standard LAF' approach are strongly driven by larger Member States. In this case, \bar{x} and σ in the equations above are, respectively, the unweighted mean and the unweighted standard deviation.

In order to check how far the results in the standard LAF approach are driven by outliers, in particular in larger EU Member States, the data used in the sample are corrected for very large or very low values. Instead of removing the outliers altogether, their values are replaced by a lower (higher) value, i.e. closer to the sample average. This statistical technique is called winsorisation. Two different ways are used to do so.

The first of these approaches corrects the data for values lying at the top or bottom 2.5% of the normal distribution (considering the sum of the lower limit and of the upper limit). This is done as follows:

$$x_i^{win} = \begin{cases} \bar{x} - 1.96 \times \sigma & \text{if } \frac{x_i - \bar{x}}{\sigma} \leq -1.96 \\ \bar{x} + 1.96 \times \sigma & \text{if } \frac{x_i - \bar{x}}{\sigma} \geq 1.96 \\ x_i & \text{otherwise} \end{cases}$$

Where x_i^{win} is the winsorized value, x_i is the observed value, \bar{x} and σ are, respectively, the GDP-weighted mean and standard deviation. Values in the two extreme areas of the distribution are replaced by the borders of the interval.

In the other approach, the data used for the standard LAF approach is corrected for the two highest and two lowest values, which are brought to the third highest and third lowest value, respectively:

$$x_i^{win} = \begin{cases} 3^{rd} \text{ lowest value} & \text{if } x_i \leq 2^{nd} \text{ lowest value} \\ 3^{rd} \text{ highest value} & \text{if } x_i \geq 2^{nd} \text{ highest value} \\ x_i & \text{otherwise} \end{cases}$$

Where x_i^{win} is the winsorized value, x_i is the observed value.

Second robustness check - ranking approach

As a final step, a ranking approach is applied. This approach splits the Member States in three groups for each indicator, with the countries in the lower third considered facing a challenge.⁽⁶⁾ Such an approach does neither take the country size nor the distribution of countries into account. Moreover, it does not involve any exact thresholds as compared to the LAF approach and different variations of it. In the ranking approach, countries with very similar indicator values might in some cases have quite different rankings in case many data points are very close to each other. This is the weakness of this approach since the level of the indicator is of importance and not only the ranking of the country.

Limitations of screening approaches

Summing-up, the following five screening approaches are applied in the next two sections: (i) standard (weighted) LAF, used as the main benchmark; (ii) LAF unweighted; (iii) LAF weighted corrected for outliers in the top and bottom 2.5% of the distribution; (iv) LAF weighted corrected for the two extrema on both sides of the distribution; (v) ranking of countries.

While the standard LAF approach and the alternative screenings applied in this paper are mechanical in nature and ensure a consistent treatment across countries, they do not take country specificities into account. Certainly, assessing countries against best practices would be also very useful but requires in-depth country-specific examination, which is outside the scope of this paper.

The mechanical nature of the screening should be borne in mind when interpreting the results. Although a Member State comes out as better than ‘LAF minus’ for a specific policy area, it may still face a challenge in that area. Hence, before firm policy conclusions can be drawn, an in-depth analysis would have to be carried out. Moreover, countries not displaying a strong tax challenge according to the screening may still require subtle policy adjustments, which would require a more detailed analysis of best practices than the benchmarking proposed in this paper. Nevertheless, the ‘LAF plus’ value might be a first – and rough – screening device for identifying countries with good practices.

⁽⁶⁾ Given the absence of data for Croatia for most indicators used, this implies a division of countries into three groups of nine Member States each.

4. GROWTH-FRIENDLY TAX STRUCTURES

In many Member States, a high tax burden on labour, especially on those groups that face a particularly weak attachment to the labour market, coexists with relatively low levels of those taxes considered less detrimental to growth, i.e. consumption taxes, recurrent property taxes and environmental taxes, as discussed in Section 2. ⁽⁷⁾ This indicates room for shifting taxes away from labour to other tax bases. Certainly, in some Member States, the fiscal consolidation constraints are so demanding that a reduction in labour taxes becomes very difficult. However, even those Member States that need to increase revenue to contribute to fiscal consolidation could consider a *relative* shift in the tax structure by raising the least detrimental taxes first and by avoiding or limiting the increase in the tax burden on labour.

Applying a preliminary horizontal quantitative screening – against common horizontal criteria and indicators used consistently across countries, this section will analyse which Member States have need and room to shift taxation or, in other words, appear to face particular challenges regarding their tax structure. As a first step, the paper will set out the screening principles (Section 4.1). The part then applies the screening systematically (Section 4.2). It analyses which countries are characterised by a fairly high tax burden on labour, either on aggregate terms or on specific labour market groups (Section 4.2.1). The labour market performance will be taken into account to qualify this assessment, when needed. As a next step, the room for shifting taxation towards consumption taxes, environmental taxes and/or recurrent property taxation will be investigated (Section 4.2.2). Then preliminary conclusions will be drawn from the screening (Section 4.2.3). Finally, the robustness of the results provided by the screening approach will be checked out, applying alternative screening benchmarks (Section 4.3).

4.1. SCREENING PRINCIPLES TO IDENTIFY A POTENTIAL NEED AND ROOM FOR A TAX SHIFT

Based on the general benchmarking approach outlined in Section 3, this section presents the quantitative screening aimed at identifying Member States that have (i) a need for a reduction in labour taxation and (ii) the availability to increase those taxes considered least detrimental to growth. In more detail, the following criteria are considered:

Need to reduce labour taxation

Labour taxation is considered problematically high if:

1a) The ‘overall tax burden on labour’ is very high. This is considered the case if either the implicit tax rate (ITR) on labour or the tax wedge at average earnings ⁽⁸⁾ are significantly above the average (above LAF minus), with the other indicator not being significantly below this average (below LAF plus).

OR

1b) The tax burden on specific labour market groups (low-income workers or second earners) is very high. This assessment is based on different tax wedge and trap indicators.

The tax burden on low-income workers is considered very high if (i) the tax wedge on low-income workers is very high *or* (ii) the inactivity trap or unemployment trap are very high, with a very high contribution from labour taxes, with the contribution from labour taxes to the other trap not being

⁽⁷⁾ Consumption taxes include excise duties on tobacco and alcohol. These are part of the so-called 'sin taxes' and meant to reduce their consumption and related health problems.

⁽⁸⁾ The IRR on labour is calculated as the ratio of taxes and social security contributions on employed labour income to total compensation of employees. The tax wedge for a specific wage level is defined as the proportional difference between the costs of a worker to their employer (wage and social security contributions, i.e. the total labour cost) and the amount of net earnings that the worker receives (wages minus personal income tax and employee social security contributions, plus any available family benefits).

significantly below the average. This analysis is carried out at 50% and 67% of the average wage (for single workers with no children) in order to take targeted measures aimed at low income households into account. A country is considered to face a more limited challenge, if the indicators are above the thresholds at one of the two income levels only.

The tax burden on second-earners is considered very high if (i) the inactivity trap is very high with a very high contribution from labour taxation *or* (ii) the low-wage trap is very high with a very high contribution from labour taxation.

If the employment level is very high (either overall or for specific groups), a very high tax burden is still an issue, but less problematic.

AND

Scope for increasing the least distortionary taxes

Increasing taxes does not necessarily point to a need to increase tax rates but could also be achieved by a broadening of tax bases, while paying attention to enhance tax compliance effectively in the short- to medium-term.

EITHER

2a) There is scope for increasing consumption taxes. This is considered to be the case if (i) the share of consumption taxes in % of GDP is significantly below the EU average, or ii) the implicit tax rate (ITR) on consumption is significantly below the EU average, or (iii) the gap between the ITR rate on labour and consumption is very high and the ITR on consumption not yet very high.

OR

2b) There is scope for increasing recurrent taxes on housing, i.e. revenue from the recurrent tax on (immovable) property in % of GDP is significantly below average.

OR

2c) There is scope for increasing environmental taxation, i.e. either revenues from environmental taxes in % of GDP or the ITR on energy are significantly below average with the other indicator not being significantly above it.

The room to increase taxes is considered limited if there is either only scope to increase recurrent property taxes or environmental taxes.

The horizontal screening applied in the paper is based on the data available in June 2013. Such data does in some cases not reflect important reforms recently adopted. The screening, therefore, needs to be supported by qualitative information on recent tax reforms where necessary.

4.2. SCREENING OF MEMBER STATES

The screening applies the approach as outlined above to identify Member States with need and room for a tax shift from labour taxes to other tax bases.

4.2.1. Need for a shift: high tax burden on labour

A high overall tax burden on labour, in particular in combination with weak labour market performance, is suggestive of a need to reduce disincentives to supply labour and to hire (labour demand).⁽⁹⁾ It should be noted that the impact of high labour taxation could be offset by an integrated approach (often called 'active labour market policies'), which provides non-financial incentives to work and helps to reduce the moral hazard related to more generous social security systems, themselves financed by a heavy tax burden on labour. Therefore, the latter could be compatible with low unemployment and high labour supply, provided that it is accompanied by well-designed active labour market policies, in particular efficient job search support, training policy and work incentives. The labour market success of the Nordic countries, despite a fairly high rate of labour taxation in most cases, is to a large extent attributable to reforms that underlined the more active approach in labour market policies with a clear job search and employment focus.⁽¹⁰⁾

Following the screening methodology outlined earlier, we will first look at the overall tax burden on labour and the overall labour market situation. Secondly, we will focus on specific labour market groups that face particular employment problems and that are at the same time considered to be rather responsive to labour supply incentives created by an increase in after-tax wage: low-skilled workers⁽¹¹⁾ and second-earners. Youth unemployment may also be affected by labour taxation, but only amongst a numerous set of other equally important factors⁽¹²⁾.

Reducing the overall tax burden on labour

On average around one half of all tax revenues (including employer and employee social security contributions) can be classified as taxes on labour, which are considered particularly detrimental to growth given their adverse impact on labour supply and on labour demand and, in the shorter run, on the cost competitiveness of national producers. Two types of indicators are available to measure the overall tax burden on labour. The ITR is a macro indicator, often used to gauge the overall tax burden on labour in the economy. In contrast, the different tax wedge indicators are micro indicators, based on the legal requirement faced by a series of hypothetical households. The analysis will consider the aggregate labour tax burden as the sum of personal income taxes and employer and employee social security contributions as well as payroll taxes. It will not analyse the composition and potential changes in the composition of labour taxes.⁽¹³⁾

If measured by the tax wedge at the average wage for full-time work (computed for a single earner without children), a particularly high tax burden on labour (above LAF minus) is identified in Belgium, Germany, France, Italy, Austria and Hungary (see Table 4.1)⁽¹⁴⁾. In all cases but Germany, the high tax burden signalled by the tax wedge is confirmed by a particularly high ITR on labour.⁽¹⁵⁾ In addition to the six Member States highlighted above, Finland, the Czech Republic and Sweden have very high ITR

⁽⁹⁾ Stringent employment protection legislation, inefficient wage-setting mechanisms, an incentives-distortive tax and benefit system and a high skill mismatch may also explain labour market malfunctioning, in addition to high labour taxation.

⁽¹⁰⁾ See Andersen and Svarer (2008), Arpaia and Mourre (2009) and Sapir (2006). To explain the difference in labour market outcomes, the latter stresses the importance of the interplay of various institutions (including the level of social protection), which could be classified into four different 'social models', namely Continental, Mediterranean, Anglo-Saxon and Nordic models.

⁽¹¹⁾ In this document, low-skilled and low wage earners are used as synonyms although it is well understood that low wage earners and low-skilled are not necessarily the same.

⁽¹²⁾ The high unemployment rates currently faced by young people is clearly linked to cyclical reasons, but also to structural problems in the education system (that, e.g., lead to high drop-out rates), and the labour market (e.g. growing skills and geographical mismatches, the level of labour costs).

⁽¹³⁾ As shown, e.g., in Arpaia and Carone (2004), shifts in the composition of labour taxation only matter in the short term, where a move from employers' to employees' social security contributions may lead to lower labour costs and higher labour demand.

⁽¹⁴⁾ When using the tax wedge for a two-earners couple with two children as a robustness check, it seems that results are generally robust.

⁽¹⁵⁾ The German ITR on labour is not among the highest in the EU, but clearly above the EU average.

Table 4.1: Tax burden on labour and overall labour market situation

Country	Employment rate (2012)	p.m. Unemployment rate (2012)	ITR on labour (2011)	Tax wedge (100% AW, 2012)
BE	67.2	7.4	42.8	56.0
DE	76.7	5.5	37.1	49.7
EE	72.1	10.1	36.2	40.4
IE	63.7	14.4	28.0	29.8
EL	55.3	24.1	30.9	41.9
ES	59.3	24.5	33.2	41.4
FR	69.3	9.5	38.6	50.2
IT	61.0	10.4	42.3	47.6
CY	70.2	11.8	26.7	-
LU	71.4	5.0	32.8	35.8
MT	63.1	5.5	25.5	29.78*
NL	77.2	4.7	37.5	38.6
AT	75.6	4.1	40.8	48.9
PT	66.5	15.9	25.5	36.7
SI	68.3	8.9	35.2	42.3
SK	65.1	13.6	31.9	39.6
FI	74.0	7.0	39.6	42.5
BG	63.0	12.0	25.5	33.6*
CZ	71.5	6.8	39.0	42.4
DK	75.4	7.0	34.6	38.6
HR	55.4	-	-	-
LV	68.2	14.8	32.0	44.4*
LT	68.7	13.3	32.0	40.7*
HU	62.1	10.8	38.4	49.4
PL	64.7	10.0	32.2	35.5
RO	63.8	7.0	31.4	44.8*
SE	79.4	7.1	39.4	42.8
UK	74.2	6.9	26.0	32.3
EU-27	70.1	9.4	35.8	43.3
EA-17	69.1	10.1	37.7	47.0
LAF plus	72.8	7.2	33.7	39.7
LAF minus	67.5	11.6	37.9	47.0

Note: Employment rate and unemployment rate (20 to 64 years), tax wedge of single earner without children at 100 % of the average wage for full-time work (AW), ITR on employed labour; * data for the tax wedge refer to 2011 in the case of Bulgaria, Greece, Lithuania, Latvia, Malta and Romania. No data is available for Croatia and no recent data for the tax wedge on labour for Cyprus.

Source: Commission services, OECD.

on labour, while at the same time displaying tax wedges above LAF plus (almost 40 %). Overall, the tax burden on labour as measured by the two indicators is considered to be particularly high in Belgium, Germany, France, Italy, Austria, Finland, Czech Republic, Hungary and Sweden (see Table 4.1).

However, it is necessary to look also at labour market outcomes to assess the urgency of a labour tax reduction. Of the aforementioned countries, Germany, Austria, Finland and Sweden have an employment rate significantly above the EU-27 average (above LAF plus) and also close to or above the Europe 2020 employment target of 75% (see Table 4.1). For these countries, the issue of high labour costs still remains but is considered to be less problematic in the screening analysis.

Table 4.2: Tax burden on low-wage earners and labour market situation of low-income earners

Country	Tax burden on low-wage earners and labour market situation of low-skilled (1)										p.m. Youth labour market performance (2)	
	Labour market performance	Disincentives to work										Unemployment rate (youth)
	Employment rate (low-skilled)	67% AW			50% AW			Unemployment rate (youth)				
		Tax wedge	Inactivity trap	Unemployment trap	Tax wedge	Inactivity trap	Unemployment trap					
2012	2012	2011	of which contribution from labour tax	2011	of which contribution from labour tax	2012	2011	of which contribution from labour tax	2011	of which contribution from labour tax	2012	
BE	59.4	50.5	66.8	36.5	90.7	36.5	42.8	68.4	27.8	87.8	27.8	19.8
DE	62.7	45.6	65.4	34.9	73.4	34.9	42.5	72.0	31.2	72.0	31.2	8.1
EE	56.3	39.2	49.7	18.8	63.5	13.5	37.9	58.5	17.0	63.5	13.5	20.9
IE	47.1	20.1	76.7	11.4	75.9	10.6	10.4	90.3	2.8	89.3	1.7	30.4
EL	56.4	38.6	21.5	21.5	60.1	21.5	37.7	20.2	20.2	71.8	20.2	55.3
ES	54.4	37.0	44.2	17.9	82.8	12.8	31.6	46.1	10.8	77.7	7.7	53.2
FR	66.6	47.1	54.7	26.1	77.2	19.4	35.6	58.5	23.2	83.2	20.2	24.3
IT	60.4	44.5	25.4	25.4	77.8	22.3	41.3	19.0	19.0	79.0	19.0	35.3
CY	68.3	-	-	-	-	-	-	-	-	-	-	27.8
LU	76.2	28.9	70.5	17.8	86.7	6.7	25.3	83.3	12.7	93.3	4.3	18.1
MT	60.0	18.6*	56.1	12.6	55.7	12.6	15.5*	66.4	9.4	65.8	9.4	14.2
NL	70.4	33.2	82.1	33.1	84.0	9.0	27.8	91.9	26.2	97.1	3.8	9.5
AT	69.0	44.2	66.1	27.6	67.4	27.6	40.0	73.5	21.8	73.5	21.8	8.7
PT	70.8	32.0	37.1	16.2	79.0	16.2	28.1	39.1	11.0	76.0	11.0	37.7
SI	63.0	38.5	59.6	28.8	89.7	9.7	33.4	64.4	23.1	85.5	5.5	20.6
SK	37.3	36.9	29.6	19.3	44.3	19.3	34.1	29.6	15.8	40.8	15.8	34.0
FI	64.9	36.7	69.0	27.5	72.2	16.1	33.1	80.8	25.5	80.8	13.5	19.0
BG	41.6	33.6*	36.6	21.6	81.6	21.6	33.6*	41.8	21.6	81.6	21.6	28.1
CZ	50.4	39.3	62.4	19.1	80.2	19.1	36.2	66.0	15.1	79.2	15.1	19.5
DK	68.4	37.0	86.6	26.5	89.1	12.2	35.7	102.2	21.5	93.9	9.4	14.1
HR	49.5	-	-	-	-	-	-	-	-	-	-	43.0
LV	59.0	43.5*	57.7	29.9	89.9	29.9	42.6*	66.0	28.8	88.8	28.8	28.4
LT	43.6	38.9*	43.5	19.9	68.5	19.9	37.1*	49.1	17.5	82.6	17.5	26.4
HU	48.3	47.6	51.3	29.6	79.6	19.6	45.1	55.9	26.8	79.6	19.6	28.1
PL	52.9	34.6	50.1	27.2	81.5	21.5	33.7	56.8	26.1	96.7	19.0	26.5
RO	59.1	43.8*	36.5	27.6	53.8	27.6	42.6*	37.9	26.1	59.0	26.1	22.7
SE	67.5	40.7	69.7	28.9	73.7	10.4	39.1	83.6	26.9	83.6	6.9	23.7
UK	63.1	28.2	64.8	21.9	64.8	21.9	24.0	74.2	18.5	74.2	18.5	21.0
EU-27	62.1	39.6	56.0	26.8	75.3	22.4	34.7	60.8	22.4	79.0	19.3	23.5
EA-17	62.5	42.9	53.6	27.8	76.9	23.4	37.3	56.9	22.9	78.9	20.1	24.1
LAF plus	64.4	36.0	49.6	24.5	72.3	19.1	31.3	52.3	19.9	75.8	15.9	18.2
LAF minus	59.8	43.2	62.5	29.2	78.3	25.7	38.1	69.4	25.0	82.3	22.6	28.8

Notes: (1) Employment rate and unemployment rate of low-skilled workers (25-54 years, pre-primary, primary and lower secondary education - levels 0-2, ISCED 1997), Tax wedge, inactivity trap and unemployment trap for single worker with no children at 67 % and 50 % of average earnings. 'Contribution from labour taxes' to the traps refers to the contribution to the respective trap in percentage points (other contributors are e.g. withdrawn benefits, social assistance, housing benefits). *Tax wedge data for the indicators measuring the disincentives to work refer to 2011 in the case of Bulgaria, Greece, Lithuania, Latvia, Malta, and Romania. No data is available for Croatia and no recent data for Cyprus. (2) Unemployment rate of young workers (15-24).

Source: Commission services, OECD.

The tax reforms recently decided or implemented are sometimes not yet reflected in the data, in particular in the case of the ITR on labour. It is, therefore, useful to supplement the relatively rough picture painted by the abovementioned indicators with information on recent tax reforms. Of those countries considered to have a very high tax burden on labour, almost all have taken some measures that affect the tax burden on labour in 2012 or the first half of 2013, affecting either personal income taxation or social security contributions. In most cases those reforms have been targeted at specific income levels or labour market groups. Therefore, the tax reforms implemented in 2012 and the first half of 2013 and affecting the tax burden on labour, are not expected to lead to a significant reduction in the tax burden indicators⁽¹⁶⁾.

Alleviating tax pressure on specific groups: the case of the low-skilled

When analysing ways to improve the labour market situation via measures on the tax side, it is important to note that the overall labour supply elasticity is rather low, or even close to zero, for some labour market groups, often characterised at the same time by high (average and marginal) effective rates of taxation. It is, therefore, essential to have a special focus on those segments of the labour market that are sensitive to financial incentives and/or face particular financial disincentives. Reducing the tax burden on labour across the board can only be expected to have a rather limited impact on overall labour supply in the long run.

⁽¹⁶⁾ See Taxation reform database: http://ec.europa.eu/economy_finance/db_indicators/taxation_reforms_database/index_en.htm for more information on recently implemented tax reforms.

The 2013 and 2014 Annual Growth Surveys⁽¹⁷⁾ also recommend to reduce the tax burden notably for low paid workers and young workers and to provide adequate tax-benefit incentives for second earners. In addition to the adverse labour supply effect, the adverse impact of taxes on labour demand is in particular felt by low-skilled and inexperienced people. In effect, given the often regressive pattern of social security contributions, labour costs will be proportionally higher at the lower end of the wage scale, which will particularly harm the labour demand for and the employability of those experiencing low productivity, such as the low-skilled (including the youth with no or limited job experience), but also second earners. On the labour supply side, second earners are often also characterised by the high opportunity cost of working (in terms of home-based activities including child care).

Looking at low-skilled workers first, we systematically use indicators measuring the tax burden on low-paid workers (the tax wedge) and the so-called 'traps' they face to (re)enter the labour market from inactivity ('inactivity trap') and unemployment ('unemployment trap'). These latter indicators take into account the reduction in benefits payments following the return to the labour market, as well as higher taxes and social security contributions paid by employees.⁽¹⁸⁾ Generally, the unemployment trap is substantially higher than the inactivity trap, as unemployment benefit payments are normally higher than social assistance payments. Table 4.2 presents the indicators at both 50% and 67% of the average wage. The indicators at the 50% level are used in addition to those at the 67% level because the former reflect measures targeted to cut labour costs for very low income levels (i.e. close to the minimum wage in countries having one).

Based on the reading of the indicators, Belgium, Germany, France, Italy, Austria, Latvia, Hungary, Romania and Sweden are faced with the challenge of reducing the tax burden on low-skilled workers at the 50% and/or 67% level.⁽¹⁹⁾ The challenge to reduce labour taxation and to lower the two traps is considered to be more limited in France as the disincentives to work are only high at the 67% level, as special measures are already in place for those at or close to the minimum wage. Such measures are mainly reflected in the indicators at the 50% level. In Sweden, on the contrary, especially high disincentives only appear at the 50% level. In the other cases, high tax burden is recorded at both income levels. As another qualifier, France, Austria and Sweden show relatively high employment rates for low-skilled workers, which mitigates the issue of high tax for the low-skilled. This qualification is reflected in the screening.⁽²⁰⁾ Lastly and as mentioned earlier, it is important to ascertain whether countries that are identified as having especially high financial disincentives for low-skilled workers have recently introduced policy measures that are not yet reflected in the indicators and could impact the assessment.⁽²¹⁾⁽²²⁾

⁽¹⁷⁾ See COM(2012) 750 final for the 2013 Annual Growth Survey, and COM(2013) 800 final – released on 13.11.2013 – for the 2014 Annual Growth Survey.

⁽¹⁸⁾ The inactivity trap measures the part of additional gross wage that is taxed away in the case where an inactive person takes up a job. In other words, it measures the financial incentives to move from inactivity and social assistance to employment. The inactivity trap is also often referred to as the participation tax rate. On the other hand, the unemployment trap measures the part of the additional gross wage that is taxed away in the form of increased taxes and withdrawn benefits such as unemployment benefits, social assistance, and housing benefits when a person returns to work from unemployment. To consider the impact of labour market changes on people's current net income, the average effective tax rates need to exclude employers' social security contributions. See Carone et al. (2004), p. 13.

⁽¹⁹⁾ In line with the screening approach, countries in which low-skilled workers face very high unemployment or inactivity traps which are mainly due to the social benefits system and not to the tax system, are not captured by the screening.

⁽²⁰⁾ For a discussion of which components of the tax burden could be reduced – which of course depends on the specific Member State – see, e.g., European Commission (2011). Generally, a reduction of employers' social security contributions has a direct impact on labour costs, at least in the short term.

⁽²¹⁾ Targeted reforms have, e.g., been carried out in Belgium and Hungary. See Taxation reform database: http://ec.europa.eu/economy_finance/db_indicators/taxation_reforms_database/index_en.htm for more information on recently implemented tax reforms.

⁽²²⁾ There are different possible ways of increasing labour supply incentives in the countries faced by high labour supply disincentives at low-wage levels and a poor labour market situation of the low-skilled. As regards the tax system (including social security contributions), positive labour supply incentives at lower income levels can, for instance, be created by lower social security contributions at low wage levels or a higher tax-free allowance, above all where transfer payments are not subject to personal income tax. Special tax schemes such as earned income tax credits (EITCs) that provide special incentives to

Alleviating tax pressure on specific groups: the case of second earners

The second group that is of particular importance is second earners in couples, who are very often female. In 2012, female employment rates were below male employment rates in all Member States with the exception of Lithuania (age group 25-54 years, see Table 4.3).⁽²³⁾ Against the EU average, the gap amounted to more than 11 ½ percentage points. Female workers are more responsive to financial incentives than male workers as regards their labour supply at both the extensive margin, i.e. the decision on whether to participate in the labour market, and the intensive margin, i.e. the decision on whether to supply an additional hour of work or whether to move from part-time to full-time work.⁽²⁴⁾ The comparatively low labour force participation of women is at least partly due to often very high negative incentive effects embedded in the tax and benefit system for second earners, as measured by average and marginal effective tax rates.⁽²⁵⁾⁽²⁶⁾

Disincentives for second earners are, to some extent, due to the benefits system but taxes (including SSC) often play an important role. Table 4.3 provides two measures for labour supply disincentives for second earners. Whereas the inactivity trap or participation tax measures labour supply incentives at the extensive margin, the low-wage trap — as a marginal effective tax rate indicator — can be used to assess the incentive effects at the intensive margin.⁽²⁷⁾ The data in Table 4.3 show that disincentives for the second earners to return to work from inactivity are high in Belgium, Germany and the Netherlands, whereas disincentives to increase the number of hours worked are high in Belgium, Germany, Italy and Denmark; in all these cases with a relatively high contribution from labour taxes.

Looking at the female employment rate as a proxy of the labour market situation of second earners in the countries with relative high disincentives, it seems that the adverse impact of the financial disincentives to take up a job is lower in Germany, the Netherlands, Finland, and Denmark. In these countries, the female employment rate is significantly better than the EU-27 average. This mitigating factor is reflected in the screening. However, it should be borne in mind that the employment rate does not capture the number of hours worked, which is another important indicator of labour underutilisation. In particular, out of these four countries with high female employment rates, the average number of hours worked is low for women in the Netherlands, Germany and Denmark (see Table 4.3), indicating disincentives to increase the number of hours worked.

One main driver for particularly high effective tax rates on second earners is the consideration of the total income of a couple — rather than individual incomes — in the calculation of taxes and benefit payments in some Member States. This ‘joint taxation’⁽²⁸⁾ can discourage labour supply at the extensive and intensive margin by increasing average and marginal effective tax rates. In Member States with individual

participate in the labour market could also be taken into consideration. Positive labour demand effects in the short run can in particular be achieved by a reduction in employers’ social security contributions. Given the rather high labour demand elasticities for low-skilled workers, reductions targeted at this group could have a strong effect on labour demand. However, these measures should avoid creating ‘low-wage traps’, often called ‘poverty traps’.

⁽²³⁾ The Lisbon Strategy had an employment target for women (15-64 years) of at least 60% as the EU average.

⁽²⁴⁾ See Meghir and Phillips (2010) for a literature review of labour supply elasticities for different labour market groups. See also Bertola et al. (2002).

⁽²⁵⁾ Other major reasons for the low employment rates of females are certainly the cost or unavailability of child care, the insufficient development of flexible work arrangements to reconcile personal and family life, such as part-time work, and cultural attitudes and social norms regarding gender roles, especially for older cohorts. See e.g. Bettio and Verashchagina (2009), Jaumotte (2003), and Buddelmeyer et al. Ward (2008).

⁽²⁶⁾ Although not analysed here, single mothers with (two) children face particularly high disincentive effects, which also negatively impacts on female labour market participation.

⁽²⁷⁾ The low-wage trap as an effective marginal tax rate is defined as the rate at which taxes are increased and benefits withdrawn as earnings rise due to an increase in work productivity. This kind of trap is most likely to occur at relatively low wage levels due to the fact that the withdrawal of social transfers (mainly social assistance, in-work benefits and housing benefits), which are usually available only to persons with a low income, adds to the marginal rate of income taxes and social security contributions.

⁽²⁸⁾ Joint taxation in income taxation can be introduced via different aspects of the tax system, either via full joint taxation or through the transferability of parts of taxable income to the spouse or of tax allowances and tax credits in countries with otherwise separate income taxation.

taxation, female employment rates seem to be closer to male rates. Currently, Germany, France, Ireland, Luxembourg and Portugal apply a mandatory or default system of joint taxation of couples, whereas in Spain separate taxation is the default system but an option for joint taxation is available. Personal income taxation in a few other Member States includes at least some elements of joint taxation (e.g. Greece and Belgium), while several other Member States apply a pure system of individual taxation. Moving away from joint taxation and in the direction of individual taxation would be important to increase work incentives for second earners. ⁽²⁹⁾ No significant reforms have been implemented in the EU Member States in the recent past.

Table 4.3: Gender specific labour market situation and tax burden on second earners

Country	Labour market performance			Disincentives to work			
	Employment rate - female	p.m. Employment rate - male	p.m. Average working hours - female	Inactivity trap (67% AW)		Low-wage trap (33%-67% AW)	
	2012	2012	2012	2011	of which contribution from labour tax	2011	of which contribution from labour tax
BE	73.9	84.5	32.8	47.3	47.3	59.0	59.0
DE	78.2	88.1	30.5	47.0	43.9	45.9	45.9
EE	75.5	83.1	37.5	24.0	24.0	24.0	24.0
IE	64.6	74.5	30.9	47.0	16.1	39.1	29.7
EL	53.8	74.0	39.1	21.5	21.5	25.2	25.2
ES	61.3	71.1	34.8	23.8	23.8	23.7	23.7
FR	76.0	85.8	34.6	32.2	25.4	34.0	27.2
IT	59.1	81.6	32.8	40.4	31.5	48.4	41.7
CY	74.0	83.3	38.1	-	-	-	-
LU	75.0	91.0	33.4	33.7	24.2	30.8	30.8
MT	55.2	89.5	34.7	30.7	16.5	20.5	17.8
NL	78.9	88.6	24.5	46.1	38.7	41.3	45.2
AT	81.1	89.6	32.7	30.0	30.0	40.3	40.3
PT	72.5	78.4	37.4	20.4	19.8	28.9	27.7
SI	81.0	85.4	38.5	51.9	28.8	51.6	35.3
SK	69.6	83.0	39.5	25.3	25.3	31.4	29.9
FI	79.4	84.4	34.9	27.3	27.5	32.2	31.1
BG	71.8	74.3	40.4	21.6	21.6	21.6	21.6
CZ	74.6	90.9	38.9	34.0	27.3	12.8	12.8
DK	79.1	84.6	31.2	75.9	27.8	51.7	40.1
HR	65.5	71.8	-	-	-	-	-
LV	75.1	77.8	37.9	35.1	35.1	33.3	33.3
LT	79.2	78.1	37.3	46.7	19.9	41.7	26.4
HU	68.9	80.4	38.5	29.6	29.6	37.8	37.8
PL	71.5	82.9	38.4	42.5	24.0	36.4	26.4
RO	67.8	81.7	39.6	32.0	28.5	31.9	31.9
SE	82.5	87.8	34.2	22.1	28.9	28.6	34.5
UK	74.5	86.6	31.2	46.4	21.9	36.6	32.0
EU-27	72.6	84.3	32.8	39.2	30.7	38.8	35.8
EA-17	71.8	83.8	32.6	37.8	32.9	40.0	37.4
LAF plus	75.6	86.3	34.0	35.1	27.2	35.2	32.1
LAF minus	69.6	82.3	31.6	43.3	34.2	42.4	39.6

Notes: (1) Employment rate for age group 25-54. Female working hours refers to average number of usual weekly hours of employed persons in main job. Inactivity trap for second earner in two-earner couple with two children, principal earner with 67% of average wage, second earner with 67%; low-wage trap for second earner in two-earner couple with two children, principal earner with 67% of average wage, second earner moving from 33% to 67% of average wage. 'Contribution from labour taxes' refers to the contribution to the respective trap in percentage points (other contributors are e.g. withdrawn benefits, social assistance, housing benefits). Inactivity includes household work. No data is available for Croatia and no recent data for Cyprus.

Source: Commission services, OECD.

4.2.2. Scope for tax shifting towards taxes considered less detrimental to growth

Given the tight budgetary situation in most Member States, reductions in labour taxation need to be compensated for by increases in revenues from other taxes. It is, therefore, important to analyse how much scope exists in Member States for shifting the tax burden to other economic activities and tax bases. Member States are considered to have room for shifting taxes away from labour if their tax burden is relatively low in at least one of the following three areas: i) consumption taxes, ii) recurrent property taxes or iii) environmental taxes. All of these types of tax have been found to be among those which are the least detrimental to growth. Inheritance taxes are also often considered to cause relatively little distortion, but their size is fairly limited in most Member States and they are politically charged given the intergenerational impact and the issue of business transmission.

⁽²⁹⁾ Simulations carried out for countries currently applying systems of joint taxation indicate that a move to separate taxation would increase female labour market participation as well as the hours worked. See Bettio and Verashchagina (2009) for references to respective studies.

Table 4.4: Consumption taxes and indirect taxes

Country	p.m. Share of consumption taxes in total taxation	Consumption taxes as % of GDP	ITR on consumption	Gap: ITR on labour and consumption	p.m. Share of indirect taxes in total taxation		p.m. Indirect taxes as % of GDP	
	2011			2011	2013	change 2008-13	2013	change 2011-13
BE	24.2	10.7	21.0	21.8	28.2	-0.1	12.8	0.2
DE	28.2	10.9	20.1	17.0	28.3	0.5	11.3	0.0
EE	41.3	13.6	26.1	10.1	43.3	5.7	14.1	0.3
IE	34.8	10.1	22.1	5.9	41.9	0.3	10.9	-0.2
EL	38.5	12.5	16.3	14.7	38.4	-0.3	12.5	-0.3
ES	26.9	8.4	14.0	19.2	33.4	3.7	10.7	0.9
FR	25.3	11.1	19.9	18.7	33.4	-1.1	15.5	0.2
IT	25.3	10.8	17.4	24.9	34.0	1.9	15.0	1.0
CY	36.2	12.7	17.7	8.9	42.5	-3.3	14.1	-0.4
LU	27.3	10.2	27.2	5.5	32.5	-0.6	12.6	0.8
MT	40.1	13.4	19.0	3.6	39.8	-2.5	13.5	-0.3
NL	30.4	11.7	26.3	11.2	30.1	-1.0	12.0	0.5
AT	27.9	11.7	21.2	19.6	33.7	0.7	14.5	0.2
PT	36.7	12.2	18.0	7.4	39.3	-3.6	13.3	-0.4
SI	37.7	14.0	23.0	12.2	39.2	1.6	14.6	0.5
SK	36.9	10.5	18.7	13.3	33.5	-2.0	9.8	-0.7
FI	32.2	14.0	26.4	13.2	32.9	3.0	14.6	0.5
BG	51.9	14.1	22.4	2.2	54.0	0.0	15.5	1.0
CZ	32.6	11.2	21.4	17.5	34.8	4.2	12.3	0.8
DK	31.6	15.1	31.4	3.1	34.2	-1.4	16.9	0.1
HR*	-	-	-	-	-	-	-	-
LV	38.3	10.5	17.2	14.8	42.2	5.0	11.4	0.1
LT	43.4	11.3	17.5	14.5	40.3	2.4	11.0	-0.6
HU	39.2	14.5	26.8	11.5	47.7	8.9	18.6	1.9
PL	39.1	12.7	20.8	11.4	39.7	-1.6	12.7	-1.1
RO	44.5	12.6	21.6	9.8	46.2	4.5	13.3	0.3
SE	28.8	12.8	27.3	12.1	41.7	3.4	18.5	0.0
UK	33.1	11.9	19.5	6.5	36.3	5.2	13.5	0.2
EU-27	29.3	11.2	20.1	15.7	33.7	1.4	13.4	0.3
EA-17	27.7	10.8	19.4	18.2	32.1	0.6	13.1	0.3
LAF plus	31.1	11.7	21.4	13.3	35.4	2.3	14.3	0.5
LAF minus	27.5	10.7	18.7	18.1	32.0	0.4	12.6	0.1

Note: (1) The column 'gap' shows the difference between the ITR on labour and the ITR on consumption. No data by economic function is available for Croatia. Data for indirect taxes is based on the 2013 Commission spring forecast.

Source: Commission services.

Consumption taxes

By far, the broadest available tax base to shift labour tax is consumption. Firstly, as measured by the share of consumption taxes in GDP in 2011, revenues from consumption taxes were particularly low in Belgium, Ireland, Spain, Luxembourg, Slovakia and Latvia (see Table 4.4).⁽³⁰⁾ The share of consumption taxes in GDP does not, however, measure the 'true' tax burden on consumption itself. The tax burden for one unit of consumption is measured by the ITR on consumption. Secondly, a comparison of the ITR across Member States provides further evidence of potential for shifting the tax burden towards consumption. In addition to those countries with a low share of consumption taxes in GDP, Greece, Italy, Cyprus, Portugal and Lithuania had a tax burden on consumption in 2011, as measured by the ITR on consumption, significantly below the EU-27 average. Thirdly, some room for shifting taxes from labour to consumption taxes can also be indicated by a large difference between the tax burden on labour and consumption. A very high gap between the ITR on labour and the ITR on consumption is indicative of room for shifting, provided the ITR on consumption is not already very high. France and Austria had a large differential between the tax burden on labour and consumption (as measured by the difference between the two ITRs), which was clearly above the EU-27 average in 2011. Hence, there appears to be potential room for shifting taxation from labour to consumption in these two countries as well. Based on the three criteria, thirteen countries are found to have room for shifting towards consumption taxes.

⁽³⁰⁾ For Ireland, the rather low value is also due to a high share of multinational companies in the Irish economy and a comparison of consumption taxes to GNI would provide a more favourable picture. Data for Spain does not reflect the substantial VAT increase implemented in 2012.

However, as most of the data used in the screening are only available up to 2011, there is a need to take into account the often substantial tax reforms implemented in 2012 and in the first half of 2013, which are not reflected in the data yet. As a rough proxy for the impact of these changes on revenues from consumption taxes, we used the projected change in revenues from indirect taxes over the 2011-13 period, according to the Commission Spring 2013 forecast.⁽³¹⁾ Among those countries found to have the potential to increase consumption taxes, revenues from indirect taxes are forecast to increase by more than one percentage point in Italy and by more than 0.5 percentage points in Spain and Luxembourg⁽³²⁾. Assuming that these increases are confirmed and indeed linked to higher consumption taxes, they would tend to limit the actual scope for future increases. This points to the need for further country-specific analysis, as this dimension is not fully factored into the screening. When considering increases in consumption taxes, it is important to examine which sub-categories (VAT, excise duties on alcohol and tobacco or energy) Member States have a particular scope for increasing revenues.⁽³³⁾

Property taxation

A second category of less growth-harmful taxation is recurrent property taxes, although substantially smaller in terms of revenue amount than consumption taxes. Recurrent taxes on real estate and land are generally considered by the economic literature to have a relatively smaller adverse effect on the allocation of resources in the economy than other taxes, since they little alter economic behaviour because of the immovable nature of this type of goods. The tax base is also more stable and thus more predictable than tax revenue obtained from labour or, in particular, corporate taxes. One explanation for this is that cyclical fluctuations in property values are comparatively small. The stability is also reinforced by the fact that many tax systems do not update property values (the tax base) regularly. This could, on the other hand, risk leading to erosion of the tax base over time due to inflation if no adjustments are made. Another advantage of the recurrent property tax is that it is more difficult to evade because its base is immovable and visible.⁽³⁴⁾

The reliance on property taxation varies considerably between Member States, as available data indicate. Revenues ranged from more than 4% of GDP in the UK in 2011 to less than ½ % of GDP in Estonia (see Graph 4.1). Recurrent taxes on immovable property represent a large share of these revenues in many Member States (ranging from 0% to more than 3% of GDP). In terms of revenue, receipts from recurrent taxes on immovable property can be considered particularly low in 19 Member States (see Graph 4.1 and Table 4.6). Those Member States could raise revenue by 0.4 percentage points or more by aligning the importance of this tax to the EU-27 average.⁽³⁵⁾ It should be recalled that the revenue from the tax on imputed rent, which is applied in a limited number of countries, is not included in the indicator of recurrent taxes on immovable property. This could explain the very low revenue from recurrent taxes on immovable property in some countries (e.g. in Luxembourg and the Netherlands).⁽³⁶⁾

Revenue from recurrent property taxes could, first of all, be increased by aligning the cadastral values of housing to their market values. Increasing tax rates might be considered as a second step. Accompanying

⁽³¹⁾ Indirect taxes are broader than consumption taxes as, under ESA 95, indirect taxes also include revenues from other taxes, in particular large parts of property tax revenues, some additional smaller environmental taxes, stamp taxes and payroll taxes.

⁽³²⁾ The increase in the standard VAT rate in Italy foreseen as from July 2013 has recently been postponed to October 2013 by the Council of Ministers.

⁽³³⁾ The scope for increases in environmental taxes is discussed below.

⁽³⁴⁾ See OECD (2010) and Johansson et al. (2008) for a discussion on property taxes.

⁽³⁵⁾ The high number of countries found to have revenues from recurrent taxes on property, can be explained by very high revenues from this type of tax in the UK, but also in France. Section 4.3 below analyses in how far the results of the screening are driven by such 'outliers'.

⁽³⁶⁾ Data for recurrent property taxes does not include fees levied by communities for specific services.

measures might be needed – at least temporarily – to address the difficult situation of homeowners with low income (and with illiquid assets).⁽³⁷⁾

Graph 4.1: Revenues from property taxation, 2011 (in % of GDP)



Note: Ordered by revenues from recurrent property taxes. 'Other taxes on property' includes taxes on net wealth, inheritance, gifts and other property items as well as financial and capital transactions. Data does not include PIT on imputed rents. No data is available for Croatia.

Source: Commission services.

Environmental taxes

The third tax category which is generally considered to be less detrimental to growth and that could contribute to financing a tax shift is environmental taxation. However, the scope for using environmental taxation to raise revenue and shift taxes is limited due to its relatively small base vis-à-vis labour taxation. Moreover, another important goal of green taxation in addition to raising revenue – if not its primary goal – is to contribute to meeting the objectives of environmental policies, such as reducing CO₂ emissions and pollution.⁽³⁸⁾ This might lead to tax base erosion implied by the elasticity of the environmental tax base to tax rate changes. Nevertheless, there is potential to raise revenue both through reducing tax expenditure in this area, i.e. by reforming environmentally harmful subsidies, and through tax rate increases.

Two indicators are used for the assessment, namely the share of environmental tax revenues in GDP and the implicit tax rate on energy⁽³⁹⁾ (see Table 4.5). Both indicators have their limitations. Environmental (or energy) tax revenue as a % of GDP does not take into account the level of energy consumption/intensity in a country and, therefore, does not measure a 'true' tax burden. In the case of the implicit tax rate on energy, it is not the whole base (level of energy consumption) that is actually taxed: i.e. transport is heavily taxed in most countries, while energy used for heating and industrial production is tax-exempt or taxed much less. Therefore, Member States with a large low-taxed industrial sector and with low or untaxed heating use appear 'bad' in relative terms. Moreover, an increased use of (untaxed) renewable energy over time (as set out in the energy/climate policy) leads to a lower value of the indicator and hence a weaker performance.

Based on the criteria outlined in Section 4.1 and the data shown in Table 4.5, Belgium, Spain, France, Austria, Slovenia, Slovakia, Czech Republic, Latvia, Lithuania, Hungary, Poland and Romania seem to have room for increasing revenues from environmental taxes. However, some countries have increased fuel taxes recently and those increases are not reflected in the data yet.

⁽³⁷⁾ In addition, as property taxes often accrue to the local level of government, the division of revenue and/or the transfer systems between local and central government might need to be adjusted.

⁽³⁸⁾ Environmental taxation also has the advantage that it reduces the cost of environmental policy in relation to other non-market based policy instruments.

⁽³⁹⁾ The ITR on energy is calculated as the ratio between total energy tax revenues and final energy consumption.

Table 4.5: Tax burden on the environment

Country	Environmental taxes, % of GDP, 2011	Implicit tax rate on energy, 2011
BE	2.1	127.2
DE	2.3	229.6
EE	2.8	137.5
IE	2.6	209.2
EL	2.7	223.8
ES	1.6	157.6
FR	1.8	198.1
IT	2.8	270.3
CY	2.9	188.1
LU	2.4	222.5
MT	3.2	240.6
NL	3.9	235.9
AT	2.4	183.1
PT	2.4	174.0
SI	3.4	205.7
SK	1.8	103.2
FI	3.1	156.0
BG	2.9	105.8
CZ	2.3	139.3
DK	4.1	382.2
HR*	-	-
LV	2.5	98.2
LT	1.7	105.9
HU	2.5	119.8
PL	2.6	122.5
RO	1.9	99.6
SE	2.5	244.2
UK	2.6	245.0
EU-27	2.4	215.1
EA-17	2.3	212.2
LAF plus	2.6	234.9
LAF minus	2.2	195.3

Note: No data is available for Croatia.

Source: Commission services.

4.2.3. Summary of the findings on the potential for tax shifting

Based on the screening summarised in Table 4.6, Belgium, France, Italy, Latvia, Hungary⁽⁴⁰⁾ and Romania, in particular and, to a lesser extent, Germany, the Netherlands, Austria, Finland, the Czech Republic and Sweden appear to face the challenge of reducing the tax burden on labour (either overall or for specific groups) and at the same time appear to have room to increase those taxes which are considered less detrimental to growth. Thus, these Member States could analyse in greater detail whether to shift the tax burden away from labour and if so, how. The picture provided for the Member States may not be fully up to date given the backward looking character of most of the indicators used.

The following conclusions emerge as to enhancing the quality of taxation through tax shifting. In five countries (Belgium, France, Italy, Austria and Latvia) a high overall tax burden on labour is combined with relatively low taxation of consumption, which may suggest some scope for tax shifting. In Germany, Italy, Austria, Latvia, Hungary, Romania and Sweden, the labour tax burden might be alleviated somewhat through shifting taxes towards recurrent taxes on property and in particular housing. Moreover, in Belgium, France, Austria, Czech Republic, Latvia, Hungary and Romania, an increase in environmental taxation might be considered with the aim to contributing to a lowering of labour taxes.

The assessment framework allows nuancing the mechanical identification of countries with need and room for shifting, by signalling borderline cases (as indicated by brackets in Table 4.6). They could be either due to (i) a good labour market performance (either overall or for the specific groups facing a high tax burden on labour), (ii) a high tax burden on labour only at specific income levels or (iii) a limited room to shift (in case they are found to have either only room to increase recurrent property taxes or environmental taxes). Countries for which a need but no room for a tax shift has been identified, could

⁽⁴⁰⁾ Targeted measures in force in Hungary since 2013 reducing employer SSC for vulnerable groups are not reflected in the tax burden data underlying the assessment.

consider re-profiling labour taxation away from 'specific groups' (in particular low-skilled and second-earners).

In their analysis, Member States also need to take into account the effect of such a shift on tax compliance. Moreover, they should take the effect on income redistribution into consideration. ⁽⁴¹⁾ It is also important to gauge the purchasing power loss against the employment gain brought about by lower labour taxes. Finally, in all the possible cases where a tax shift from labour to consumption seems feasible, the impact on inflation needs to be considered, especially the risk of second-round effects. In particular, in countries where wage increases are linked to inflation, a shift from direct to indirect taxes may not lead to the desired reduction in labour costs in real terms.

Table 4.6: Overview: tax structure indicators

Country	High tax burden on labour				Potential to shift				Need and room for tax shift
	Overall	Specific groups - low skilled	Specific groups - second-earners	Need to reduce labour taxation	Consumption	Recurrent housing	Environment	Room to shift	
BE	X	X	X	X	X		X	X	X
DE	(X)	X	(X)	X		X		(X)	(X)
EE						X		(X)	
IE					X			X	
EL					X			X	
ES					X		X	X	
FR	X	(X)		X	X		X	X	X
IT	X	X	X	X	X	X		X	X
CY	-	-	-	-	X	X		X	-
LU					X	X		X	
MT						X		(X)	
NL			(X)	(X)					
AT	(X)	(X)		(X)	X	X	X	X	(X)
PT					X	X	X	X	
SI						X		(X)	
SK					X	X	X	X	
FI	(X)			(X)		X		(X)	(X)
BG						X		(X)	
CZ	X			X		X	X	X	X
DK			(X)	(X)					
HR	-	-	-	-	-	-	-	-	-
LV		X	-	X	X	X	X	X	X
LT					X	X	X	X	
HU	X	X		X		X	X	X	X
PL							X	(X)	
RO		X		X		X	X	X	X
SE	(X)	(X)		(X)		X		(X)	(X)
UK									

Note: (X) depicts borderline cases. Member States are considered to have a room to shift if consumption tax indicators are very low or both recurrent property taxes and environmental taxes are low. Member States are considered to have limited room for a tax shift if only either recurrent property taxes or environmental taxes are low. Croatia is not covered by the screening approach, while Cyprus is not included in the analysis for the need to reduce labour taxation.

Source: Commission services.

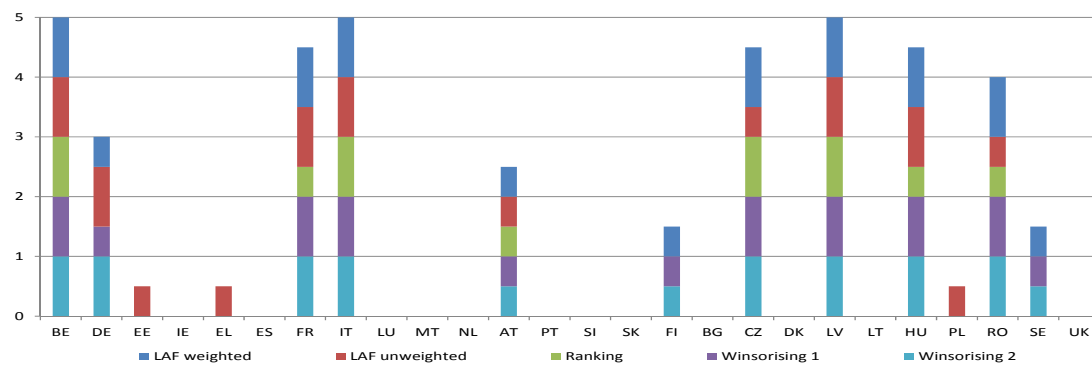
4.3. ROBUSTNESS CHECK: RESULTS USING ALTERNATIVE SCREENING BENCHMARKS

Applying the four alternative screening benchmarks outlined in Section 3 allows to check if the challenges are confirmed. Table 4.7 shows – in addition to the results of the standard LAF approach – the results of the alternative screening approaches. The outcome of the different screening approaches – following the presentation in Table 4.6 – can be found in the Annex. All those Member States that are identified to face a challenge based on the standard LAF approach, are confirmed by at least two of the alternative approaches. Some (limited) differences in the Member States identified appear when using unweighted LAF and the ranking approach. These differences, which only affect borderline cases in the standard approach, are no surprise since these two alternative approaches do not take the economic size of Member States into account.

⁽⁴¹⁾ One common objection to replacing income tax with a consumption tax is that the latter tends to be regressive, since people with low incomes spend a higher percentage of their incomes than people do with higher incomes. However, the regressive nature of the VAT tax has been called into question by several studies. For a critical discussion, see e.g. Caspersen and Metcalf (1994).

Looking at the individual benchmark approaches in more detail, the unweighted LAF approach identifies three additional countries with limited room and need for a tax shift, namely Estonia, Greece and Poland, as compared with the standard LAF approach. To put it very generally, this is due to the fact that most large Member States have a relative high tax burden on labour, which leads to a higher 'LAF minus' threshold in the standard LAF as compared with the unweighted LAF approach. In other words, large countries are less likely to be identified as being a poor performer in the standard LAF approach since they mechanically influence the benchmark in their direction. Applying the standard LAF approach, these three countries were only found to have (limited) room but no need to shift taxation, while the unweighted LAF approach also identifies (limited) need. On the other hand, Finland and Sweden are not found to have room to shift when applying the unweighted LAF approach, whereas the need to shift remains.

Graph 4.2: Need and room for tax shift: outcome of different screening approaches – summary of robustness checks



Note: Based on Table 4.6, the graph shows in how many screening approaches a Member State is found to have a room and need for a tax shift. In case of an '(x)' in the screening table, ½ a point is attributed. Cyprus and Croatia are not covered by the screening.
 Source: Commission services.

When using the ranking approach, Germany and Sweden are no longer considered to have (limited) need and room for a tax shift. While the need for a shift remains in both cases, the ranking approach does not identify a room to shift to recurrent property taxation. Moreover, France, Hungary and Romania are only found to have limited room to shift in the ranking approach.

Correcting for the outliers (using the two approaches as explained in Section 3) confirms the standard LAF results and, in other words, shows that outliers do not drive the results of the screening. The last two columns of Table 4.7 show that the results of the standard LAF approach are not driven by outliers at the extreme ends of the distribution. This could, for instance, have been the case for the assessment of the possibility to raise revenue with recurrent property taxation, with one of the largest Member States having a very high value, namely the UK. However, correcting for outliers in this case only leads to a rather limited change of the threshold LAF minus, not affecting the screening result. ⁽⁴²⁾

In addition to the differences spotted above, some countries are identified to have a limited room and need to shift in the standard LAF approach, but a full room and need to shift in one or more of the other screening approaches or vice versa.

Graph 4.2 indicates how many of the five screening approaches used in the paper find both need and room for a tax shift away from labour in a given Member State. It shows that three countries are identified to have a full need and room to shift under all approaches (Belgium, Italy Latvia), while five more

⁽⁴²⁾ Replacing the UK value for revenue from recurrent property taxes with the critical windsorising thresholds (to remove the impact of outliers) does not strongly affect the value of 'LAF minus' used in the screening. On the one hand, the ensuing reduction in the GDP-weighted mean has a downward effect on the value of LAF minus. On the other hand, the windsorising method reduces the standard deviation, which has an upward and offsetting effect on the value of LAF minus.

countries are identified to have some limited need and room for shift in all approaches (France, Austria, the Czech Republic, Hungary and Romania). In contrast, almost half of the EU countries do not seem to have need and room for a tax shift in any of the five approaches considered (Ireland, Spain, Luxembourg, Malta, the Netherlands, Portugal, Slovenia, Slovakia, Bulgaria, Denmark, Lithuania and the UK).

While Germany seems to have some need and room for shifting taxes according to several approaches (but not all), the signal given by Graph 4.2 for Estonia, Greece, Finland, Poland and Sweden is more mixed and there seems to be a weaker case for a tax shift in the absence of further investigations.

Table 4.7: Need and room for tax shift: outcome of different screening approaches – robustness check

Country	LAF weighted	LAF unweighted	Ranking	Windsorising cap at 5%	Windsorising extrema
BE	X	X	X	X	X
DE	(X)	X		(X)	X
EE		(X)			
IE					
EL		(X)			
ES					
FR	X	X	(X)	X	X
IT	X	X	X	X	X
CY	-	-	-	-	-
LU					
MT					
NL					
AT	(X)	(X)	(X)	(X)	(X)
PT					
SI					
SK					
FI	(X)			(X)	(X)
BG					
CZ	X	(X)	X	X	X
DK					
HR	-	-	-	-	-
LV	X	X	X	X	X
LT					
HU	X	X	(X)	X	X
PL		(X)			
RO	X	(X)	(X)	X	X
SE	(X)			(X)	(X)
UK					

Note: '(X)' depicts borderline cases. Cyprus and Croatia are not covered by the screening approach.

Source: Commission services.

5. CONSOLIDATION ON THE REVENUE SIDE

As discussed in Chapter 2, many EU Member States face particular consolidation challenges in the wake of the crisis, both in the short and long run. Significant measures have already been undertaken in the recent past, but additional measures will be needed in many Member States to restore the sustainability of public finances. A contribution from the revenue side might also be required in some cases in the future, in addition to necessary effort on the expenditure side.

Member States that are subject to an economic adjustment programme (Cyprus, Greece and Portugal, including Ireland at the time when the analysis was conducted) are excluded from the analysis in the section. Indeed, the fiscal sustainability indicators used in this sub-section cannot be as precise as the detailed and frequent monitoring of debt sustainability carried out by the European Commission, the IMF and the ECB under an adjustment programme. The indicator values for these countries will nevertheless impact the outcome of the screening exercise as they are included in the calculations of the benchmark, i.e. 'LAF plus' or 'LAF minus'.

5.1. SCREENING PRINCIPLES TO IDENTIFY THE POTENTIAL NEED AND SCOPE FOR REVENUE-BASED CONSOLIDATION

A quantitative screening on the basis of selected indicators is used to identify Member States that might consider using taxation – in addition to expenditure control – to consolidate their public finances and steer them onto a more sustainable path. The following screening criteria are considered to identify both a strong need for consolidation and the availability of 'tax space'.

Fiscal sustainability problems

The existence of a potential need for higher tax revenues to help consolidation is assessed on the basis of two commonly accepted indicators of fiscal sustainability, the S1 and S2 indicators. The main indicator for *long-term* fiscal sustainability, referred to as 'S2' (*'ageing-induced fiscal risks'*), indicates the permanent adjustment of the fiscal deficit (as % of GDP) that is required to stabilise the debt level in the long term, also taking into account the additional expenditure brought about by an ageing population.⁽⁴³⁾ The indicator of *medium-term* fiscal sustainability, referred to as 'S1' (*'debt compliance risk'*), corresponds to the required adjustment in the budget balance (as % of GDP) to achieve a general government gross debt of 60 % of GDP — the debt threshold in the Treaty — by 2030. The higher these indicators are, the less sustainable the level of public debt is. The indicators are explained further in Box 1.

Fiscal sustainability is considered problematic, if:

1a) The indicator of the fiscal sustainability gap in the medium-term, 'S1', is high (more than 3, i.e. at the very top of the indicator distribution).

OR

1b) The indicator of fiscal sustainability gap in the long-term, 'S2', is high (more than 6, i.e. at the very top of the indicator distribution).

AND

⁽⁴³⁾ For example, the value of 2.9 for the EU-27 indicates that, taking into account the current budgetary position and the additional expenditure brought about by an ageing population, Member States would have to tighten their fiscal stances, in terms of the structural primary balance, by an average of 2.9% of GDP, for their public finances to return to a sustainable path in the long run.

Box 5.1: Fiscal sustainability – the S1 and S2 indicator

S1 and S2 are the two most frequently used sustainability indicators. They are part of Commission's multidimensional approach for assessing the scale and the scope of the fiscal sustainability challenges. They are presented in detail in the "*Fiscal Sustainability Report 2012*" published by the European Commission (DG ECFIN, see European Commission, 2012c).

The S1 indicator ('debt compliance risk') captures the medium-term fiscal challenges, identifying fiscal gaps related to the excess of projected age-related and non-age-related expenditure, notably on pension, health care and long-term care, over projected revenue together with any gap with respect to the steady adjustment in the structural primary balance up to 2020, to bring the debt-to-GDP ratio down to 60% of GDP by 2030. Specifically, one component of the S1 indicator corresponds to the gap between the current (or initial) structural primary balance and the debt-stabilising primary surplus to ensure sustainability. It also includes a component dealing with the cost of ageing estimated by the change in age-related spending in the 2012 Ageing Report. This component is the additional adjustment to the primary balance required as a result of these future expenses until 2030. Finally, the S1 indicator includes an additional component, which also depends directly on the debt requirement set at the end of the time period (60% of GDP in 2030). For countries with public debt above 60% of GDP initially, the required adjustment to reach the target debt by 2030 (DR) will increase the indicator. By contrast, for countries with current debt below 60%, the DR component will be negative irrespective of pressures on the budget stemming from long-term trends, and will reduce the overall value of the fiscal gap.

The S2 indicator ('ageing-induced fiscal risks') captures long-term fiscal challenges, identifying fiscal gaps related to the excess of projected age-related and non-age-related expenditure, specifically on pension, health care and long-term care, over projected revenue together with any gap with respect to the primary balance needed to ensure that the debt-to-GDP ratio is not on an ever-increasing path. Specifically, one component of the S2 indicator corresponds to the gap between the current (or initial) structural primary balance and the debt-stabilising primary surplus to ensure sustainability. In addition, it includes a component which corresponds to the cost of ageing estimated by the change in age-related spending in the 2012 Ageing Report. This component is the additional adjustment to the primary balance required as a result of these future expenses over an infinite horizon. This condition is also known as the 'government's inter-temporal budget constraint'.

Availability of tax space

In order for the revenue side of the budget to contribute to fiscal consolidation, a Member State should have some 'tax space', i.e. room to increase tax revenues. This tax space depends on various factors, including the overall tax level, the tax structure (i.e. the share of least distortionary taxes) and the existence of 'tax fatigue' (defined by substantial past tax increases and also assessed against the backdrop of the remaining consolidation challenge). In the screening applied in this paper, a Member State is considered to have 'tax space' if:

2) *There is 'overall tax space' currently available* as indicated by a relatively low tax-to-GDP ratio (including social contributions), i.e. a ratio significantly below average/below LAF plus. ⁽⁴⁴⁾ This main criterion needs to be met in conjunction with one of the two qualifying criteria:

AND EITHER

3a) *There is scope for increasing the least distortionary taxes* (namely consumption taxes, environmental taxes and recurrent property taxes; see Section 3.1 for details of the screening for this criterion).

⁽⁴⁴⁾ This approach is rather conservative. An alternative screening based on an alternative assumption is presented in the robustness check section.

OR

3b) The tax burden has not increased substantially in the recent past or, in the case of a substantial increase, the consolidation need is considered to be high. The tax burden is considered not to have been increased substantially in the past (no 'tax fatigue') if there has been neither a marked increase in the cyclically adjusted tax-to-GDP ratio ('top down approach') nor a high level of discretionary revenue measures⁽⁴⁵⁾ in the period 2009-2013 ('bottom up approach'). In both cases LAF minus is used as a threshold. The discretionary revenue measures are used as an additional indicator as the change in the cyclically-adjusted tax burden may underestimate the magnitude of the discretionary tax increases undertaken in some Member States over this time period due to composition effects. The amount of discretionary revenues measures, however, also takes into account changes in non-tax revenues.

Moreover, a country is also considered not to have experienced a strong rise in its tax burden if the increase in the tax burden has been very high but the distance of the structural deficit to the medium-term budgetary objective (MTO) is above the EU average indicating a high remaining consolidation need. The MTO represents a budgetary position that safeguards against the risk of breaching the 3 % of GDP threshold under the Treaty and ensures the long-term sustainability of public finances. The idea behind this 'exit' clause is that, in case of high deviation from the MTO, a possible tax fatigue cannot indeed justify to slow down the necessary consolidation effort on the revenue side so as to bring public finance back onto a sustainable path in the short to medium run.

A low current tax-to-GDP ratio in conjunction with a high fiscal sustainability gap does not necessarily point to a need to change the tax code per se (by increasing tax rates or broadening tax bases). Higher tax revenues might also be achieved by improving tax compliance/administration and fighting tax evasion, without changing the tax rules. Similarly, the tax increases implemented in the recent past may not lead to equivalent increases in tax-to-GDP ratios due to (higher) tax evasion and Laffer-Curve effects (reduction of tax receipts induced by the negative feedback of higher tax rates on tax bases, often proxied by output and employment).

The horizontal screening applied in the paper is based on the data available in June 2013. Such data does in some cases not reflect important reforms recently adopted. The screening, therefore, needs to be supported by qualitative information on recent tax reforms where necessary.

5.2. APPLICATION OF SCREENING

5.2.1. Fiscal sustainability and consolidation needs

The first condition for increasing revenues to support budgetary consolidation is a need for sizeable fiscal consolidation, which suggests that reining in expenditure may not be sufficient, although necessary. Based on the approach outlined in the previous section, Belgium, Spain, Luxembourg, Malta, the Netherlands, Slovenia, Finland and the UK face strong consolidation challenges due to serious sustainability issues in the medium run or the long run. In these countries either the S1 indicator (medium-term sustainability) is above 3, the S2 indicator (long-term sustainability) above 6 (see Table 5.1). All of these countries are characterised by a S2 indicator above 6, with the exception of Spain where the value is slightly below the threshold. Regarding the S1 indicator, all Member States with the exception of Finland and Luxembourg are above 3, with the value for Luxembourg being negative.

⁽⁴⁵⁾ For a more detailed analysis of discretionary tax measures see Princen et al. (2013).

Table 5.1: Sustainability gap and consolidation challenge

Country	Sustainability gap indicators (2013)				Strong consolidation challenge
	S1 - "medium-term"	Total	S2 - "long-term"		
			of which:		
			Initial Budgetary position	Ageing component	
BE	5.2	6.9	0.3	6.6	X
DE	-0.3	1.4	-1.1	2.4	
EE	-3.4	1.2	0.5	0.7	
ES	6.1	5.6	3.7	1.9	X
FR	2.3	1.9	0.9	0.9	
IT	1.1	-2.1	-2.8	0.7	
LU	-1.5	8.6	-0.1	8.7	X
MT	3.1	6.8	1.8	5.0	X
NL	3.1	6.5	2.6	4.0	X
AT	2.4	4.0	0.4	3.6	
SI	4.2	8.6	1.7	6.9	X
SK	0.6	4.9	1.5	3.5	
FI	2.1	6.2	1.3	4.9	X
BG	-2.9	1.1	0.7	0.3	
CZ	0.7	5.0	1.3	3.7	
DK	-2.5	1.7	0.1	1.6	
HR	-	-	-	-	-
LV	-3.0	-1.0	0.9	-1.8	
LT	1.0	5.7	1.8	3.9	
HU	-1.4	-0.1	-0.4	0.3	
PL	1.1	2.8	1.8	1.0	
RO	-0.8	4.1	0.4	3.6	
SE	-2.7	2.4	-0.3	2.7	
UK	6.1	6.2	3.6	2.6	X
EU-27	2.1	2.9	0.7	2.2	
EA-17	1.9	2.3	0.1	2.2	
LAF plus	1.1	1.8	-0.2	1.7	
LAF minus	3.2	4.0	1.5	2.8	

Note: Cyprus, Ireland, Greece and Portugal are not covered by the screening approach. No data is available for Croatia. Indicator values above zero are indicative of a sustainability gap. For more information on the indicators, see European Commission (2012b).

Source: Commission services.

Table 5.2: Indicators of 'tax space'

Country	Overall tax space: tax-to-GDP ratio	Change in cyclically adjusted tax-to-GDP ratio	Discretionary revenue measures	Distance to MTO
	2013	2009-13	2009-2013	2013
BE	45.4	2.1	2.6	3.0
DE	39.8	-0.2	-0.2	-0.9
EE	32.6	-2.4	0.5	0.2
ES	32.1	1.8	4.5	4.4
FR	46.3	4.1	3.6	2.2
IT	44.3	1.6	3.5	0.5
LU	38.6	-1.4	0.8	-0.2
MT	33.9	-0.1	1.2	3.8
NL	39.8	1.6	1.9	1.5
AT	43.1	0.3	0.7	1.1
SI	37.3	0.6	0.7	2.4
SK	29.2	-0.1	3.0	2.5
FI	44.4	0.8	1.9	0.1
BG	28.7	-0.1	1.2	0.3
CZ	35.4	1.4	2.2	0.6
DK	49.3	0.0	1.5	-0.5
HR*	-	-	-	-
LV	27.1	0.9	7.3	0.9
LT	27.3	-2.1	0.6	1.8
HU	38.9	-1.4	2.4	-0.6
PL	32.0	1.2	3.1	2.3
RO	28.8	0.1	2.3	0.7
SE	44.3	-2.4	-0.8	-0.9
UK	37.4	1.1	1.4	-
EU-27	40.1	1.3	2.3	1.7
EA-17	40.9	1.6	2.6	1.2
LAF plus	38.0	0.7	1.4	---
LAF minus	42.2	2.0	3.2	---

Note: Column (1) presents the tax-to-GDP ratio (excl. imputed SSC) based on the Commission's spring 2013 forecast. Column (2) shows the forecast change in the cyclically adjusted tax-to-GDP ratio. Column (3) shows the sum of the discretionary revenue measures over the period 2009-13. Column (4) provides the distance to the Medium-Term Budgetary Objective (MTO). No data is available for Croatia. The UK does not have a MTO.

Source: Commission services.

Table 5.3: Assessment of tax space and fiscal consolidation challenge

Country	Potential need for higher tax revenues to help consolidation	Room for tax based consolidation				Need and scope for tax based consolidation
		Overall tax level	Room to increase least distortionary taxes	No significant tax increase in recent years	Scope for tax based consolidation	
BE	X		X	X		
DE			(X)	X		
EE		X	(X)	X	X	
ES	X	X	X	X	X	X
FR			X	X		
IT			X			
LU	X		X	X		
MT	X	X	(X)	X	X	X
NL	X			X		
AT			X	X		
SI	X	X	(X)	X	X	X
SK		X	X	X	X	
FI	X		(X)			
BG		X	(X)	X	X	
CZ		X	X		X	
DK				X		
HR*	-	-	-	-	-	-
LV		X	X		X	
LT		X	X	X	X	
HU			X	X		
PL		X	(X)	X	X	
RO		X	X	X	X	
SE			(X)	X		
UK	X	X		X		

Note: Column (1) is based on the results of Table 4.1, indicating Member States with high consolidation challenge. Column (2): Member States with a tax-to-GDP ratio below LAF plus are considered as having overall tax space. Column (3): Based on the assessment shown in Table 4.6, Member States with an 'X' have scope to increase the least distortionary taxes (consumption taxes, recurrent taxes on housing and/or environmental taxes). In contrast to the analysis of the need and room for a tax shift, the size of the room to increase least distortionary taxes is not taken into consideration here. In Column (4) an 'X' is given if the Member State has not increased taxes significantly in the recent past ('no tax fatigue') or if the distance to the Medium-Term Budgetary Objective (MTO) is greater than the EU average. Column (5) summaries the screening for the 'tax space'. Column (6) presents the outcome of the screening approach. Cyprus, Ireland, Greece and Portugal are not covered by the screening approach. No data is available for Croatia.

Source: Commission services.

5.2.2. Availability of 'tax space'

As can be seen in Table 5.2, most of the new Member States (the only exception being Hungary) but also Spain and the UK display tax-to-GDP ratios significantly below the EU average (indicated by an 'x' in Table 5.3, column 2), with the UK and Slovenia being very close to the threshold (i.e. LAF plus). Such low tax-to-GDP ratios also reflect less generous welfare systems. These Member States are, therefore, considered to have some *overall tax space*. However, this approach remains mechanical and this indicator of tax space should be interpreted with caution in practice and alongside relevant factors. Indeed, the room for increasing the tax-to-GDP ratio does not only depend on the current level, but also on country characteristics and national preferences, and the indication of overall tax space is not necessarily a call for higher taxes but has to be seen in the context of the expenditure side of the budget and the preference for redistribution, among other issues. For instance, more recently acceded countries tend to have less extended social protections, which are largely related to their lower revenue-to-GDP ratio. This is the opposite for Nordic countries.

The summary information provided in Table 5.3 shows that most Member States, including those with a low tax-to-GDP ratio but with the exception of the UK, are found to have at least some potential for increasing the least distortionary taxes (column 3). Furthermore, the majority of Member States is considered not to have increased taxes significantly over the 2009-2013 period as measured by either the change in the cyclically adjusted tax-to-GDP ratio or the amount of discretionary revenue measures⁽⁴⁶⁾. Of those Member States considered to have a particularly high tax increase over that time period, several Member States are still considered to be far away from their MTO (namely Belgium, Spain and

⁽⁴⁶⁾ The change in the cyclically adjusted tax-to-GDP ratio corresponds to the commonly called 'top-down' assessment of fiscal policy, while examining the total amount of discretionary revenue measures is usually referred to as the 'bottom-up' assessment of fiscal policy

Table 5.4: Fiscal consolidation challenge: outcome of different screening approaches – robustness check

Country	LAF weighted	LAF unweighted	Ranking	Winsorising cap at 5%	Winsorising extrema
BE					
DE					
EE					
ES	X	X		X	X
FR					
IT					
LU					
MT	X			X	X
NL					
AT					
SI	X			X	X
SK					
FI					
BG					
CZ					
DK					
HR	-	-	-	-	-
LV					
LT					
HU					
PL					
RO					
SE					
UK					

Note: Cyprus, Ireland, Greece and Portugal are not covered by the screening approach. No data is available for Croatia.

Source: Commission services.

France).⁽⁴⁷⁾ Therefore, the large majority of countries are identified to have room for increasing the least distortionary taxes or not to have experienced significant tax increases in recent years.

Based on the screening explained above, Table 5.3 presents in the second last column those Member States that are considered to have 'tax space' or room for increasing taxes. These Member States are characterised by a relatively low tax-to-GDP ratio and they fulfil one of the two qualifying conditions: i) having scope for increasing the least distortionary taxes or ii) being farther from the MTO than the EU average or, for those closer, not having increased taxes strongly in the 2009-13.⁽⁴⁸⁾

5.2.3. Summary of screening results

Among those Member States with high sustainability challenges, Spain, Malta and Slovenia show some room for raising tax, which may be used to contribute to fiscal consolidation in addition to expenditure control. This could be seen in the last column of Table 5.3.

Due to the usual lag between the enactment of a policy and its coming into effect, this screening may not take into account recent tax increases or substantial measures taken in response to the challenges identified already last year. The screening generally refers to 2011 data and, therefore, may not reflect measures taken in 2012 and 2013 as discussed in Section 5.2.2.⁽⁴⁹⁾ This leads to qualifying the results for Spain and Slovenia, where a recent rise in taxation has been carried out and should also be taken into consideration when drawing policy conclusions.

Of course, further detailed country-specific analysis is necessary to ascertain or nuance the results. First, some countries with little tax space (reflected in a relatively high overall tax burden) may still need to raise taxes further – in addition to curbing public expenditures significantly – to meet their consolidation challenges, at least in the short to medium run. Second, given the essentially macroeconomic nature of the screening, an in-depth and country-specific assessment of the microeconomic effects of an increase in

⁽⁴⁷⁾ The figures shown in Table 5.2 do not only indicate tax space. They also highlight that several of the countries with a significant tax increase over the 2009-2013 period are characterised by a very high tax-to-GDP ratio. This in particular concerns France, but also Italy and Belgium.

⁽⁴⁸⁾ The UK does not have an MTO and is, therefore, a specific case in the screening. The UK is not considered to have specific room for tax-based consolidation as its tax-to-GDP ratio is close to the threshold (LAF plus) and, at the same time, it is not considered to have particular room to increase the least distortionary taxes.

⁽⁴⁹⁾ For an overview of these reforms see 'Taxation reforms database': http://ec.europa.eu/economy_finance/db_indicators/taxation_reforms_database/index_en.htm

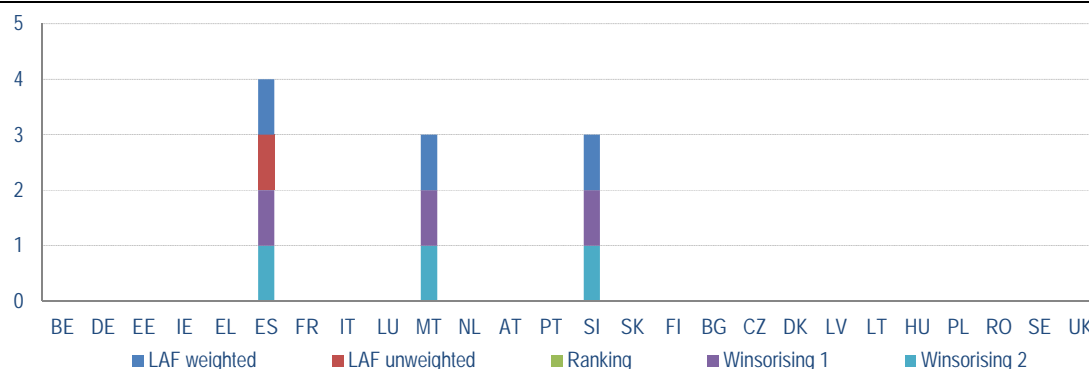
specific types of tax - including its impact on particular groups of taxpayers - would have to be carried out before firm tax policy conclusions can be drawn. However, such detailed scrutiny of the possible room for increasing specific categories of taxes lies beyond the scope of this paper.

5.3. ROBUSTNESS CHECK: RESULTS USING ALTERNATIVE SCREENING BENCHMARKS

Sensitivity analysis was systematically run on the method to compute the thresholds applied for defining a potential policy challenge. The logic behind the alternative screening benchmarks is presented in Section 3. The screening results using the alternative benchmarks are displayed in Table 5.4. A 'cross' indicates that the screening approach identifies a challenge for the considered country using a specific benchmark.⁽⁵⁰⁾ Graph 5.1 summarises the outcome of the different screening approaches in an intuitive manner. A high score – close to five – means that many of the five benchmarks point to need and scope for increasing revenue to help fiscal consolidation in the considered country.

As shown in the last two columns of Table 5.4, the result obtained with the standard LAF approach also holds if the data is corrected for outliers using the Winsorising approaches. In other words, it shows that the screening results are not driven by outliers. As expected, using the LAF approach with a non-weighted distribution or the approach based on country rankings provides different results. Unlike the standard LAF weighted approach, which duly takes into account the economic size of each Member State, these two approaches give more weight to small Member States, in particular to the Member States that joined the Union as of 2004, which are generally characterised by a relatively low tax-to-GDP ratio. Therefore, the unweighted approach biases the average on the downside: only one country (Spain) with a strong need for consolidation appears in the bottom third of the distribution in terms of low tax-to-GDP ratio. In the case of the ranking approach, none of the three countries identified with the standard LAF approach (Spain, Malta and Slovenia) appears any more in the bottom third of the distribution of tax-to-GDP ratio, i.e. among the nine Member States with the lowest tax-to-GDP ratio. However, the ranking approach conceals the fact that the level (not the ranking) of tax-to-GDP ratio remains fairly low for these countries, which justifies the relevance of standard LAF approach as to whether to use revenue increases to help consolidate.

Graph 5.1: Summary of different screening results regarding the potential need and scope for increasing revenue to consolidate



Note: Based on Table 5.4, the graph shows in how many screening approaches a Member State is identified to have need and scope for a contribution from the revenue side to fiscal consolidation. A score of zero means that none of the five benchmarks points to the considered countries as having both need and scope for increasing revenue to help fiscal consolidation. Conversely, a score of five means that all of the five benchmarks points to need and scope for increasing revenue to help fiscal consolidation in the considered country.

Source: European Commission

⁽⁵⁰⁾ The detailed screening tables for the different approaches can be found in the annex. All screening approaches use the ad-hoc thresholds for the sustainability indicators, which are more relevant to assess the sustainability challenges.

The analysis above is based on a conservative benchmarking assumption for identifying countries with tax space. This concerns the focus on countries with a very low-to-GDP ratio (below LAF plus) to establish the existence of tax space. Alternatively and to check for robustness for this assumption, it could also be considered that a country may have an 'overall tax space' if its tax-to-GDP ratio is not already very high (i.e. below LAF minus). Applying such a relaxed assumption for the standard LAF approach – leaving all other conditions unchanged – would increase the number of countries considered to have some room for increasing revenue to assist the fiscal consolidation process. In this case, five Member States would be found to have need and room for a contribution of revenue to consolidation, namely, Luxembourg and the Netherlands, in addition to Spain, Malta and Slovenia (see Table A.9 in the Annex).

6. CONCLUDING REMARKS

Recommendations to EU Member States under the EU policy framework aim at promoting a growth-friendly approach to consolidation design and at making the tax structure more growth-friendly. This involves considering the structure of taxation and the composition of the budgetary adjustment between taxes and spending. In line with a literature survey and based on a cross-country analysis, the paper examines two macroeconomic tax challenges at Member State level, namely the potential need and scope (i) for shifting taxes away from labour and (ii) for increasing revenue to help fiscal consolidation.

The paper first identified which Member States have a particular need to reduce labour taxes (either overall or for specific labour market groups) and at the same time have room for increasing those taxes that are considered to be less distortive for growth, namely consumption, recurrent property and environmental taxes. This analysis shows that around one third of the Member States could in particular consider shifting taxation away from labour to other tax bases.

A second screening aims at identifying Member States that might consider using taxation – in addition to expenditure control – to consolidate their public finances and steer them on a sustainable path. According to this screening, a very limited number of countries is found to face particular consolidation challenges and, at the same time, have reasonable room for tax revenue increases.

To test how far the results depend on the specific approach used, robustness checks are carried out. These checks overall confirm the outcome of the central analysis, especially for the analysis of the tax shifts. However, both screenings need to be complemented with in-depth country analysis before being able to draw firm policy conclusions.

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Statistical annex

Table A.1: Need and room for tax shift: robustness check (1) - LAF unweighted

Country	High tax burden on labour				Potential to shift				Need and room for tax shift
	Overall	Specific groups - low skilled	Specific groups - second-earners	Need to reduce labour taxation	Consumption	Recurrent housing	Environment	Room to shift	
BE	X	X	X	X	X		X	X	X
DE	(X)	(X)	X	X	X	X		X	X
EE	X	(X)		X		X		(X)	(X)
IE					X			X	
EL		(X)		(X)	X			X	(X)
ES					X		X	X	
FR	X	(X)		X	X		X	X	X
IT	X	X	X	X	X			X	X
CY	-	-	-	-	X			X	
LU					X	X		X	
MT					X	X		X	
NL	X		(X)	X					
AT	(X)	(X)	(X)	(X)	X	X		X	(X)
PT					X			X	
SI						X		(X)	
SK					X	X	X	X	
FI	(X)	(X)		(X)					
BG						X		(X)	
CZ	(X)			(X)	X	X	X	X	(X)
DK			(X)	(X)					
HR	-	-	-	-	-	-	-	-	-
LV	X	X	-	X	X		X	X	X
LT					X	X	X	X	
HU	X	X		X		X	X	X	X
PL		(X)		(X)			X	(X)	(X)
RO		X		X			X	(X)	(X)
SE	(X)	(X)		(X)					
UK					X			X	

Note: See note to Table 4.6 for explanations.

Source: Commission services.

Table A.2: Need and room for tax shift: robustness check (2) - Ranking approach

Country	High tax burden on labour				Potential to shift				Need and room for tax shift
	Overall	Specific groups - low skilled	Specific groups - second-earners	Need to reduce labour taxation	Consumption	Recurrent housing	Environment	Room to shift	
BE	X	X	X	X	X		X	X	X
DE	(X)	X	X	X					
EE						X		(X)	
IE					X			X	
EL					X			X	
ES					X		X	X	
FR	X	(X)		X			X	(X)	(X)
IT	X	X	X	X	X			X	X
CY	-	-	-	-	X			X	
LU					X	X		X	
MT						X		(X)	
NL			(X)	(X)					
AT	(X)	(X)		(X)		X		(X)	(X)
PT					X			X	
SI									
SK					X		X	X	
FI	(X)			(X)					
BG						X		(X)	
CZ	X			X		X	X	X	X
DK			(X)	(X)					
HR	-	-	-	-	-	-	-	-	-
LV		X		X	X		X	X	X
LT					X	X	X	X	
HU	X	X		X			X	(X)	(X)
PL									
RO		X		X			X	(X)	(X)
SE	(X)			(X)					
UK									

Note: See note to Table 4.6 for explanations.

Source: Commission services.

Table A.3: Need and room for tax shift: Robustness check (3) – Winsorising 1

Country	High tax burden on labour				Potential to shift				Need and room for tax shift
	Overall	Specific groups - low skilled	Specific groups - second-earners	Need to reduce labour taxation	Consumption	Recurrent housing	Environment	Room to shift	
BE	X	X	(X)	X	X		X	X	X
DE	(X)	X	(X)	X		X		(X)	(X)
EE						X		(X)	
IE					X			X	
EL					X			X	
ES					X		X	X	
FR	X	(X)		X	X		X	X	X
IT	X	X	(X)	X	X	X		X	X
CY	-	-	-	-	X	X		X	
LU					X	X		X	
MT						X		(X)	
NL			X	X					
AT	(X)	(X)		(X)	X	X	X	X	(X)
PT					X	X	X	X	
SI						X		(X)	
SK					X	X	X	X	
FI	(X)			(X)		X		(X)	(X)
BG						X		(X)	
CZ	X			X		X	X	X	X
DK			(X)	(X)					
HR	-	-	-	-	-	-	-	-	-
LV		X		X	X		X	X	X
LT					X	X	X	X	
HU	X	X		X		X	X	X	X
PL									
RO		X		X		X	X	X	X
SE	(X)	(X)		(X)		X		(X)	(X)
UK									

Note: See note to Table 4.6 for explanations.

Source: Commission services.

Table A.4: Need and room for tax shift: robustness check (4) – Winsorising 2

Country	High tax burden on labour				Potential to shift				Need and room for tax shift
	Overall	Specific groups - low skilled	Specific groups - second-earners	Need to reduce labour taxation	Consumption	Recurrent housing	Environment	Room to shift	
BE	X	X	X	X	X		X	X	X
DE	(X)	X	(X)	X	X	X		X	X
EE						X		(X)	
IE					X			X	
EL					X			X	
ES					X		X	X	
FR	X	(X)		X	X		X	X	X
IT	X	X	X	X	X	X		X	X
CY	-				X	X		X	
LU					X	X		X	
MT					X	X		X	
NL			(X)	(X)					
AT	(X)	(X)		(X)	X	X	X	X	(X)
PT					X	X	X	X	
SI						X		(X)	
SK					X	X	X	X	
FI	(X)			(X)		X		(X)	(X)
BG						X		(X)	
CZ	X			X		X	X	X	X
DK			(X)	(X)					
HR	-	-	-	-	-	-	-	-	-
LV		X		X	X			X	X
LT					X	X	X	X	
HU	X	X		X		X	X	X	X
PL							X	(X)	
RO		X		X		X	X	X	X
SE	(X)	(X)		(X)		X		(X)	(X)
UK									

Note: See note to Table 4.6 for explanations.

Source: Commission services.

Table A.5: Need and scope for contribution from the revenue side to consolidation: robustness check (1) – LAF unweighted

Country	Potential need for higher tax revenues to help consolidation	Room for tax based consolidation				Need and scope for tax based consolidation
		Overall tax level	Room to increase least distortionary taxes	No significant tax increase in recent years	Scope for tax based consolidation	
BE	X		X			
DE			X	X		
EE		X	X	X	X	
ES	X	X	X		X	X
FR			X			
IT			X	X		
LU	X		X	X		
MT	X		X	X		
NL	X			X		
AT			X	X		
SI	X		X	X		
SK		X	X	X	X	
FI	X			X		
BG		X	X	X	X	
CZ			X	X		
DK				X		
HR						
LV		X	X	X	X	
LT		X	X	X	X	
HU			X	X		
PL		X	X		X	
RO		X	X	X	X	
SE				X		
UK	X		X	X		

Note: See note to Table 5.3 for explanations.

Source: Commission services.

Table A.6: Need and scope for contribution from the revenue side to consolidation: robustness check (2) – Ranking approach

Country	Potential need for higher tax revenues to help consolidation	Room for tax based consolidation				Need and scope for tax based consolidation
		Overall tax level	Room to increase least distortionary taxes	No significant tax increase in recent years	Scope for tax based consolidation	
BE	X		X			
DE			X	X		
EE			X	X		
ES	X		X			
FR			X			
IT			X	X		
LU	X		X	X		
MT	X		X	X		
NL	X					
AT			X	X		
SI	X			X		
SK		X	X	X	X	
FI	X			X		
BG		X	X	X	X	
CZ			X	X		
DK				X		
HR						
LV		X	X	X	X	
LT		X	X	X	X	
HU			X	X		
PL		X			X	
RO		X	X	X	X	
SE				X		
UK	X			X		

Note: See note to Table 5.3 for explanations.

Source: Commission services.

Table A.7: Need and scope for contribution from the revenue side to consolidation: robustness check (3) – Winsorising 1

Country	Potential need for higher tax revenues to help consolidation	Room for tax based consolidation				Need and scope for tax based consolidation
		Overall tax level	Room to increase least distortionary taxes	No significant tax increase in recent years	Scope for tax based consolidation	
BE	X		X	X		
DE			X	X		
EE		X	X	X	X	
ES	X	X	X	X	X	X
FR			X	X		
IT			X			
LU	X		X	X		
MT	X	X	X	X	X	X
NL	X		X	X		
AT			X	X		
SI	X	X	X	X	X	X
SK		X	X	X	X	
FI	X		X	X		
BG		X	X	X	X	
CZ		X	X	X	X	
DK				X		
HR						
LV		X	X		X	
LT		X	X	X	X	
HU			X	X		
PL		X	X	X	X	
RO		X	X	X	X	
SE			X	X		
UK	X	X		X		

Note: See note to Table 5.3 for explanations.

Source: Commission services.

Table A.8: Need and scope for contribution from the revenue side to consolidation: robustness check (4) – Winsorising 2

Country	Potential need for higher tax revenues to help consolidation	Room for tax based consolidation				Need and scope for tax based consolidation
		Overall tax level	Room to increase least distortionary taxes	No significant tax increase in recent years	Scope for tax based consolidation	
BE	X		X	X		
DE			X	X		
EE		X	X	X	X	
ES	X	X	X	X	X	X
FR			X	X		
IT			X			
LU	X		X	X		
MT	X	X	X	X	X	X
NL	X		X			
AT			X	X		
SI	X	X	X	X	X	X
SK		X	X	X	X	
FI	X		X	X		
BG		X	X	X	X	
CZ		X	X	X	X	
DK				X		
HR						
LV		X	X		X	
LT		X	X	X	X	
HU			X	X		
PL		X	X	X	X	
RO		X	X	X	X	
SE			X	X		
UK	X	X		X		

Note: See note to Table 5.3 for explanations.

Source: Commission services.

Table A.9: Need and scope for contribution for revenue side to consolidation: robustness check for overall tax space

Country	Potential need for higher tax revenues to help consolidation	Scope for tax based consolidation			Need and scope for tax based consolidation
		Overall tax level	Room to increase least distortionary taxes	No significant tax increase in recent years	
BE	X		X		
DE		X	(X)	X	X
EE		X	(X)	X	X
ES	X	X	X		X
FR			X		
IT			X		
LU	X	X	X	X	X
MT	X	X	(X)	X	X
NL	X	X		X	X
AT			X	X	
SI	X	X	(X)	X	X
SK		X	X	X	X
FI	X		(X)	X	
BG		X	(X)	X	X
CZ		X	X	X	X
DK				X	
HR	-		-		-
LV		X	X		X
LT		X	X	X	X
HU		X	X	X	X
PL		X	(X)	X	X
RO		X	X	X	X
SE			(X)	X	
UK	X	X		X	

Note: See note to Table 5.3 for explanations.

Source: Commission services.

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