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# The Economic Impact of Selected Structural Reform Measures in Italy, France, Spain and Portugal

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European Commission

Directorate-General for Economic and Financial Affairs

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## Executive Summary

*This paper reports the results of a macroeconomic impact assessment of actual structural reform measures in four Member States (Italy, France, Spain and Portugal). For Italy, Spain and Portugal the selection of measures is based on the 2013, 2014 and 2015 National Reform Programmes, while for France only measures from the 2015 NRP are considered. The paper describes the methodology used, the 'translation' of actual reform measures into model shocks, and the results from QUEST model simulations.*

*The aim was to develop a rigorous methodology that allows results to be comparable across countries. Therefore only those measures that could be quantified realistically were taken into consideration. Some reform measures were not quantified, either because their impact was judged to be too small or because quantification was considered not to be feasible as the information available was overall insufficient in terms of the substantiation of the expected impacts or the description of the country-specific institutional details, timeframe and implementation strategies. In other cases appropriate methodologies to translate reforms into QUEST model shocks and/or suitable, quantifiable reform indicators were lacking. This was most prominently the case for reforms of the judicial system and reforms to insolvency frameworks. These are areas where more research is needed before their macroeconomic impact can be quantified. All this does of course not imply that these reforms have no effect, only that we were not able to quantify the impact in a sufficiently reliable and rigorous way in this exercise. Another difference with national assessments of the quantitative impact of reform measures is that in this exercise we also take into account the costs of reforms and the full policy feedback and interactions of a general equilibrium model. By assuming full financing of reform measures in our assessment, we can focus on the structural impact and isolate this from any budgetary policy (fiscal consolidation or expansion).*

*The reform measures that were considered quantifiable were translated into changes in structural indicators that are used in the QUEST model. When possible, this was done through a 'direct' mapping to structural indicators, e.g. in the case of unemployment benefit reforms, where the impact of the reform on the net replacement rate could be calculated. Other examples of 'direct' translations were tax reforms, for which changes in implicit tax rates could be calculated and directly shocked in the model. When no direct mapping of actual measures to model variables was possible, an 'indirect' approach was applied relying on intermediate indicators and other existing empirical evidence. Examples include reforms to product market regulation, where the impact of reform measures on PMR indicators were calculated and the latter was then mapped onto a mark-up shock. Other examples were reforms to Employment Protection Legislation (EPL), for which first the impact on the EPL indicator was calculated, and this was then linked to productivity shocks using available empirical estimates. As only a select set of reforms are being analysed, the presented country results of the included reforms should not be interpreted as a complete evaluation of the countries' reform efforts.*

*Model simulations suggest the reform measures can have a sizeable positive macroeconomic impact. By 2020, the quantified reform measures are estimated to raise GDP by some 1¼% in Italy and Spain, some 2% in Portugal, and in France, for which we only consider measures included in the 2015 NRP, close to ½%. This implies on average roughly between 0.1 and 0.3 pps. higher GDP growth over a 5 year horizon. The GDP effects become larger over the longer run. These output gains are driven by higher productivity and/or higher employment rates. Reforms also generally improve government balances, as higher growth boosts tax revenues, although in cases of large tax cuts this effect is not strong enough to fully offset the direct negative impact of the tax cuts on government finances.*

*This exercise highlights the difficulties for quantifying the economic impact of actual reform measures. First, as stated above, not all measures are easily quantifiable and many measures were not assessed quantitatively in this exercise. This was not always merely because they were deemed insignificant, but in some cases because it was not clear how the macroeconomic impact of the reforms, if any, could be quantified. Second, even for those measures that were included, the 'translation' of reform measures into quantifiable changes in structural indicators is surrounded by large uncertainties, related to the direct quantification of the measures, but also to the assumed implementation speed and robustness of empirical estimates on which the assessment had to rely.*

*Third, the impact assessment is based on a macroeconomic model, and results are sensitive to certain model assumptions. Finally, it should be emphasized that the results presented are not directly comparable to the results of similar studies by national authorities, as the scope of the considered reforms and assumptions underlying the studies differ.*

*The treatment of tax reforms is a particular challenge in this exercise. It is usual in structural reform assessments which rely on stylised shocks to consider tax shifts from labour taxes to (less distortive) consumption taxes that are (ex ante) budgetary neutral. In fact the measures covered have in several cases consisted of tax increases addressing pressing consolidation needs, with a negative output effect in the short to medium run. Therefore, in order to highlight the 'structural' component of tax changes, tax reforms are simulated assuming hypothetical compensatory adjustments carried out in all taxes such that the overall effect of the tax measure is (ex ante) budgetary neutral. This allows for assessing the specific impact of the change on the tax structure, independent of fiscal consolidation or expansion effects.*

*Summing up, it must be stressed that the estimates presented here are surrounded by large uncertainties and should be interpreted with caution. A quantitative assessment of structural reform measures is a very challenging task and its application in economic surveillance potentially problematic. By presenting in detail how the actual translation of reforms into model shocks has been carried out, the Commission wants to feed the discussion with the Member States and other institutions.*

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## 1. Introduction

Structural reforms can boost growth and employment and help reinvigorate growth in the EU. Previous work has shown that the potential impact of reforms can be large. Based on a benchmarking approach, it was found that closing half the gap vis-à-vis best performers can add around 3% to EU GDP after 5 years, and 6% after 10 years. GDP effects in member states that are further from 'best practice' can be significantly higher, up to 10% for Greece and 8½% for Italy after 10 years.<sup>1</sup> But this is based on hypothetical scenarios assuming countries can move to 'best practice'. Most of the literature quantifying the impact of structural reforms has relied on such hypothetical shocks.<sup>2</sup> While this shows the potential impact of reforms in general, it does not tell us much about the impact of actual reform measures that have recently been implemented. This paper aims to address this by focussing on actual reform measures, and tries to quantify the potential macroeconomic impact of these measures in four selected countries.

This exercise considers reforms put forward by four Member States (France, Italy, Spain and Portugal) in their recent National Reform Programmes (NRPs). For Italy, Spain and Portugal, our measures include those introduced in the 2013, 2014 and 2015 NRPs, but for France we only consider recent 2015 measures, and results are therefore not directly comparable across countries. Reform measures were translated into quantitative shocks that could be simulated with the Commission's QUEST model. The semi-endogenous growth version of the QUEST model, which includes an R&D production sector, has been used extensively for assessing the potential impact of structural reforms (Roeger et al., 2008, Varga et al., 2014). While some measures have been directly translated into model parameters, in other cases the translation was done through intermediary indicators that were then in a second step translated into model parameters.<sup>3</sup> This is notably the case for some product and labour market reforms that have been quantified as changes in the OECD's Product Market Regulation (PMR) and Employment Protection Legislation (EPL) indicators and subsequently translated into mark-up or productivity shocks (see the summaries and documentation of the translation of the measures in these policy areas, in section 2 and in the country sections).

### *Reform measures*

The reform measures considered here are in product markets, R&D, labour markets, education, pensions and taxation. Details of the reform measures are described in the country chapters, and cover a wide range of categories and model variables:

- Unemployment benefit replacement rate
- Active Labour Market Policies (ALMP)
- Employment Protection Legislation (EPL)
- Participation rate female workers
- Participation rate older workers
- Education (skill shares)
- R&D tax credits
- Entry costs
- Mark-ups
- Administrative burden
- Consumption tax
- Labour tax
- Capital tax

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<sup>1</sup> See Varga and in 't Veld (2014). Comparable results are reported in e.g. Bouis and Duval (2011) and Barkbu et al. (2012).

<sup>2</sup> Specific reforms such as the implementation across MS of the Services Directive have been subject of impact assessments (see Monteagudo et al., 2012). European Commission (2014) contains other examples of actual reform efforts, but with a focus on their impact at a micro level (e.g. on entry rates).

<sup>3</sup> For example, QUEST can handle a limited number of variables related to product market reforms (final goods mark-ups, entry costs, overhead costs and TFP), which implies that sometimes a preliminary estimation on the effect of the reform on these intermediate variables is necessary.

For each country reforms were simulated one by one and the results are reported country-by-country. It is important to bear in mind that when several reforms are channelled through the same model/policy variable, the size of the shock simulated is the sum of the individual shocks (e.g. several reforms simulated via a mark-ups shock). In other words, the shocks simulated often correspond to several measures.

In essence, this assessment is forward looking, and gives an estimate of the expected impact of measures announced and (expected to be) implemented by the Member States. These estimated effects depend on assumptions made on implementation speed and on how quickly measures change economic conditions. In reality, implementation may be delayed or brought forward, and measures may take a longer or a shorter period to impact on real economic conditions than assumed here. Many measures are also difficult to evaluate at the micro level and assessments relying on estimated impacts on intermediate indicators, like labour productivity, are all surrounded by uncertainties.

It must be acknowledged that not all announced measures have been taken into account here. Some measures have been excluded because uncertainties about their implementation were too large, others were excluded because insufficient details were available about their coverage and reach.

The simulated impact of the shocks is also sensitive to model assumptions. When monetary policy is operating at the zero-lower bound, interest rates cannot be lowered to support structural reforms, and the effects may be smaller in the short run.<sup>4</sup> As the interest rate effect for a single country in a monetary union will be small anyway, this would make a difference when all countries were simultaneously undertaking reforms. At the current juncture, with high indebtedness of households and firms, the contractionary short run effects of structural reforms due to their deflationary effects may also imply smaller benefits in the short run. Furthermore, in the context of the model, results are sensitive to assumptions on how benefit and/or other transfer recipients are compensated for increases in consumer prices.

All this warrants extreme caution when interpreting these estimates. It has to be acknowledged upfront that these impact assessments are surrounded by large range of uncertainties. Whether these estimates can really be applied operationally in economic surveillance is an issue that remains to be decided.

#### *Budgetary assumptions*

Many of the simulated measures have budgetary implications and these are captured in the simulations. For example, measures reducing benefit replacement rates improve budgetary positions, while active labour market policies bear budgetary costs and worsen the budget. The scenarios presented here show the budgetary impacts of the measures, and assume no compensatory budgetary measures are taken over the reported horizon of 25 years.<sup>5</sup>

Recommended tax reforms shift the tax burden from more distortive taxes (labour, corporate income) to less distortive ones (e.g. consumption taxes). This exercise focuses on the 'structural' component of the tax changes. In order to achieve this, each tax change is compensated by offsetting changes in other taxes such that the overall

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<sup>4</sup> Some authors have argued the impact of structural reforms on economic activity in the short term can be counter-productive when the zero bound on monetary policy rates is temporarily binding, due to the downward pressure on prices and increase in real interest rates (e.g. mark-up reductions in Eggertsson et al., 2014). In a larger macroeconomic model like QUEST, the contractionary short term effects of deflationary supply-side reforms at the ZLB are smaller due to various mitigating factors: the impact of reforms on the profitability of investment, the disposable income of liquidity-constrained households and the competitiveness effect in external trade. The adverse real interest rate effect also depends on the short term deflationary impact of the reform (which can be smaller for other measures). (see European Commission, 2014).

<sup>5</sup> Outside the reporting horizon a tax-rule is introduced that gradually stabilises the debt-to-GDP ratio in the long run. When measures raise government deficits and debt, labour taxes are raised after 25 years to bring debt ratios back to baseline in the long run, while when measures have reduced government debt, taxes are lowered. This is obviously not a realistic assumption at the current juncture when countries have to bring debt down to more sustainable levels, but it is meant to isolate the effects of structural reforms from the long-run effects of reducing government debt.

tax burden remains unchanged. This reflects how the tax changes affect the composition of taxes. Tax reforms that increase or reduce taxes across the board but do not change the composition have therefore no effects in this exercise.

Section 2 of this paper describes the methodology used to translate the measures into model shocks. Sections 3 to 6 describe then the translation of measures and their simulated impact for Italy, France, Spain and Portugal. Section 7 concludes.

## 2. Methodology

### 2.1 The translation of product market (including network industries) reforms

**Product markets reforms cover a vast and heterogeneous policy area.** In addition to sectoral regulation, they also include measures aiming at improving the business environment, reforms in the areas of judicial efficiency, insolvency legislation, administrative simplification, access to finance, etc. Appropriate methodologies and reform indicators to translate reforms in some of these areas into macroeconomic results are not always available (e.g. insolvency frameworks), which has limited the type of reforms included in this pilot. **The product market reforms can be grouped in 4 broad categories:** cost of starting a business; administrative burden; sectoral regulation; and access to finance.

**Reforms to reduce the cost of starting a business** were as a general rule directly implemented in QUEST as entry costs, proxied in the model by data from the World Bank Doing Business project on administrative monetary costs.

**Reforms regarding the simplification of the administrative framework** were translated into model parameter shocks through calculating the impact on overhead labour, as in Arpaia et al. (2007). This however requires that quantitative estimates of the administrative burden reduction are available. In Italy, for instance, they are provided by the government, using a standard cost model approach, such that a shock to overhead labour can be computed.

**Reforms in the area of sectoral product market regulation** were modelled through final goods mark-ups. In cases where sufficient information is available and the sector is covered by the sectoral Product Market Regulation (PMR) indicator of the OECD, we calculate the change in the PMR indicator based on a detailed analysis of how the measures impact on sub-PMR questionnaires. If the published 2013 values of the PMR already include the impact of the reform, a "pre-reform" estimate of the PMR is constructed through reverse engineering. If the most recent PMR data does not yet capture the reform, a forward engineering exercise is carried out to obtain an approximation of the post-reform PMR value. This avenue has been followed for reforms in professional services, retail, transport, communication (post & telecom), and the energy sector (see Annex A.I-A.IV for further details). After deriving the change in the PMR associated with the reform, the next step is to establish the impact on mark-ups. Thum-Thysen and Canton (2015) link mark-ups to changes in OECD PMR indicators at sector level. Changes in sectoral mark-ups (in connection with reforms impacting on sectoral PMRs) were rescaled in order to provide a shock in the overall final goods mark-up.

In addition to the mark-up channel an additional channel is used in case of professional services. Using results from Canton, Ciriaci, and Solera (2014), changes in product market regulation in regulated professions are found to have an impact on allocative efficiency, and thereby on sectoral labour productivity. The translation of changes in allocative efficiency into labour productivity shocks makes use of the finding in European Commission (2013) that a 1 percent point increase in allocative efficiency translates into a 0.73% increase in labour productivity.

Regarding the **reform on access to finance** in Italy they were incorporated in the pilot through a change in the corporate income tax. Motivation for this choice is that this particular reform in Italy allows firms that raise new equity or retain profits to deduct an amount from income taxes equal to the volume of new equity (incl. retained profits) times a notional rate, thereby lowering the effective corporate income tax rate.

For **some reforms the translation and quantification could not be undertaken.** Some of the difficulties encountered were that appropriate reform indicators were missing. For example, in the case of Spain the liberalisation of professional services spreads over a large number of professions, but the four covered by the PMR are excluded from the reform (or a low regulation level already exists).

## 2.2 The translation of labour market (including education) reforms

This exercise covered labour market reforms in four broad areas. Further two types of reforms, not represented by individual reform measures that could be translated in this exercise, are also briefly discussed below.

Unemployment benefit reforms were translated into changes of an OECD indicator of benefit generosity (the Net Replacement Rate over 5 years after job loss for a typical worker in industry earning the average wage – average value over multiple family types). Translations were done for reforms changing both the generosity and the duration of unemployment benefits. On the other hand, reforms to benefit eligibility are not reflected by the indicator.

Reforms to active labour market policies (ALMPs) were translated in terms of the change in the funds and spending allocated to this item, while assessing whether the change is temporary or permanent. This then is fed directly into the QUEST model boosting labour demand. However, many ALMP reforms also affect the way funds are spent, aimed at increasing the efficiency of spending, rather than the amount of spending. Possible efficiency gains of reforms not affecting spending, e.g. in terms of improved job matching, were typically not possible to assess in the framework of the exercise.

Education reforms have been translated via the changes in public spending on education and their estimated effects on skill shares. The latter is known in the case the reform in question states quantitative targets, for instance about increasing the share of students obtaining an upper secondary degree (in this case, some students will become medium-skilled rather than low-skilled based on the standard statistical definitions). In the absence of such quantitative targets (or relevant fiscal information), the assessment of education reforms was not possible.

Reforms of Employment Protection Legislation (EPL) tend to affect the demand rather than the supply of labour. Most importantly, they have the potential to affect aggregate productivity in the medium to long run by spurring labour market flows and thereby improving labour market matching and reallocation. The translation of job protection reforms was done in two steps. In the first step, the change in the standard EPL indicator of the OECD (protection of regular workers) is evaluated. In the second step, the change in the indicator was translated into a productivity shock using the elasticity estimated by Bassanini et al. (2009) and further elaborated by Martin and Scarpetta (2011). It should be noted that EPL reforms could only be assessed if enough detail was provided to calculate the change of the OECD indicator. Typically, this is the case only if the text of the legislation is already known.

Assessing reforms affecting labour market participation (e.g. changes in the welfare, disability or maternity benefit systems or the availability of childcare services) is challenging because their effect depends on behavioural changes of targeted groups. The assessment of such reforms is done ideally by country-specific analytical tools (e.g. micro-simulation models used in many Member States). There were no measures of this type in the present exercise.

Some reforms of wage-setting institutions could in principle be assessed. The translation can be based on analytical work, in European Commission (2011), estimating the relationship between wages and indicators of wage-setting institutions. Such indicators include the level, centralisation and coverage of wage bargaining, among others. The assessment of a reform would proceed in three steps. First, the reform would be translated into a change in one of the indicators of the wage-setting framework. Second, the parameters estimated in European Commission (2011) would be used to translate this into an expected change in the wage level. Finally, this estimate would be translated into a shock in the QUEST model. No reforms of wage setting institutions could be translated in this exercise.

## 2.3 The translation of tax reforms

**This pilot covered a relatively wide range of tax reforms** with identified changes in statutory tax rates and/or changes to taxable bases. As the relevant model parameter for taxes is the implicit tax rate (ITR), tax reforms were **translated into changes to the relevant ITRs – on capital (K), labour employed (L)<sup>6</sup> and consumption (C)**.

For the purpose of the exercise, the starting point of the translation is a measure of the budgetary effects of the reforms. These were generally based on national estimates. Since actual revenue figures from Eurostat/TAXUD are usually available only with a 2 year lag, assumptions had to be made on the evolution of the ITRs without policy interventions after 2012. A simple approach was chosen, whereby the respective 2012 ITRs were considered as the baseline, and assumed constant over the future years in the absence of policy changes. For future years (2013 onwards), the denominator was upgraded using the growth rate of (a proxy of) the base (e.g., compensation of employees for L, final household consumption for C, nominal GDP for K). The same growth rate was applied to the numerator (i.e., revenue without policy shock). Finally, the revenue impact from the policy intervention(s) when the reform was introduced was added to obtain the "shocked" ITRs.

Reforms in the area of personal income taxation often required an additional step. This is due to the fact that personal income taxes are raised on different types of income, namely employed labour income, income of self-employed, social transfers and pensions and capital income. Most personal income tax reforms affect several of these types of income. For this reason the revenue effects had to be broken down (the so-called PIT split) into the effect on the ITR on labour (i.e. the employed labour income share of the reform) and the ITR on capital (shares falling on self-employed and capital income). The share falling on transfer income and pensions – in most cases relatively small – is not captured by the three ITRs and could therefore not be modelled.

### **Breakdown of reform in level effect and structural component**

The simulations in the exercise are performed on 'compensated' tax reforms. In the light of the well-known different degree of "growth-friendliness" of income and consumption taxes which lies at the core of the Commission's recommendations for revenue neutral tax shifts, these alternative scenarios capture the structural component of tax changes via a compensatory adjustment still on the revenue side. In other words, the actual reforms reported in the NRP documents are assumed to be revenue neutral for the purpose of this exercise.

This approach allows assessing whether tax measures (increases or reductions) improve the growth-friendliness of the tax structure, while taking out the effects on the level of taxation and its aggregate fiscal impact. These alternative hypothetical scenarios were implemented by assuming a compensatory revenue change for each actual policy measure, and assigning such compensatory revenue to K, L and C proportionally to the tax structure observed in the baseline year (2012). Thus, each actual tax reform would trigger changes to all three ITRs in the model, so as to ensure revenue neutrality ex ante.<sup>7</sup>

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<sup>6</sup> In the case of one specific reform in Italy, only the ITR on labour for the low-skilled was reduced.

<sup>7</sup> Labour tax reductions would be modelled in practice as a partial tax shift towards consumption and capital. In the same logic, pure consumption tax increases would also be modelled as a partial tax shift away from labour and capital. In this scenario, tax reductions/increases across the board ("pure fiscal expansions/consolidations") would have virtually no impact, since the compensation would cancel them out. On the other hand "pure tax shifts" would be left unchanged as they are not affecting the level of taxation by their nature.

## 2.4 The translation of pension reforms

There were only two pension reforms to be considered: (i) ES increased the statutory retirement age, made the conditions for access to early and partial retirement more restrictive and introduced a new indexation mechanism for pensions and a sustainability factor linking changes in life expectancy with the amount of the pension benefit. Following the projections made by the Working Group on Ageing Populations and Sustainability (AWG), these reforms were translated into an increase progressively over time in the labour participation of older people: +3.2 and +6.9 percentage points by 2020 and 2060, respectively, for the 60-64 age bracket; (ii) IT abrogated the right of civil servants to postpone their retirement for two additional years within a package of measures aimed at stimulating generational change, reducing the average age and the barriers to geographical mobility of civil servants. However, this reform was not translated. It was considered that there was insufficient information on the effectiveness of this reform and that the impacts were likely to be limited. So in the end only the pension reform in Spain has been included in the quantification exercise.

### 3. Impact assessment of reforms in Italy

This section presents an overview of the reforms quantified in this study and the link with the shocks to the macroeconomic model. Specifically, the exercise covers i) the 2012 liberalisation package and the 2015 annual competition law; ii) the measures to reform the public administration approved in 2012-2013 and in 2014 (although the 2015 public administration reform has been already approved, it has not been covered as the related legislative decrees are not yet fully implemented); iii) the labour market reforms of 2012-2013 and 2014-2015; iv) all the tax reforms passed in the period (2013, 2014 and 2015); v) the 2015 education reform. From 2012 to 2015, Italy passed other important reforms that were not assessed because of methodological difficulties and uncertainties in the quantification of the impact. Specifically the 2012-2015 justice reforms, the 2013 establishment of the Italian Transport Authority, the 2014 broadband reform, the 2015 insolvency framework and the 2015-2017 simplification agenda were not assessed, but are briefly presented in the end of the section.

#### 3.1 The 2012 liberalisation package

The package includes measures to reform the professional services and the energy sector.

(a) **The reform of professional services** removes some restrictions on fees and access by abolishing all references to minimum, maximum and recommended tariffs in all regulated professions<sup>8</sup> and making it easier for young people to start practising. Such reduced entry barriers are expected to foster competition and reduce mark-ups in professional services. The OECD indicator on product market regulation (PMR) and recent work by ECFIN (Thum-Thyssen and Canton, 2015) were used to estimate the impact on mark-ups. A reverse engineering exercise was carried out for the four professions covered in the sectoral PMR on professional services (accounting, legal, engineering, and architecture), in order to determine the change in the PMR associated with the reform. Three elements have been taken into account in this exercise. First, the OECD 2013 value of the PMR does not seem to reflect the post-reform situation regarding the shortened training period for accountants. Imputing the post-reform reduced length of compulsory practical training for accountants into the 2013 survey slightly reduces the PMR for professional services from 2.10 to 2.08. Second, the OECD PMR data for 2013 already incorporated the post-reform answers to the question "Are the fees/prices that the legal profession charges for its services regulated by the government or self-regulated by the profession itself?" and its connected follow-up questions (except for the amendment made to legal activities as mentioned under the next point). To construct a pre-reform estimate of the PMR, the 2013 answers for the four professional services have been changed back to answers included in the 2008 wave. This yields a pre-reform PMR estimate of 2.60. Third, a December 2012 reform reversed some of the measures applicable to lawyers. In particular, this reform de facto reintroduces minimum tariffs in the event of litigation, through reference to a tariff scale set and regularly updated by the Ministry of Justice. Therefore the 2013 replies to the PMR survey have been altered in order to reflect this change. It has been decided to assume "non-binding recommended prices for some services" for legal activities. This changes the post-reform PMR to 2.11, which is slightly higher than the published number of 2.10.

Overall, the reform implies that the PMR is reduced from 2.60 to 2.11, i.e. a reduction of 0.49. Based on Thum-Thyssen and Canton (2015), this is translated into a reduction of mark-up in professional services from 19.3% to 16.8% after the reform (see Annex A).

(b) **The reform of the energy sector** includes measures aimed at increasing competition and transparency in the gas and electricity markets. One of them envisaged the ownership unbundling of the gas incumbent operator from the gas transmission operator, which was successfully completed in November 2013. Another change has been implemented in the course of 2013 by the Energy Regulator: the calculation method for the reference gas

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<sup>8</sup> Including architects, lawyers, accountants, and engineers, but also other professions for example pharmacists, surgeons and dentists, and psychologists.



price is now fully based on spot market prices and no longer on oil-indexed prices. This measure alone reduced gas consumers' prices by about 7%. Once again, the impact assessment of this reform has been performed through the OECD product market regulation indicator (PMR).

Overall, the reform induces a reduction of 0.095 in the 2013 PMR value<sup>9</sup>. Consequently, the mark-up in the energy sector after the reform would then be equal to 25.4%, while without the reform it would have been 25.7% (implying a mark-up shock of 0.3%-points).

**Both reforms (a) and (b) affect the services sector mark-up.** The latter reduces the energy sector mark-up by 0.3%-points, while the former lowers the professional services mark-up by 2.5%-points. Together, the reforms imply a reduction in the services sector mark-up of 0.2 pp. (from 13.1% to 12.9%). The major part of this effect stems from the reforms in the professional services sector while the reforms in the gas and electricity market contribute to a small extent. Finally, using the results from Canton, Ciriaci and Solera (2014), the professional services reform increases the allocative efficiency (AE) by 0.028<sup>10</sup>. The increase in the average level of labour productivity in professional services is then estimated at 2.04%<sup>11</sup>. This is phased-in over 5 years.

### 3.2 The 2012-13 simplification of public administration reform

The reform includes a range of simplification measures to the benefit of citizens and firms, in the labour market, culture, construction, taxation and public procurement, with a specific focus on favouring the development of public-private partnerships. Specifically, the reform includes measures such as: simplifying the framework for infrastructure investment; facilitating the setting-up of businesses; financial advantages for young entrepreneurs; widening the scope of e-government; establishing a business tutor, whose mission is to accompany firms in their activities and the accomplishment of the administrative formalities. The reform is simulated through a reduction in the overhead cost of labour (or administrative costs). Using estimates of the Italian government on total administrative costs based on the standard cost model and simulating a gradual phasing-in (linear cost reduction), the administrative costs would reduce from EUR 24.9 bn in 2012 to 22 bn in 2015 (-11.6%). Growth will be therefore positively impacted by this reduction.

### 3.3 The 2012-13 labour market reform

The reform targeted the rigidities and segmentation of the labour market. The simulation concerned two strands of the reform. First, the reform improved exit flexibility by modifying the legal framework on open-ended contracts and introducing disincentives to the use (or abuse) of temporary and atypical contracts. To assess the impact of this measure, the OECD EPL indicator for regular workers (individual dismissals) has been used. This indicator changed from 2.595 in 2012 to 2.412 in 2013. In order to translate this change into an actual productivity shock, we refer to a study of Bassanini et al. (2009). The estimation of Bassanini et al. (2009) suggests that a one-point decrease in the summary EPL indicator for regular workers could translate into an aggregate yearly labour productivity growth effect of 0.14 percentage points (see also the survey of Martin and Scarpetta [2011]). Therefore, this modification in the employment protection legislation (EPL) was mapped into a +0.16% productivity shock bringing about a positive impact on GDP (Table 3.a). Second, the reform strengthened active labour market policies (ALMP): an additional government spending of €1.5 bn over 2014-18 has been devoted to the implementation of the Youth Guarantee scheme. That led to an estimated ALMP spending increase of + 5.5% and so to a slightly positive impact both on employment and GDP (Table 3.a).

A third strand of the reform could not be modelled. The reform made more uniform and somewhat more generous the unemployment benefit system while reforming wage-supplementation schemes (Cassa integrazione), with the aiming of shifting protection from the job to the worker and reducing fragmentation in

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<sup>9</sup> This was inferred from the answer to the question Q.2.2.1G3 "What is the degree of vertical separation between a certain segment of the gas sector and other segments of the industry?" Following the move from "legal separation" to "ownership unbundling" for gas transmission, the answer changed by 0.19. This value was then divided by two as the PMR used for the simulation contains both electricity and gas with equal weights.

<sup>10</sup> Canton, Ciriaci and Solera (2014) calculations:  $0.49 \times 1.748 \times 0.033 = 0.028$

unemployment spending. Before the reform, the Italian unemployment benefit was much less generous than the EU average (the net replacement rate over 60 months was 9% against an EU average of 29% according to the OECD's indicators) and many employees were not eligible for any benefits. These weaknesses were partly compensated by the large use and extended duration of wage-supplementation schemes. The reform increased the duration of the unemployment benefit from 8 months to 12 months for employees below 50 years of age, but more importantly, it made the system more uniform by extending eligibility to the single unemployment benefits. It also reduced the scope for the use of wage supplementation schemes. A literal translation of the reform to the parameters of the model would imply that the generosity of unemployment benefits increase by 50% (the net replacement rate increases from 9% to 13.5%). However it was not considered appropriate to include this measure in the current exercise. The main reason is that the methodology used in the model simulations focuses on the incentive effects of unemployment benefits: overly generous benefits reduce the incentives of the unemployed to look for jobs. Arguably, there is a significant non-linearity in this effect that is not modelled in the current exercise. In very generous systems the disincentive effect may be more than proportionally higher than in less generous systems. This appears to be relevant in the Italian case where the unemployment benefit is less generous than in peer countries, thus the disincentive effects are likely minimal. The economics literature acknowledges that, in the case of less generous systems, other effects may predominate which are related to labour market flows. Unemployment benefits may allow jobseekers to find better job matches. Further, they may allow the employed to move more freely between jobs. The envisaged reduction of wage supplementation schemes would also contribute to this effect. This increased turnover and better labour market matching may increase the productivity of the economy (for this argument see, e.g., Boeri and Macis, 2010). International organisations welcomed this reform measure for its potential to reduce labour market segmentation and making the Italian unemployment benefit system more uniform. There is reason to expect that the reform will also increase turnover and thus productivity in the Italian economy. Given that these beneficial effects would not be taken into account in the model-based simulations, this reform measure is not quantitatively assessed in this exercise.

### 3.4 The 2013 tax reforms

The package included the following measures:

(a) The VAT standard rate increased from 21% to 22% on 1 October 2013. Given that the change enters into force in the course of the year, the tax increase affects the implicit tax rate (ITR) on consumption in two years. It increases from 17.69% in 2012 to 17.80% in 2013 and 18.25% in 2014. The overall increase of the ITR on consumption is 0.55 pps.

(b) The tax burden on labour also shrank thanks to a reduction of the income tax (IRPEF), via changes in the tax brackets at the low end, and of the contribution rate for social insurance (INAIL, which affects manufacturing and construction more than services). The overall budgetary cost amounts to EUR 2.5bn per year. In the translation, only the share of personal income tax (IRPEF) revenues falling on labour employed is taken into account. We also assume that the revenue effects for 2014 capture the full-year impacts of the reform. As a result, a 0.34 pps reduction in the ITR on labour is derived as it decreases from 42.8% in 2012 and 2013 to 42.46% in 2014. The two measures (a) and (b) shift the tax burden away from labour towards consumption. As a result, the tax structure becomes less distortionary, which has a positive impact on GDP of 0.1% by 2020. In the case of Italy, the tax burden on productive factors was assessed to be too high (see CSRs 2013 and 2014) so that a shift towards consumption and property taxation, among others, was deemed to be conducive to growth.

### 3.5 The 2014 and 2015 tax reforms

The reforms included measures to reduce the labour tax wedge and improving facilitating access to finance for SMEs.

(1) The reduction of the labour tax wedge involves two measures:

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<sup>11</sup> To translate AE changes in shifts in labour productivity results in ECFIN (2013) are used, where an increase in AE by 1%-point corresponds with an increase in the level of labour productivity of 0.73%. Therefore:  $0.73 \times 2.8\% = 2.04\%$ .

(i) IRPEF (personal income tax) for low-income earners is reduced through a tax credit of EUR 80/month for net wages up to EUR 1 500 per month (EUR 25 000 gross per year), introduced as from May 2014. The cost of the measure is estimated by the government at around EUR 10bn or 0.6% of GDP per year (around EUR 7bn in 2014). Additional reduction in IRPEF due to more generous allowances<sup>12</sup>, with a budgetary cost of EUR 1.26bn in 2014, up to EUR 2.86bn in 2016 are also simulated in the exercise. IRPEF has also been reduced through more generous allowances and lower taxes on productivity premia. This translates into a decrease in the ITR on labour from 42.8% in 2012 and 2013 to 42.62% in 2014, 42.51% in 2015 and to 42.4% in 2016 and 2017. These measures are to be financed by expenditure cuts and by increases in consumption tax (VAT – reverse charge and safeguard clause) with a budgetary impact of around EUR 2.9bn in 2015 and EUR 1.7 bn in 2016 and 17.0 in 2017. The ITR on consumption would then remain stable to 17.7% in 2014 and then increase to 18.0% in 2015, decrease to 17.9% in 2016 and then increase to 19.4% 2017. The overall increase in ITR on consumption is 1.68 pps between 2013 and 2017.

(ii) IRAP (regional corporate income tax) is reduced through the deduction of labour component from the tax base while the cut in the IRAP rate enacted by the previous government is repealed. Overall, this measure is worth EUR 5.6 bn per year. The change is therefore translated in a reduction of the ITR on labour from 42.8% of 2012-14 to 42.21% and 41.74% respectively for 2015 and 2016. The change over the period is -1.06 pps. This measure is meant to be financed via: (a) higher withholding tax on households' financial income (to 26% from 20%)<sup>13</sup>, whose overall revenue impact is estimated is EUR 3.3bn in 2015 and EUR 3.9bn in 2016; (b) increase in stamp duties on financial assets<sup>14</sup>, with a revenue impact of around EUR 1.5bn in 2014 and 1.3bn as from 2015. Both the financing measures increase the ITR on capital from 37% in 2012-13 to 37.49% in 2014, 38.04% in 2015 and to 38.13% in 2016. The overall impact increase in the ITR on capital is 1.13 pps between 2013 and 2016.

The foregoing IRAP and the IRPEF reductions were translated into cuts in the ITR on labour, with the EUR 80 tax credit affecting only low-skilled workers. When considering the change in the structure of taxation, the employment effects are positive but the GDP effects are small.

(2) The second objective involved the strengthening of the allowance for corporate equity (ACE). ACE allows firms raising new equity or reserving profits to deduct an amount from income taxes equal to the volume of new equity times a notional rate (similar to deducting interest payments on a bank loan), thereby reducing Italian firms' debt bias in external funding and making their balance sheets more solid (naturally the measure also lowers corporate income tax intake by the state). The notional rate was set at 3% when it was introduced in 2012, but has been raised to 4% in 2014 and will rise further to 4.5% in 2015 and 4.75% in 2016. The fiscal impact is in the range of EUR 0.9bn as from 2015. According to the Bank of Italy, this is enough to almost entirely eliminate the debt bias. Istat (the Italian statistical agency) has done some modelling<sup>15</sup> on the effect of ACE in the year 2014. They found that in 2014 ACE would be beneficial for 31% of the firms in the model. Therefore, for beneficiary firms, the effective corporate income tax rate would decrease by 2.3 pps. to 26.2%. As a result, ACE would lower the corporate income tax (IRES) intake by 5.4% in 2014.

ACE and the reduction in IRES (corporate income tax) were translated by an overall cut in the ITR on capital of 0.82% (from 37% in 2012-14 to 36.81% in 2015 and 2016 respectively, and further to 36.18% in 2017). As a matter of fact, as of 2017, a permanent reduction in corporate income tax (“IRES”) by 3.5 pps. (to 24% from 27.5%) leads to a revenue loss of 0.17% of GDP).

We also have estimated that ACE implies a reduction in the average effective corporate income tax rate, equal to  $0.31 \times 2.3 \text{ pp.} = 0.71 \text{ pp.}$  under the assumption that 31% of all firms benefit. To finance these tax cuts, a number of tax hikes on consumption and capital taxes were adopted, thereby increasing the ITRs on consumption (increase in VAT intakes through reverse charge and split payment as well as the increase in VAT standard rates and reduced rates as of 2016) and capital (stamp duty on household financial assets). As capital taxes are the

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<sup>12</sup> Stability law 147/2013

<sup>13</sup> as per DL 66/2014 and Stability law 2015

<sup>14</sup> Stability Law L 147/2013

<sup>15</sup> Istat model covers 860.000 firms

most distortive in the model, the negative effect on GDP of the financing measures is substantial but more than offset by the cuts described above.

The tax changes (1) and (2) are not fully budgetary neutral, but led to a deterioration in the government budget balance of 0.6% of GDP by 2020 because the tax increases do not entirely compensate the revenue losses from the tax cuts. In this exercise, we focus on the structural component of the tax reform and simulate tax measures in a budgetary neutral way with compensatory tax changes across the board. The Italian authorities announced other offsetting expenditure cuts to finance these tax reductions, but these are not included here. Overall, the tax reform has a positive effect on GDP of 0.4% by 2020.

(3) the repeal of a previously legislated increase in VAT and other taxes legislated for 2016 by the 2014 and 2015 Stability Laws (worth around EUR 16.8 billion or 1% of GDP) and its replacement by a more marked increase in VAT standard and reduced rates as of 2017: namely, VAT rate increases worth EUR 15.1 billion (0.9% of GDP) in 2017 and EUR 19.6 billion (1.2% of GDP) as of 2018 are introduced as a safeguard clause to guarantee the achievement of planned fiscal targets in the programme scenario. This measure may, however, be replaced in the future by other measures having an equivalent budgetary impact. This measure is already included in the 1(i) translation.

(4) the abolition of recurrent property taxation on first residences (worth overall EUR 3.6 billion or 0.22% of GDP), with a full compensation to Municipalities of the related lost revenue.

(5) a cut of property tax on agricultural real estate and immovable machinery for productive use (amounting together to EUR 935 million or 0.06% of GDP).

### 3.6 The 2014 public administration reform

The reform simplifies relationships between public administrations and private economic operators. The reform is again wide ranging, including for instance measures on opening of construction sites, public works, digitalization, simplification of bureaucracy, reduction of chambers' of commerce fees, emergency of hydrogeological instability and recovery of production activities. According to Italy's draft budgetary plan 2015, this reform is expected to reduce administrative costs by 3%. As the new reform is to be implemented during 2015-2017, we assume that it reduces the administrative costs from 22 bn in 2015 to 21.34 bn in 2017 (-3%). The new reform is then assumed to be additional to the 2013 reforms mentioned above. Notice that this is a shock to the same variable in QUEST (namely overhead labour, see reform no. 2 above), but with a different timing. It means that as from 2015, the simulated impact of the administrative cost reduction encompasses the effects of these both reforms (Table 3.b).

### 3.7 2014-2015 Reform of the labour market (Jobs Act)

The **Jobs Act** provides for a broad reform of the labour market, including revisions of the labour protection legislation, the unemployment benefit system, the wage supplementation scheme, the active labour market policies and the labour market contract types.

Only the measures concerning labour protection legislation were considered in this exercise. Notably, the Jobs Act revises dismissal rules for new hires under open-ended contracts. This is captured through its impact on the EPL (EPR component) indicator which decreases by 0.27. Based on estimates by Bassanini et al. (2009) and by Martin and Scarpetta (2011), this translates into an increase in labour productivity growth of 0.04% per annum. By 2020 this can raise GDP by 0.1%.

The other provisions described above are not mapped into the exercise because of the large uncertainties and difficulties in estimating the potential shock to the parameters of the model.

Furthermore, the measures taken to ease the rules for temporary contracts were also not considered in the exercise.<sup>16</sup> The methodology adopted in this exercise to assess EPL reforms is based on Bassanini et al. (2009).

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<sup>16</sup> Decree-law 34/2014.

The authors find evidence that the protection of workers with open ended contracts has an effect on productivity growth but they do not find an effect of the regulations concerning temporary contracts. For this reason, the assessment of EPL reforms is based on the OECD indicator of the employment protection of regular workers. These measures on temporary contracts do not affect the parameters of the model. Therefore, their effects cannot be assessed in this exercise.

### 3.8 2015 Market opening measures (annual competition law and privatisation plan)

The following measures were considered in the exercise:

(a) The partial privatisation of the electricity company (ENEL) from 31% public ownership to 25.5% (February 2015) is included in the quantification exercise through its impact on the PMR indicator. This partial privatisation lowers the public ownership indicator from 1.85 (the 2013 value) to 1.60. In turn, the PMR for electricity is reduced by 0.06. For the overall energy sector (defined as electricity and gas, with equal weights) the change is thus -0.03. Using Thum-Thyssen and Canton (2015), the change in the PMR is translated into a mark-up shock of -0.1 percent point in energy.

(b) For the postal service sector, two elements are taken into account: first, state ownership in Poste Italiane has been reduced from 100% to 60%; second, when the competition law is adopted certain administrative communications (judicial acts, administrative sanctions) are no longer under monopoly of Poste Italiane. These two changes would change the PMR indicator for postal services from 3.33 to 2.47.

(c) Regarding the telecommunication sector, the provisions included in the competition law are meant to make it easier to switch between suppliers. The relevant PMR questions<sup>17</sup> focus on the market share of new entrants in 3 sub-sectors: domestic fixed-line telephony, international fixed-line telephony and mobile telephony. For the 2013 wave the answers to these questions were 34.2%, 73.7%, and 66.8%, respectively. Due to reforms in the telecom sector market shares of new entrants will gradually increase over the next years. In the mobile telephony market shares of new entrants will reach 68.25% and 68.7% in 2014 and 2015 respectively. In the case of fixed-line telephony market shares of new entrants will reach 39.2% and 41.5% in 2014 and 2015 respectively. Taking into account 2015 market shares figures, the PMR sub-indicator in telecom is calculated to be reduced from 1.25 (the published number for 2013) to 1.1655, which would reduce the overall PMR for telecom from 0.42 to 0.39, and the PMR for communication by 0.015. In Thum-Thyssen and Canton (2015), the basic regression model linking mark-ups to the PMR for communication (i.e. the average of the PMR for post and telecom) yields an insignificant coefficient for the impact of regulation on mark-ups, but a modest significant positive impact is found when the years 1996 and 1997 are excluded. It is then found that a 1 point increase in the PMR for communication increases the mark-up in communication by 1.25%-points. Finally, the PMR value in communication sector would fall by 0.45 (of which 0.43 due to the reform in postal services) reducing the mark-up in communication by 0.56%-point.

A number of provisions are not taken into consideration for the current exercise:

(a) The planned privatisation of Ferrovie dello Stato (2016) has not been considered because not sufficient information is available at this stage.

(b) Important provisions of the annual competition law regarding professional services (notaries' reserve of activity for the registration of immovable property sales shared with lawyers<sup>18</sup>; non-professional shareholders allowed in law firms<sup>19</sup>; engineers allowed to set up limited liability companies<sup>20</sup>) because are not catered for by the PMR indicator. In particular, the current value of the relevant PMR indicator already indicates that law firms and engineering services are fully liberalised. Therefore, only the first element of the reform could effectively

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<sup>17</sup> The questions are Q3.2.3\_i, Q3.2.3\_ii, and Q3.2.3\_iii: domestic fixed-line telephony, international fixed-line telephony and mobile telephony respectively.

<sup>18</sup> The relevant PMR question is Q8.1.2\_4

<sup>19</sup> relevant PMR question is Q8.3.2: according to the answer to this question, this is already fully liberalised in Italy

<sup>20</sup> relevant PMR question is Q8.3.3: also here the answer already indicates full liberalisation in Italy

lead to a change in the PMR. However, question Q8.1.2\_4 belongs to a subcomponent called "For how many tasks does the legal profession have an exclusive or shared exclusive right?". When the number of professions is above 3, the PMR sub-indicator is equal to 6. Now 10 legal professions have an exclusive right. Even if the number of legal professions with exclusive right is reduced to 9, the sub-PMR will still be 6. So for regulated professions the envisaged reforms would not lead to a change in the PMR.

(c) Measures on insurance, pharmacies, banking and fuel distribution sectors are not taken considered in the exercise as these sectors are not covered by the PMR indicator.

### 3.9 2015 Education reform

The reform aims at improving the quality of the education system and reducing the drop-out rate. The reform introduces an evaluation system for teachers and principals, establishes clear and stable system to strengthen work-based learning and increases the number of teachers. Only the latter element is considered in this exercise. Notably, on the basis of the implied additional fiscal resources (equivalent to 0.07% of GDP per year) on the education of new pupils and students at primary and secondary levels, this reform is translated into a gradual shift in the skill distribution of the labour force. The shares of high and medium skilled increase by 0.05 pps and 0.28 pps respectively, while the low skilled share falls by 0.33 pps on average by 2025. This leads to an increase of GDP by 0.15pp over the baseline by 2020.

### 3.10 Conclusions

All in all, the reform measures assessed here **raise GDP by 1.3% by 2020**, and employment levels by 1.5%. Structural reforms also help to improve the budgetary position. The gains in output are not insubstantial and would add on average almost 0.25 pps to growth rates over the next five years.

The estimated GDP impact is smaller than the estimates from a benchmarking exercise in which half the gap with best performers is closed (Varga and in 't Veld (2014)). Under such farther reaching reforms, GDP can be boosted by 4% after 5 years, and 8.5% after 10 years. This indicates that the reform measures considered in the current exercise are only going some way in closing these gaps with best practice, and more efforts are needed.

The estimated GDP effects reported here are for the measures that can be quantified in a reliable manner. There are however other reform measures reported by the Italian authorities that have not been assessed here because quantification cannot be done reliably through e.g. an analysis based on PMR indicators. The impact of those measures may not be negligible, but are hard to verify in an analytically rigorous manner and are therefore not included here. In that sense the estimated GDP impact reported here may give a lower bound of the potential impact of all the reforms undertaken.

### 3.11 Measures not quantified

- **2012-2015 justice reforms:** The recent reforms in the Italian civil justice system are estimated to reduce the number of first instance courts and lower the litigation rate. Civil courts were re-organised (notably by consolidating, reducing their number and increasing the average court size) over 2012-2015 with the aim of increasing their efficiency, through specialisation and economies of scale. Also, compulsory mediation was introduced in 2013, as a way to reduce the high litigation rate. Some additional reforms for the judiciary system have been introduced in 2014. In particular: i) voluntary conciliation (managed by the parties' lawyers) on complementary matters; ii) resorting to lawyers as arbitrators to solve pending cases; iii) increasing the opportunity cost of unjustified litigation by new regimes of legal expenses and overdue interests. Furthermore, measures were taken on "de-jurisdictionalisation" and to reduce the backlog of civil cases. Finally, digitalisation is enhanced in civil, administrative and tax-related. According to estimates presented in Lorenzani and Lucidi (2014), the reduction in the total number of first instance courts by 48% (effect of the geographical reorganisation of courts) is estimated to raise the entry rate of new firms by 2.45 pp. The reduction in litigation rates by 2.9% (effect of reform in mediation) is estimated to raise the entry rate by 0.17 pp. The next step requires translating the change in entry rates into a productivity shock. The estimated increase of the entry rate of new firms by 2.62%-point would increase allocative efficiency by 0.008, which corresponds with an increase in

the level of average labour productivity of about 0.6%<sup>21</sup>. Assuming a fast introduction of this effect in model simulations, GDP will increase by 0.34% by 2020. However, the implied increase in the birth rate seems extremely high, in particular as the birth rate of new firms in Italy is not lower than that in other countries. As these estimates are surrounded by too large uncertainties, this was not included in our tables.

- **2013 establishment of the Italian Transport Authority** was created by decree n. 201 of December 2011 and became operational in September 2013. It is charged with several regulatory functions in the transport sector. However at this stage it was not included in the simulation because it was not possible to estimate a change in the PMR indicator following its introduction.

- **2014 reform of the broadband:** the government exploited the approval of the framework agreement on state aid for broadband between IT and DG COMP opening the possibility for the local and regional administrations to partly (up to 70% in some cases) finance investments in broadband and fast broadband in non-served zones (the so-called white spots) through public tenders. The competition authority will release also unbundling prices (e.g. compulsory reference prices for wholesale to other operators) for optical fibre. The available funding is mostly committed to southern regions (using EU funds for convergence). The chosen zones are all white spots, but they tend to be the most profitable ones. This measure should open up competition in the provision of high speed broadband services to the consumers. An inappropriate choice of the price could however slowdown investments in next generation networks. Significant implementing legislation is needed before this reform can become fully operational. In principle, the reform can be assessed through the mark-up channel. However, the product market regulation indicator for telecommunications does not contain sufficient level of detail on the price and non-price conditions to access the incumbent's network.

- **2015 reform of insolvency framework and banking sector:** Decree law 83/2015 introduced measures to narrow the NPL pricing gap in order to foster the development of a private NPL market. The decree, converted in Law 132/2015 in August 2015 contains a number of measures amending the insolvency framework as well as the civil procedure code. The reform is mainly relevant to the restructuring framework under the "concordato preventivo" rules and include amongst others: (i) the possibility to obtain interim financing during the preparatory phase of an application for reorganisation (lenders benefit from a senior ranking in the creditors' order of priority); (ii) opening up the disposal of debtor's assets to competing bids; (iii) under certain conditions allowing creditors representing more than 10% of total claims to submit a competing restructuring plan; (iv) tighter procedural deadlines. Changes have also been introduced to the bankruptcy procedure (e.g. a new two-year limit has been set to complete the realisation of assets). Novelties in the reorganisation procedures further include the possibility to circumvent a dissenting shareholders' assembly when the restructuring plan envisages a capital increase, and a new debt restructuring agreement specifically addressing cases where financial debts (i.e. towards banks) represent more than 50% of the debtor's total indebtedness. In the latter case, a binding cram-down on all financial creditors is possible if 75% among them agree with the restructuring. In parallel, the reform streamlined certain aspects of the standard foreclosure procedures (regulated by the civil procedure code) by introducing for instance the possibilities to repay debt or settle the price for an auctioned asset in instalments. Finally, subject to the adoption of an implementing act, a single electronic portal will allow the registration of all notices of forced sales (including auctions in the context of insolvency liquidations), country-wide. However, this reform was not included because of the large uncertainties and difficulties in quantifying the potential impact.

- **2015 enabling law to reform the public administration.** The law was adopted by the parliament in August 2015. It gives the government a mandate to adopt legislative decrees by August 2016 (for nearly all elements) which will only be subject to a non-binding opinion by the parliament. The enabling law foresees substantial reforms of the public administration: i) control over public administrations' activities will be strengthened by easing the access to public administrations' documents and data through a charter of digital citizenship; ii) decision-making processes will be accelerated, in particular for the conference of services<sup>22</sup>

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<sup>21</sup> Namely  $0.73 \times 0.8\%$ . Using empirical results from ECFIN's Product Market Review (ECFIN, 2013); the coefficient for the birth rate of 0.003 reported in Table I.1.3 and the reported relationship between AE and labour productivity.

<sup>22</sup> This conference brings together all administrations interested in a particular project.

(*conferenza dei servizi*); iii) new simplification measures, for example with regard to the procedure for obtaining the often-needed certified announcement on the commencement of activity (*segnalazione certificate di inizio attività* (SCIA)); iv) the role of the Prime Minister's office in coordinating public administration policies and solving conflicts between public administrations will be reinforced; v) existing prefectures will be reorganized in single territorial state offices and local public enterprises will be rationalized; vi) public administrations' management and staff recruitment, evaluation and mobility<sup>23</sup> will be reformed by rewarding merit, using performance assessments for career purposes and creating a mobility portal; vii) the public administration's right of self-remedy (*potere di autotutela*) – the possibility to change decisions taken previously, thereby creating regulatory uncertainty – has been restricted, while the “silence-means-consent” principle has been reinforced. If the public administration reform is fully adopted and implemented, the efficiency of the public administration and the quality of the service it provides should increase and decision-making as well as implementation should become smoother and faster. However, the ultimate impact will depend on the content of the implementing decrees. At this stage, it is thus not possible to get an estimate of the impacts, for instance in reducing administrative costs. As it is the case for the other measures, it is not possible to map the general objectives set out by the law into PMR changes.

**The Simplification Agenda 2015-2017** is an agenda agreed between the state and the regions in **December 2014**, establishing a coherent and time-bound framework to implement simplification measures and monitor progress. Although the agenda is now being implemented according to the timeline set, and progress reports are available, it is difficult to estimate the potential impact in reducing administrative costs.

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<sup>23</sup> Law 114/2014 of 11 August 2014 (Decree Law 90/2014 of 24 June 2014) already strengthened the mobility of all public administration employees (both voluntary and compulsory) to achieve a more efficient use of human resources. New provisions envisaged under the public administration reform enabling law should reinforce this, especially concerning staff from the old provinces that is not yet reallocated to regional public administrations.



Table 3.a: Italy, NRP 2013

Active Labour Market Policies		Increase ALMP spending by 5.5%										
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00
Employment	0.00	0.00	0.03	0.03	0.03	0.03	0.02	0.00	0.00	0.00	0.00	0.00
Trade balance (% of GDP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gov. balance (% of GDP)	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00
Employment protection legislation reform		Increase in labour productivity growth by 0.006% p.a.										
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.04	0.07	0.09
Employment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trade balance (% of GDP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gov. balance (% of GDP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax structure / compensated tax changes		Increase in implicit cons. tax rate by 0.55 pp, decrease in implicit labour tax rate 0.34 pp										
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.00	0.04	0.05	0.05	0.07	0.08	0.09	0.09	0.10	0.11	0.13	0.15
Employment	0.00	0.04	0.07	0.08	0.09	0.10	0.11	0.11	0.11	0.11	0.11	0.12
Trade balance (% of GDP)	0.00	-0.02	-0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Gov. balance (% of GDP)	0.00	0.04	0.02	0.01	0.02	0.03	0.03	0.04	0.04	0.06	0.08	0.10
Product market reforms		Decrease in final goods mark-ups by 0.13 pp, gradual increase in labour productivity of professional services 2% over 5 years										
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.00	0.03	0.07	0.10	0.11	0.12	0.13	0.14	0.14	0.17	0.19	0.23
Employment	0.00	0.01	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.06	0.08
Trade balance (% of GDP)	0.00	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Gov. balance (% of GDP)	0.00	0.02	0.06	0.08	0.10	0.11	0.12	0.13	0.14	0.18	0.24	0.30
Public administration reform		Gradual decrease in overhead labour by 11.6%										
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.01	0.04	0.05	0.05	0.07	0.08	0.09	0.10	0.14	0.19	0.20	0.21
Employment	-0.04	-0.03	-0.02	-0.02	-0.06	-0.06	-0.04	-0.04	-0.11	-0.10	-0.10	-0.10
Trade balance (% of GDP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gov. balance (% of GDP)	0.01	0.00	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00
Total												
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.01	0.11	0.19	0.23	0.28	0.31	0.34	0.35	0.40	0.51	0.60	0.68
Employment	-0.04	0.03	0.10	0.12	0.10	0.11	0.13	0.11	0.03	0.06	0.07	0.10
Trade balance (% of GDP)	0.00	0.00	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Gov. balance (% of GDP)	0.01	0.06	0.06	0.07	0.10	0.12	0.14	0.15	0.18	0.24	0.32	0.41

Notes: GDP and employment effects are expressed in %-difference from baseline, trade and government balance effects are expressed in pp. difference from baseline

**Table 3.b: Italy, NRP 2014**

		Gradual increase in implicit cons. tax rate by 1.55 pp, decrease in implicit labour tax rate by 1.77 pp, increase in implicit capital tax rate by 0.08 pp., 0.6 % of GDP tax-cut for low skilled, 0.22% of GDP cut in property taxes									
Tax structure / compensated tax changes		2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
Years		2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP		0.08	0.22	0.33	0.36	0.27	0.26	0.26	0.23	0.21	0.19
Employment		0.17	0.48	0.74	0.86	0.86	0.86	0.90	0.93	0.93	0.94
Trade balance (% of GDP)		-0.01	-0.07	-0.11	-0.09	-0.02	0.04	0.04	0.02	0.01	0.01
Gov. balance (% of GDP)		0.05	0.16	0.19	0.23	0.16	0.12	0.13	0.14	0.14	0.13
Public administration reform		Gradual decrease in overhead labour costs by 3%									
Years		2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP		0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.05
Employment		0.00	-0.01	-0.01	-0.02	-0.02	-0.02	-0.03	-0.02	-0.03	-0.03
Trade balance (% of GDP)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gov. balance (% of GDP)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total											
Years		2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP		0.08	0.24	0.35	0.38	0.30	0.29	0.30	0.28	0.27	0.24
Employment		0.17	0.48	0.73	0.84	0.84	0.84	0.87	0.90	0.91	0.91
Trade balance (% of GDP)		-0.01	-0.07	-0.11	-0.09	-0.02	0.04	0.04	0.02	0.01	0.01
Gov. balance (% of GDP)		0.05	0.16	0.19	0.22	0.16	0.12	0.13	0.14	0.14	0.13

Notes: GDP and employment effects are expressed in %-difference from baseline, trade and government balance effects are expressed in pp. difference from baseline.

**Table 3.c: Italy, NRP 2015**

Product market reforms		Decrease in services mark-ups by 0.05 pp.								
Years	2015	2016	2017	2018	2019	2020	2025	2030	2035	
GDP	0.00	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03	
Employment	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
Trade balance (% of GDP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Gov. balance (% of GDP)	0.00	0.01	0.01	0.02	0.02	0.02	0.03	0.04	0.05	
EPL		Increase in labour productivity growth by 0.04% p.a.								
Years	2015	2016	2017	2018	2019	2020	2025	2030	2035	
GDP	0.03	0.04	0.06	0.07	0.09	0.11	0.22	0.35	0.49	
Employment	0.00	0.00	-0.01	-0.01	-0.02	-0.02	-0.02	-0.01	0.00	
Trade balance (% of GDP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Gov. balance (% of GDP)	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	
Education		Gradual increase in the share of high-skilled by 0.32 pp, medium-skilled by 2.88 pp, decrease in the share of low-skilled by 3.2 pp								
Years	2015	2016	2017	2018	2019	2020	2025	2030	2035	
GDP	0.05	0.12	0.18	0.26	0.35	0.46	1.04	1.26	1.40	
Employment	0.05	0.14	0.23	0.33	0.45	0.57	1.14	1.21	1.22	
Trade balance (% of GDP)	-0.01	-0.01	0.00	0.01	0.02	0.02	0.04	0.02	0.02	
Gov. balance (% of GDP)	0.02	0.02	0.03	0.05	0.08	0.11	0.27	0.43	0.55	
Total										
Years	2015	2016	2017	2018	2019	2020	2025	2030	2035	
GDP	0.08	0.18	0.25	0.34	0.46	0.58	1.28	1.63	1.92	
Employment	0.05	0.14	0.22	0.32	0.44	0.57	1.14	1.20	1.23	
Trade balance (% of GDP)	-0.01	-0.01	0.00	0.01	0.02	0.02	0.04	0.02	0.02	
Gov. balance (% of GDP)	0.03	0.03	0.04	0.07	0.10	0.13	0.31	0.48	0.62	

Notes: GDP and employment effects are expressed in %-difference from baseline, trade and government balance effects are expressed in pp. difference from baseline.

**Table 3.d: Italy, Total impact**

**Italy: sum of simulated measures from NRP 2013, 2014 and 2015**

Years	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.11	0.28	0.54	0.80	0.95	0.99	1.10	1.29	2.07	2.50	2.84
Employment	0.03	0.27	0.66	0.97	1.18	1.29	1.39	1.47	2.10	2.18	2.24
Trade balance (% of GDP)	0.00	0.00	-0.06	-0.10	-0.08	0.01	0.06	0.07	0.07	0.05	0.04
Gov. balance (% of GDP)	0.06	0.11	0.26	0.32	0.39	0.36	0.37	0.45	0.69	0.94	1.16

Notes: GDP and employment effects are expressed in %-difference from baseline, trade and government balance effects are expressed in pp. difference from baseline.

## 4. Impact assessment of reforms in France

This section presents an overview of the reforms quantified in this study and their link to the shocks given to the model. For France, this exercise focusses exclusively on reforms contained in the 2015 NRP. This includes the tax measures to reduce labour costs and corporate taxes, namely the CICE and the Responsibility and solidarity pact, product market reforms, including the partial privatisation in network industries, the reform of the Sunday and evening openings, the reform of regulated professions, and the reform of the electricity regulated tariffs. The list of selected reforms also includes R&D measures and programmes to foster public investments, active labour market policies and the education reform. The measures that were not assessed are briefly presented in the end of the section.

The reform measures assessed here raise GDP by 0.4% by 2020, and employment levels by a similar order of magnitude, while having a small positive impact on the government balance (see table 4.b).

### 4.1 Tax measures: CICE and Responsibility and solidarity pact

The **CICE and the Responsibility and solidarity pact** aim to reduce labour costs and corporate taxes. The CICE is a corporate income tax credit based on the salaries of low and middle income earners. The Responsibility and solidarity pact cuts both employers' social contributions for low and middle income earners, and corporate taxes. Reducing the tax wedge on labour and capital has a positive impact on employment and growth.

What is reported here is the impact of the reform on the structure of the tax system, and the reduction in the implicit tax rate on labour is compensated by corresponding increase in other tax rates. The quantification of these tax measures captures only the effect of shifts in the relative tax share of different categories of taxes. Note that in the CICE and the Responsibility and solidarity pact, these tax measures are in fact financed through VAT increases and public expenditure cuts and the economic impact of this differs from what is reported here<sup>24</sup>. Our methodology does not allow us to measure the potential impact of lowering the overall tax burden while reducing public expenditures.

#### (a) Social contributions

A reduction in social contributions of firms is taking place over the period 2013-17 through the Competitiveness and employment tax credit (CICE) and the Responsibility and solidarity pact. Both measures aim to reduce the cost of labour and improve the profit margins of firms, thereby boosting employment and competitiveness in the medium term.

The CICE, a tax credit aiming to reduce the labour cost by EUR 20 bn at horizon 2017, targets lower salaries (between 1 and 2.5 times the minimum wage). It was voted in December 2012 and its implementation has begun on 1 January 2013. The French authorities indicate that the tax claims of the CICE represented EUR 10 bn in 2014 and should represent EUR 16 bn in 2015.

The Responsibility and solidarity pact aims to reduce employers' social contributions by EUR 10 bn by targeting wages up to 3.5 times the minimum wage. It was voted in July 2014 and its implementation has begun on 1

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<sup>24</sup> Model simulations of reductions in social contributions included in the CICE and the Responsibility and solidarity pact but financed through cuts in expenditure and an increase in VAT are reported in M. Burgert, L. Granelli, H. Naudts, "Recent reforms on the cost of labour in France – An assessment of the '*Crédit d'impôt pour la compétitivité et l'emploi*' and the '*Pacte de responsabilité et solidarité*' in France", European Economy – Economic Brief, European Commission (forthcoming). According to these simulations, which take into account the actual funding scheme of these measures, these measures would instead boost GDP by 0.4% and could deliver up to 150 000 additional jobs by 2020, especially for the low income earners.

January 2015. The French authorities indicate that the Responsibility and solidarity pact should represent EUR 5.5 bn in 2015, including a further reduction in social contributions of EUR 4.5 bn by targeting wages up to 1.6 times the minimum wage, and EUR 1 bn for self-employed workers. A further reduction in social contributions concerning wages from 1.6 to 3.5 times the minimum wage should take place on 1 January 2016<sup>25</sup>.

All in all, the total revenue impact is as follows:

	2014	2015	2016	2017	2018
<b>Total revenue impact of labour tax reforms (EUR bn)</b>	<b>-10.32</b>	<b>-21.96</b>	<b>-28.09</b>	<b>-29.15</b>	<b>-30</b>
Total labour tax reimbursements (EUR bn)	-6.09	-15.19	-21.11	-26.61	-30

The reform affects the **implicit tax rate (ITR) on labour**. In the translation of the reforms it is assumed that the relevant ITR, without the reform, would remain stable at its 2012 level (latest available data from Eurostat). To single out the structural component of the reforms, compensatory changes are calculated involving all three types of taxes modelled in QUEST (capital, labour and consumption). Such *ex ante* compensation takes place in proportion to the pre-reform shares of the different taxes in the overall tax take.

In our simulations, the ITR on labour declines from 39.50% to 37.09%. This 2.41 pp decline is compensated by a 1.45 pp increase in the ITR on capital, 1.25 pp on labour, and 0.62 pp on consumption. These changes are phased in throughout 2014-2018, following the estimated total labour tax reimbursements.

#### (b) Corporate taxation

The Responsibility and solidarity pact also includes a EUR 10 bn reduction in corporate taxation. Corporate tax rates (EUR 4 bn) will be reduced and the Corporate solidarity social contribution (C3S), a turnover tax based on total gross revenues of firms, will be abolished (EUR 6 bn). Implementation is ongoing. In 2015, the C3S is reduced by EUR 1 bn, targeting SMEs. The C3S should be abolished by 2017. The Exceptionnal contribution on corporate tax should be abolished in 2016. A reduction in the corporate tax rate is announced for 2017, from 33.3% to 32%. These measures represent an additional cost of EUR 1 bn in 2016 and EUR 4 bn in 2017.

All in all, the total revenue impact is as follows:

	2014	2015	2016	2017	2018
<b>Total revenue impact of corporate tax reforms (EUR bn)</b>	<b>0</b>	<b>-1</b>	<b>-4.5</b>	<b>-10</b>	<b>-10</b>
- of which corporate income tax	0	0	-2.5	-4.5	-4.5
- of which C3S	0	-1	-2	-5.5	-5.5

In our simulations, the **ITR on capital** declines from 46.90% to 45.00%. This 1.90 pp decline is compensated by a 0.46 pp increase in the ITR on capital, 0.40 pp on labour, and 0.19 pp on consumption. These changes are phased in throughout 2015-2018, following the estimated total revenue impact of corporate tax reforms.

#### 4.2 Product market reforms

On product market reforms, the quantification exercise includes the partial privatisation in network sectors (gas and telecom), the reform of the Sunday and evening openings, reforms of the regulated professions included in the Macron Law, and the reform of the electricity regulated tariffs. The sum of these product market reforms was

<sup>25</sup> The French authorities have announced that the implementation of this new step would instead take place on 1 April 2016, with a three months delay. The quantification of the reforms undertaken here is however exclusively based on the 2015 NRP.

translated into a reduction in the **final goods price mark-up** of 0.21 pp and a 0.03% increase in **labour productivity**.

#### (a) Partial privatisation in network sectors

The French government is currently selling EUR 10 bn worth assets from its financial portfolio. Public ownership in the main gas company (Engie) decreased from 36% to 32.76%. This would change the public ownership sub-indicator of the PMR for gas from 2.40 to 2.25, and it would reduce the PMR for gas from 2.52 to 2.485. The PMR for energy would then be reduced by half of this, i.e. 0.0175. Using Thum-Thysen and Canton (2015), this would reduce mark-ups in energy by 0.05 percent point. Applying the results in Table 2 of their paper on the PMR sub-indicators (with a change in the public ownership in the PMR for energy of -0.075), this would reduce **mark-up in energy** by 0.165 percent point.

Public ownership in the main telecom company (Orange) decreased from 27% to 25%. This would change the public ownership sub-indicator of the PMR for telecom from 1.62 to 1.50, and it would reduce the PMR for telecom from 0.96 to 0.92. The PMR for communication (i.e. post and telecom) would then be reduced by half of this, i.e. 0.02. Using Thum-Thysen and Canton (2015, Table 6), this would reduce **mark-ups in communication** by 0.025 percent point.

Some words of caution are in order. This partial privatisation of the gas and telecom companies should not be seen as a genuine sectoral reform, but rather as an element of the portfolio management of the stakes in companies owned by the French state. Therefore, the disinvestment in Engie and Orange is not necessarily meant to reduce state involvement, but the revenues for the state could be used to invest in another company<sup>26</sup>. We do not have data on how the proceeds have been used. In addition, this disinvestment is done without the government losing oversight powers in line with the so-called Florange law, which gives double voting rights to long-term shareholders. So the reduction of public ownership is not expected to go hand in hand with a substantial change in the governance structure.

#### (b) Sunday and evening openings (Macron Law)

The recently adopted Macron Law increased the number of Sundays a Mayor could authorize retailers to open from 5 to 12. The conditions under which retailers could open until midnight and on Sundays were also modified and now depend on an agreement with social partners and are subject to increased compensation. The Macron Law also extended the touristic areas in which retailers can open every Sunday, which now also includes 12 major railway stations.

In August 2015, the number of working Sundays for which a Mayor can permit opening increased from 5 to 9. The number of permitted working Sundays will reach 12 in 2016.

The reform would reduce the PMR sub-indicator "regulation of shop opening hours" from 0.43 (the published number for 2013) to 0.29, which would lead to a fall for the overall PMR in retail from 2.64 to 2.61. Using the results in Table 1 in Thum-Thysen and Canton, this would lead to a reduction in the **mark-up in retail** by 0.14 percent point<sup>27</sup>.

#### (c) Regulated professions

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<sup>26</sup> According to the announcement by Emmanuel Macron on 15 October 2014, there will be a reconsideration of general public portfolio management worth EUR 10 bn. Of these EUR 10 bn, EUR 4 bn will be used to reduce the French government debt, EUR 6 bn will be reinvested.

<sup>27</sup> If we consider the reform on touristic areas in which retailers can open every Sunday, the change in the PMR could be larger. But for that we need to change the officially published value of the PMR for regulation of shop opening hours in 2013, which is 0.43. The answer to the question whether there is regulation on the maximum number of Sundays or holidays that outlets can be open per year in Jurisdiction 1 is "no". As touristic areas in which retailers could open on Sundays were regulated, we changed the answer to "yes". The reform then assumes that the PMR sub indicator "Regulation on shop opening hours" goes from 0.86 (new calculation of the 2013 PMR sub indicator) to 0.29. It has been decided to not follow this strategy at this stage.

In May 2014, the provision that the capital and voting rights needed to be owned for at least 50% by accountants registered in France was replaced by a provision that European accountants need to detain at least two-thirds of the voting rights. Furthermore, the Macron Law aims to improve the competition for certain regulated legal professions (linking tariffs to costs and increasing the freedom of establishment of legal professions). The legal professions covered by the Macron law have an annual turnover of EUR 8 bn.

PMR for accounting is calculated to drop from 2.90 to 2.77. PMR for legal activities is calculated to drop from 3.48 to 3.10. The background of this latter calculation is the following. The officially published value of the PMR for legal activities in 2013 is 3.23. The answer to the question whether there is regulation on prices or fees is "no". As fees of notaries were regulated before the reform, we changed the answer to "yes", but also weigh the associated PMR increase by the relative size of the notary sector in legal activities (about 1/3); so we increase the PMR subindicator "Regulations on prices and fees" from 0 to 2 to calculate the corrected PMR before the reform. The reform then assumes that the PMR subindicator "Regulations on prices and fees" goes to 0 and the PMR subindicator "Inter-professional co-operation" goes from 4.50 to 3.50.

PMR for professional services is calculated to drop from 2.41 to 2.28. Using table 1 in Thum-Thysen and Canton, this would lead to a reduction in the **mark-up in professional services** of 0.66 percent point.

An alternative transmission channel through which a reduction of the PMR indicator can yield economic benefits is proposed in Canton, Ciriaci, and Solera (2014), where the impact on allocative efficiency is estimated. The conjectured mechanism is that a lowering of the PMR will improve business dynamics, and thereby lead to a more efficient allocation of productive resources. Their estimates suggest that the PMR reduction increases the churn rate (the sum of market entry and exit) by 0.23 percent point, which would improve allocative efficiency in professional services by 0.0075. For the translation into labour productivity the results on the relationship between allocative efficiency and labour productivity from the Product Market Review 2013 are used, where an increase in allocative efficiency by 0.01 corresponds with an increase in average labour productivity by 0.73%. This thus gives an improvement in **labour productivity** of  $0.73 \times 0.75\% = 0.55\%$  in professional services. A gradual phasing in of this effect is assumed (5 years).

#### **(d) Reform of the electricity regulated tariffs**

The methodology to set regulated tariffs for electricity has been primarily reformed in 2014 and further refined in the new law on the energy transition for green growth, enacted on 18 August 2015 to ensure their market contestability by alternative suppliers.

The impact of this reform was assessed by comparing a scenario where tariffs net of taxes and levies continue to be set according to the methodology prior to the reform and a scenario where tariffs are calculated with the new methodology. The data used come from publically available studies on regulated tariffs carried out by the French energy regulator in 2014<sup>28</sup>. The price difference between both scenarios was then translated into a reduction in the **mark-up in energy** assuming that the costs would remain constant<sup>29</sup>. The impact of the reform is presented in table 4.a.

The reform does not address the electricity tariff deficit faced by the incumbent. Indeed there are tariff deficits in France due to tariffs that were set below the accounting cost of EDF in the past and due to Public Service Obligation (PSO) charges not fully passed on to consumers. At the end of 2014, the deficit due to tariffs that were set below costs amounted to about EUR 2.1 bn, for which only a fraction will be recovered in 2015. The tariff deficit due to PSO charges not fully passed on to consumers amounted to EUR 4.9 bn in 2015, of which about EUR 2.3 bn is unrecovered by regulated (blue tariff) categories. A dedicated scenario has been constructed to account for the impact of a tariff increase for the recovery over three years starting from 2015/2016 of the tariff deficit due to tariffs set below costs. The results are presented in the table below. The latter scenario

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<sup>28</sup> CRE - Rapport sur les tarifs réglementés de vente d'électricité : Analyse des coûts de production et de commercialisation d'EDF / Tarification par empilement des coûts – 15 October 2014 and CRE - Rapport sur les tarifs réglementés de vente d'électricité – July 2015.

<sup>29</sup> The translation was based on the definition of a mark-up  $P = (1 + \text{mark-up}) * C$ .

implies less negative mark-up shocks over the three years of the recuperation. The GDP effects are still positive however as the mark-up is lower than in the baseline despite the recuperation. A special recovery path for the tariffs deficit due to PSO obligations was not considered taken the assumption of the energy regulator that this deficit would be recovered by 2017/2018 if the PSO charges continued to be increased at the same level as in the past years<sup>30</sup>.

Table Modelling of the electricity tariff reform together with the recovery of the deficit due to tariff set below costs

Product market reforms	Decrease in mark-ups by 0.16 pp. (Electricity only)											
	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	long-run	
Years												
GDP	0	0.02	0.04	0.04	0.06	0.06	0.07	0.08	0.09	0.10	0.24	
Employment	0	0.01	0.03	0.04	0.04	0.05	0.05	0.04	0.04	0.04	0.14	
Trade balance (% of GDP)	0	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.02	0.02	0.00	
Gov. balance (% of GDP)	0	0.02	0.05	0.07	0.09	0.10	0.11	0.15	0.21	0.28	0.02	

#### 4.3 R&D measures and public investments

The authorities have launched the innovation tax credit for SMEs (EUR 160 M in 2014, EUR 190 M in 2015), and exemptions for innovative start-ups (EUR 175 M in 2015) to stimulate research and development activity in France. These schemes are translated into a permanent increase in **R&D related tax-credits** by 0.02% of GDP.

Actions to foster innovation also include the extension of the Investment for future programme (PIA), voted in December 2013. This EUR 12 bn extension includes 10 bn of actual funding, covering the 2014-2020 period. The Investment for Future Programme (PIA) focuses on financing strategically important projects in research, energy transition and manufacturing. This measure was introduced as an increase in **public investment** by 0.07% of GDP compensated by the corresponding decrease in other government expenditure categories (transfers, government consumption and investment).

#### 4.4 Active Labour Market Policies

The French authorities have started two programmes for fostering the employment of young and low-skilled workers, namely the *emplois d'avenir* programme and the Youth guarantee scheme.

To support young people facing multiple obstacles in the labour market, the experimental Youth guarantee scheme, launched in October 2013 with the aim of supporting 10 000 young people in 2014, will be progressively extended to reach 50 000 young people in 2015, 60 000 in 2016, and 100 000 in 2017.

The *emplois d'avenir*, after creating 90 000 jobs by the end of 2013, was extended to support 180 000 jobs in 2014 and further extended to cover 250 000 planned jobs for 2015.

These measures were introduced as additional increase in ALMP spending totalling around 0.07% of GDP by 2017 with a slightly positive impact both on employment and GDP:

	2013	2014	2015	2016	2017
<b>New ALMP spendings (EUR mn)</b>	<b>297.2</b>	<b>1043.7</b>	<b>1346.8</b>	<b>1359.3</b>	<b>1465.5</b>
- of which <i>emplois d'avenir</i>	296.3	1014.5	1214.0	1200.0	1200.0
- of which <i>Youth guarantee scheme</i>	0.9	29.2	132.8	159.3	265.5

The measures are assumed to be permanent and to remain at their 2017 level from 2018 onwards.

<sup>30</sup> CRE - Rapport sur la contribution au service public de l'électricité (CSPE) : mécanisme, historique et prospective – October 2014



#### 4.5 Education

The French authorities have announced the creation of 60 000 additional jobs in education, in the form of various measures including the reform of the priority education for the most economically disadvantaged, the reform of the secondary education system (collège), the reform of study programmes, etc. According to the authorities, these reforms will increase public spending in education by EUR 1.4 bn at horizon 2017. These measures will contribute to increase the skills of the labour force, and boost productivity in the long run. However, their effects are negligible by 2020, as the skill structure of the labour force will only be affected much later.

#### 4.6 Conclusions

All in all, the simulated measures raise GDP by 0.4% by 2020. For comparison, our estimates from a benchmarking exercise in which half of the gap with best performers is closed (Varga and in 't Veld, 2014) suggest GDP can be boosted by 4% after 5 years, and 7½% after 10 years. This indicates that the reform potential in France is large. The comparison of these figures is however not straightforward, given the partial nature of the present quantification exercise and due to differences in the underlying methodology to quantify reforms.

#### 4.7 Measures not quantified

The estimated GDP effect reported here relates only to those measures that can be quantified in a reliable manner. There are however other reform measures reported by the French authorities that have not been assessed here because quantification cannot be done reliably through e.g. an analysis based on PMR indicators. The impact of those measures may not be negligible, but is hard to verify in an analytically rigorous manner and is therefore not included here. In that sense the estimated GDP impact reported here may give a lower bound of the potential impact of all the reforms undertaken.

Of the main reforms not quantified for France, the effects of the territorial reform and of the education reforms could not be assessed. Many reforms fostering competition in the goods and services market were also not quantified, due to the lack of corresponding PMR indicators (coach travel, further reforms in the legal sector, health sector, retail sector, etc.). Also, many labour market reforms were not quantified, due to their lack of impact on the EPL indicators.

##### **(a) Territorial reform**

A reform of territorial organisation is currently under way. The reform foresees a reduction in the number of local government regions (from 22 to 13), the creation of metropolitan areas as from 2015 and the streamlining of the responsibilities of the various layers of local government. While critical, the reform of local administration will yield efficiency gains only in the medium term. In a context where grants provided by central government to local government are being reduced sharply (by close to EUR 11 bn between 2015 and 2017), these reforms will not directly support spending cuts by local government. There is also a risk that administrative costs increase in the short term due to the implementation of the reform. This could further constrain the budget of the local authorities, with a possible negative impact on local investment and infrastructure. According to the authorities, who make reference to the OECD estimates, local administration reform would increase GDP by 0.3 percentage points by 2020 and by 1 percentage point over the long term. According to the OECD, the creation of metropolitan areas can facilitate construction works, e.g. for apartment blocks and public transport, which could boost economic activity through agglomeration effects. We have not quantified this reform as we have no further information on the economic impact of this reform, and on the appropriate transmission channels.

##### **(b) Simplification shock**

A 'simplification shock' is under way that aims at simplifying administrative procedures for businesses. Measures to be implemented by early 2016 include *inter alia* 100% online administrative procedures for firms, reducing the time-frame for the issue of planning permissions, breaking down barriers to learning, and allowing for a single permit for environmental authorizations. These measures are expected to reduce the administrative burden of tax regulations for companies in France and to encourage entrepreneurship, while supporting the viability of companies. The impact of the measures adopted between September 2013 and April 2015 is estimated at EUR 3.3 bn by the authorities (gross benefits for companies are estimated at EUR 1.467 mn). However, the administrative burden for companies of new regulations adopted since September 2013 (EUR 1506 mn) outpaced the savings allowed by the 'simplification shock'. The simplification shock is thus insufficient to contain the increase in administrative burden for companies stemming from the flow of new regulations. All in all, it has been decided not to further consider the reform in the quantification exercise.

### (c) Product market regulation

A number of measures reformed the goods and services market. The following reforms could not be quantified, due to the fact that there were no PMR questions. In some cases, such as the opening of the coach travel market, although a PMR question was available, the PMR indicator was not modified by the reform. This does of course not mean that the effects of these reforms are negligible.

Coach travel	The recently adopted Macron Law liberalised the coach travel market. However, the market is still heavily regulated for journeys under 100 km.
Legal professions	In February 2014, a decree was adopted that allowed notaries to have two salaried associates and that allowed lawyers at the <i>Conseil d'État</i> and the <i>Cour de Cassation</i> to engage salaried workers.
Health sector	The 2014 Consumption Law abolished the monopoly of pharmacies in the distribution of certain products, including pregnancy tests. Also the sales of glasses and contact lenses are opened to competition.
Retail sector	The ' <i>Loi relative à l'artisanat, au commerce et aux très petites entreprises</i> ' (ACTPE), adopted on 18 June 2014, aims at simplifying the procedure for the establishment of retail outlets. It foresees a streamlining of the procedures and also a more efficient appeal process. The Macron law also extends the power given to the French Competition Authority. The Competition Authority can provide advice on planning documents to ensure they are not unduly limiting entry. Moreover, retailers have to notify all purchases agreement they contract to the Competition Authority.
Regulated gas price	The methodology to set regulated tariffs for natural gas was mainly reformed in 2013. One of the main elements of the reform is to consider higher shares of natural gas spot prices in the formula used to calculate the evolution of regulated gas tariffs. This new methodology has been favourable to consumers in 2014 due to a sharper decrease of the natural gas price index compared to crude oil prices. However, the downward impact of this reform is uncertain in the future as it depends on the relative evolution of crude oil prices and natural gas spot prices <sup>31</sup> .
Threshold effects	In order to foster companies' growth, social and fiscal obligations for firms with more than 9 and 10 employees will henceforth be phased in from 11 employees onwards, moving somewhat the size threshold. Moreover, companies will receive a grace period of 3 years (until end 2018) for the additional social and fiscal requirements that are associated with the 50 employees threshold.
Other	The 2014 Consumption law also facilitated changing driving school and ending an insurance contract (no PMR question). The recently adopted Macron law also aims to improve the functioning of transport services (the powers of the transport regulator have been extended to motorway concessionaries) and banking services (facilitating bank changes). The draft law proposes to introduce improvements to the system of obtaining driver licences to shorten delays and reduce the costs.

<sup>31</sup> Since the end of 2014, crude oil prices have fallen more rapidly than natural gas prices.

#### (d) Reforms of the labour market

No EPL indicators were affected by these measures. Again, this does of course not mean that the effects of these reforms are negligible.

<i>Accords de maintien de l'emploi</i>	The <i>accords de maintien de l'emploi</i> , introduced in 2013, foresee that companies in serious difficulties can negotiate on adjusting salaries and working hours in return for providing a job guarantee to employees. The Macron contains further improvements of this scheme to facilitate its take-up by companies.
Law on social dialogue	The law on social dialogue was adopted in August 2015. The main reforms of this law are: (i) the rationalisation of the compulsory information and consultation sessions for the staff representatives and to group negotiation obligations; (ii) the adaption of the rules concerning the representation of employees to the number of company employees; (iii) the introduction of a form of representation for employees of very small businesses; (iv) the merger of two wage support schemes, ' <i>Prime pour l'emploi</i> ' and ' <i>RSA activit�</i> '.
Contract termination and dispute procedures	The Macron law enhanced the efficiency of the <i>justice prud'homale</i> , the obligatory dispute resolution for individual contract disputes.
Duration of fixed term contracts	All companies will be able to renew a fixed-term contract (CDD) twice, compared to once at the moment. Nonetheless, the overall default duration of a fixed-term contract would remain 18 months.
Hiring a first employee	From June 2015 until June 2016 a premium of EUR 4,000 will be given for hiring a first employee on a permanent contract or a fixed-term contract with duration of at least 12 months.
Specific reinforced counselling for jobseekers	The convention defining the priorities of the public employment services for 2015-2018 has been signed in December 2014. It provides for doubling specific reinforced counselling for jobseekers most in need, from 230 000 people covered in 2014 to 460 000 at the end of 2017.
Incentives to take up work	The transferability of individual rights to unemployment benefits ( <i>droits rechargeables</i> ), which enables a jobseeker to retain previous accumulated rights to unemployment benefits in future periods of unemployment rather than forfeit them when taking up a job, and which was introduced already in the inter-professional agreement adopted in January 2013, should increase incentives to take up work. Also, in the last unemployment benefit agreement between social partners, the waiting time to receive unemployment benefits has been increased for employees that received indemnities for dismissal beyond those legally foreseen.

**Table 4.a: France, NRP 2015**

ALMP		Gradual increase in ALMP expenditures by 0.07% of GDP									
Years	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	
GDP	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	
Employment	0.05	0.07	0.07	0.08	0.08	0.07	0.07	0.07	0.07	0.07	
Trade balance (% of GDP)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Gov. balance (% of GDP)	-0.02	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tax structure/compensated tax changes		Gradual decrease in implicit lab. tax rate by 2.4 pp., decrease in implicit capital tax rate by 1.9 pp.									
Years	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	
GDP	0.06	0.10	0.10	0.08	0.09	0.10	0.11	0.11	0.12	0.12	
Employment	0.07	0.14	0.16	0.15	0.16	0.17	0.17	0.18	0.18	0.18	
Trade balance (% of GDP)	-0.03	-0.04	-0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
Gov. balance (% of GDP)	0.08	0.09	0.08	0.06	0.07	0.08	0.09	0.12	0.16	0.21	
R&D subsidies and public investment		Gradual increase in R&D subsidy by 0.017% of GDP, temporary public investment of 0.07% of GDP									
Years	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	
GDP	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.08	0.07	0.06	
Employment	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Trade balance (% of GDP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Gov. balance (% of GDP)	0.01	-0.01	-0.01	-0.01	0.00	0.00	0.01	0.00	0.00	-0.01	
Product market reforms		Decrease in final goods mark-ups by 0.21 pp (incl. energy reforms) gradual increase in labour productivity by 0.03% over 5 years									
Years	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	
GDP	0.00	0.03	0.07	0.09	0.10	0.10	0.11	0.13	0.14	0.15	
Employment	0.00	0.03	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	
Trade balance (% of GDP)	0.00	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.03	
Gov. balance (% of GDP)	0.00	0.04	0.10	0.12	0.14	0.15	0.16	0.23	0.31	0.41	
Education reforms		Increase (decrease) in the share of medium-skilled (low-skilled) by 0.61 pp (-0.61 pp.)									
Years	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	
GDP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.07	
Employment	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.06	0.09	
Trade balance (% of GDP)	0.00	0.00	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	
Gov. balance (% of GDP)	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.04	0.05	

**Table 4.b: France, Total impact**

**France: sum of simulated measures from NRP 2015**

Years	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.11	0.20	0.25	0.26	0.30	0.32	0.35	0.40	0.43	0.46
Employment	0.14	0.25	0.29	0.29	0.30	0.31	0.31	0.34	0.36	0.39
Trade balance (% of GDP)	-0.03	-0.02	0.00	0.02	0.03	0.03	0.03	0.03	0.04	0.05
Gov. balance (% of GDP)	0.07	0.12	0.18	0.19	0.22	0.24	0.27	0.37	0.50	0.67

Notes: GDP and employment effects are expressed in %-difference from baseline, trade and government balance effects are expressed in pp. difference from baseline.

## 5. Impact assessment of reforms in Spain

This section presents an overview of the reforms quantified in this study and the link with the shocks to the macroeconomic model. The section includes the 2012 and 2014 tax reforms, the 2013 market unity law, the 2012 retail reform, the 2012 reforms of unemployment benefits and employment protection legislation, as well as the 2013 pension reforms. The measures that were not assessed due to insufficient information, their temporary character or small expected impact are briefly presented in the end of the section.

### 5.1 The 2012 tax reforms

The 2012 tax reforms in Spain included (i) the VAT reform, (ii) reduction of debt bias in the treatment of housing in personal income tax, and (iii) new taxes on electricity generation:

- In September 2012, the VAT rates were increased (standard rate from 18% to 21%, and the reduced rate from 8% to 10%), and some goods and services have been moved to higher tax rates. The reform is calculated to have brought EUR 2.44 billion of additional revenues from 2012 and EUR 7.44 bn from 2013. These are national estimates and they probably include behavioural effects. They should rather be seen as the upper bound.
- To reduce the debt bias in the treatment of housing in personal income tax (PIT), Spain withdrew tax compensation in PIT for house purchases made before 2006 and removed home mortgage deductions in PIT for purchases from 2013 onwards. According to July 2012 national estimates, elimination of the tax compensation for house purchases before 2006 was expected to bring EUR 0.43 bn of additional revenues from 2013, EUR -50 million from 2014, and EUR -40 m from 2015. Elimination of home mortgage deduction for house purchases from 2013 should bring an additional EUR 90 m from 2014. Moreover, the immediate reduction of home mortgage deductions for house purchases for high income earners would bring EUR 0.65 bn from 2014. In comparison, total revenues from PIT reached EUR 78 bn in 2012 (OECD). The reform should also have revenue effects in 2016 and later but no numbers are available. Effects on financing decision and purchase decision due to changes in deductibility rules are not captured in the model. It is assumed that the abolishment of the mortgage interest deductibility increases the tax burden on labour. Effects on the level of mortgages, housing purchase decisions etc. are not incorporated in this version of QUEST. For the ITR on labour only the share of PIT revenues falling on labour employed is taken into account (this share amounts to around 73%). Given the limited impact, potential effects on the ITR on capital, which includes the taxation of self-employed, are not taken into account.
- From the beginning of 2013 new taxes on electricity generation have been introduced to finance the electricity tariff deficit. The Law on energy taxes (15/2012) included a 7% single tax on electricity production (which according to the government brought EUR 1.28 bn), a tax on nuclear waste, a levy on hydro generation, and a carbon tax on fossil fuels. The taxes are paid by generators of electricity. However, one can expect at least a partial pass-through onto consumers. According to the authorities these new taxes, which only affect a specific sector, brought in total EUR 2.15 bn in 2013. It is assumed that these taxes fall on capital. Moreover, it has to be taken into account that the ITR on capital doesn't allow for a differentiation of the tax burden between different sectors. Higher production costs might be passed on to consumers but it is assumed that such effects are captured in QUEST.

Although the reforms have led to increases in implicit tax rates, they have been simulated assuming a revenue neutral adjustment of all taxes, so that the structural element of the reforms can be isolated. The compensation is made through an adjustment of all taxes (labour, consumption and capital) proportional to their initial share in revenue in Spain.

The increase in VAT in 2012 raised the implicit tax rate (ITR) on consumption by 1.18 pp in 2013. This is compensated with a decrease in the ITR on capital by 0.78 pp, a decrease in the ITR on labour by 1.07 pp, and a decrease in the ITR on consumption by 0.41 pp. Overall, this represents a shift from labour and capital towards

consumption taxes, with a positive impact on growth and employment already in the short term. The impact on government balance is positive in the short and medium term.

The reform of the debt bias in the treatment of housing in personal income tax reducing compensations and allowances is translated into an increase in the implicit tax rate on labour by 0.17 pp in 2013 and 2014, and is compensated with a decrease of the ITR on capital (by 0.05 pp), labour (by 0.08 pp), and consumption (by 0.03 pp). The measure has almost no impact on GDP, but can be understood as a negligible shift towards labour taxation, thus negatively affecting employment. The impact on government balance is slightly negative in the short and medium term.

New taxes on electricity generation, modelled as an increase in the ITR on capital by 0.71 pp in 2013, are compensated with a decrease in the ITR on capital (by 0.17 pp), labour (by 0.23 pp) and consumption (by 0.09 pp). Capital taxes are most distortive in the model, and this tax shift reduces output but supports employment. The impact on government balance is positive in the short and medium term.

Without the hypothetical compensatory reductions in taxes, all these consolidation measures would improve the budget but would have negative GDP and employment effects in the short and medium run. Positive GDP and employment effects are obtained when the tax increases are offset by hypothetical tax decreases, in order to have an ex-ante budgetary neutral shock that focuses on the structural component of the tax reform.

## 5.2 The market unity law

The market unity law, adopted in December 2013 aims at removing measures that may directly or indirectly obstruct the free movement of goods and services and the establishment of new operators throughout Spain. The law is likely to reduce the number of cases where authorisations (or other administrative acts) are required by the authorities. The principle of effectiveness throughout Spain aims at guaranteeing that all legally established economic operators, or all goods legally produced and placed on the market in a given part of Spain, may, a priori, perform the economic activity, or circulate throughout the Spanish territory, without additional authorisations or formalities being required by other competent authorities.

The law directly removes administrative requirements only in some areas. In most cases, further legislative action is needed. A series of sectoral conferences have been convened in March 2014 to review regulatory requirements at sector level. In order to estimate the potential impact of this reform, the Spanish government made a simulation exercise, based on a closing the gap approach. In the baseline scenario, the worst performing regions converge to the mean (implying a 35% reduction in the cost of setting-up a business).

Based on estimates from the Spanish government, we assume a reduction in the barriers for start-ups (entry costs) by 35%. However, the increase of TFP assumed by the ES authorities<sup>32</sup> was not considered. QUEST is able to handle entry costs directly, so that fewer assumptions are needed. Although the reduction in entry costs does not amount to a large direct stimulus, it has positive knock-on effects in the QUEST model, stimulating new entry, reducing fixed costs and leading to a reduction in mark-ups, so boosting GDP and employment (Table 5.a).

## 5.3 The 2012 retail reform

The 2012 retail reform made shop opening hours more flexible, liberalised sales periods, and simplified licensing procedures for small retail outlets. The retail and wholesale trade sectors accounted for 11.6% of gross value

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<sup>32</sup> The Spanish government uses the DSGE model REMS. The reduction of the start-up administrative cost has been translated into an increase of TFP. A positive and permanent shock on TFP of 1.25% is assumed.

added and 15% of employment in Spain in 2009.<sup>33</sup> They have a relatively large forward linkage effect (2.2), compared with an average forward linkage effect of 1.3 for the entire economy.

The reform leads to a reduction in mark-ups in the retail sector. According to the OECD PMR indicators on retail sector regulation, Spain has a relatively restrictive regulatory framework of the sector. A reverse engineering exercise reveals that the reform reduced the OECD PMR indicator for retail from 3.61 to 2.88. As a consequence, the retail sector mark-up decreases by 3.4 percentage points (from 14.3 % to 11.0 %). For the service sector as a whole, this implies a decrease in the mark-up by 0.5 pp. (from 14.9% to 14.4%). The reform has a positive albeit small impact on GDP, employment, and government balance (Table 5.a).

#### 5.4 The 2012 reform of unemployment benefits

The 2012 reform of unemployment benefits (UB) has reduced UB for the beneficiaries who draw them for more than six months. The maximum duration of UB is still two years, and in the first six months of unemployment still amounts to 70 percent of the previous salary. However, after six months of unemployment, the reform reduced the UB from 60 percent to 50 percent of the salary.

The indicator that serves as an input to the model is the net replacement rate of the UB over 5 years, for a manufacturing worker with a long job tenure and earning the average wage. In consequence of the reform, the net benefit replacement rate in the average of four family types declined from 47% in 2012 to 44% in 2013, an equivalent of a 6% cut. This leads to an increase in labour supply and boosts growth and employment (Table 5.a). The government balance is also considerably improved, as the reform affects both the expenditure (lower benefits) and revenue side (higher revenues from taxes).

#### 5.5 The 2012 reform of the employment protection legislation

The 2012 reform of the employment protection legislation (EPL) led to a small decrease in the OECD indicator for strictness of employment protection. The indicator for regular workers (individual dismissals) changed from 2.081 in 2012 to 1.948 in 2013. This was mapped to a productivity shock based on the empirical study of Bassanini et al. (2009), which suggests that a one-point decrease in the summary EPL indicator for regular workers could translate into an aggregate yearly labour productivity growth effect of 0.14 percentage points (see also the survey of Martin and Scarpetta [2011]).

The reform has an overall positive but small effect on GDP, and also on government balance (Table 1.a). The estimate does not take into account other elements of the 2012 labour market reform, like introducing more flexible working conditions, adapting collective bargaining to firm conditions, limiting the use of indexation clauses, or introducing incentives to indefinite hiring by SMEs.

#### 5.6 The 2013 pension reforms

The 2013 pension reforms in Spain have: (i) restricted access to early and partial retirement, (ii) introduced as of 2019 a sustainability factor, which will curtail the initial pension benefit in line with expected changes in life expectancy and (iii) introduced a new indexation mechanism for pensions. Following the projections made by the Working Group on Ageing Populations and Sustainability (AWG), these reforms were translated into an increase progressively over time in the labour participation of older people: +3.2 and +6.9 percentage points by 2020 and 2060, respectively, for the 60-64 age bracket. The increase in labour supply boosts growth and employment, in particular in the medium and long term (Table 5.a). The reforms also lead to a sizeable improvement in the government balance.

#### 5.7 The 2014 tax reform

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<sup>33</sup> Source: EU KLEMS database



The 2014 tax reform focuses on cuts in personal income taxes (PIT) and corporate income taxes (CIT):

- In the area of PIT, the number of tax brackets has been lowered from seven to five, rates have been reduced, family allowances increased, and some measures have been taken to broaden the base. The tax rates on savings income have also been reduced in two steps. The reform is estimated to reduce PIT revenues by EUR 3 342 million in 2015 and an additional EUR 2 675 million in 2016, based on national estimates. These measures affect the ITR on labour and the ITR on capital. For the ITR on labour only the share of PIT revenues falling on labour employed is taken into account. This share amounted to around 72.1% in the case of Spain in 2011, the latest year for which data is available. As regards the ITR on capital, first the changes in the PIT structure and the base concern the self-employed. The reduction in the taxation of savings affects capital income. Therefore, applying the PIT split, a share of overall 17.2% is allocated to the ITR on capital (7.4% due to the effect on the taxation of self-employed and 9.8% for the taxation of capital income).
- Reduction in CIT rates was proposed to be done in two steps (basic rate from 30% to 28% in 2015 and 25% in 2016 and reduction in reduced rates) and some measures affected the tax base (mainly aimed at a broadening of the base and a reduction of the debt bias). The reform is calculated to reduce CIT revenues by EUR 437 million in 2015 and an additional EUR 2 641 million in 2016, based on national estimates. Reforms in corporate taxation affect the ITR on capital.

The reforms have been simulated assuming a revenue neutral adjustment of all taxes, so that the structural element of the reforms can be isolated. The compensation is made through an adjustment of all taxes (labour, consumption and capital) proportional to their initial share in revenue in Spain.

The PIT reform leads to a decrease in the implicit tax rates (ITR) on labour in 2015 and 2016 by 0.83 pp and is compensated with an increase of the ITR on capital (by 0.3 pp), labour (by 0.4 pp), and consumption (by 0.17 pp). Such a tax shift has an expansionary effect in the short and medium term, but reduces output in the long run. It supports employment growth and has positive impact on government balance in the short and medium term.

The reform of capital taxation lowers the ITR on capital in 2015 and 2016 by 1.26 pp, and is compensated with a higher ITR on capital (by 0.3 pp), labour (by 0.4 pp), and consumption (by 0.16 pp). The reform has an expansionary effect, but negatively affects employment, and in the short and medium term also the government balance.

## 5.8 Conclusions

All in all, the aggregate effects of all measures reported in Table 5.a and Table 5.b, including the structural component of tax measures, are positive already in the short term. The GDP effects of the reforms announced in the 2013 NRP are already positive in 2013 (+0.17%) and in 2020 GDP is 1.3% higher than in the baseline. The structural component of 2014 tax measures is expansionary and boosts GDP already in the short term, but has almost no impact on government balance (Table 5.b).

Summing up, the reform measures assessed here have the potential of boosting GDP by 1.3% by 2020. Employment can be raised by a similar amount. The government balance improves by about 2% of GDP, mainly due to the reform of unemployment benefits. The gains in output are significant and imply that on average more than 0.2 pps. is added to growth rates over the next five years. As stated above, not all reform measures have been quantified in this exercise and estimates presented in the tables may underestimate the total impact of the reform effort undertaken in Spain. But to put these estimates in perspective, in Varga and in 't Veld (2014) we report a GDP gain of 3.2% after 5 years if, for all structural indicators, half the gaps with best performers are closed. This indicates that the reform measures considered here go only part of the way in closing the gaps with best practice and more remains to be done.

## 5.9 Measures not quantified

The ALMP reform of August 2013 combined a 30% cut in ALMP spending with changes in design to ensure a more efficient use of the funds (a partially outcome-based reallocation of funds). The reform can be decomposed into (i) the funding cut and (ii) the parametric reforms enacted to increase efficiency. The reform was not included, as there was not enough information to assess the effects of the second component and simulation would be limited to the fiscal consolidation impact.

The 2013 rental market reform has not been quantified due to insufficient information to assess effect on labour market participation. The effect is likely to be small.

The flat rate social security contribution for new indefinite contracts, adopted in February 2014, has not been included in the exercise due to its temporary nature.

The entrepreneurship law (14/2013) has reduced barriers for start-ups. To lower the initial costs of setting up a limited liability company, the law has created a limited liability company "in formation" with lower initial capital requirements. Under the regime, benefits registered by the firm have to contribute to a firm's capital stock, so that ultimately it reaches the minimum required for the limited liability company. It is actually an elimination of the credit market constraint on entrants. As the minimum capital requirement for limited liability companies is fairly modest (namely 3000 euros), it is considered that the quantitative impact of this reform (for example in terms of increased firm entry) would be limited.

The draft law to liberalise professional services could in principle be assessed through the PMR/mark-up channel. However, the planned reform does not affect directly the four activities on which the PMR indicator for professional services is based (i.e. accountants, architects, engineers, lawyers), but rather revises general conditions of conduct of professional bodies, so it is not possible to translate the effects of the reform into a QUEST shock.

Measures to strengthen competition in the petroleum sector at retail level were adopted in February 2013. One of the measures taken in order to enhance competition concerned the treatment of the exclusive supply agreements between suppliers and service stations. These special agreements were limited to a maximum of one year, with the possibility to be extended automatically on an annual basis for a maximum of three years under specific circumstances. This measure is expected to affect the energy supply by creating incentives to move to the most efficient service stations, but it will have a minor impact on the existing market structure. There are two main reasons: the restriction of the 30% maximum provincial market share, which limits the ability to bid for new contracts with the largest operators; and the short duration of exclusive supply contracts (as short as one year), which discourages new entrants to adapt aggressive competing offers. Therefore, given the small expected impacts such reform was not included in the QUEST simulation.

The 2015 reforms of the judicial system are intended to improve management of resources in the system. In particular, the goal is to free resources in justice from non-judicial tasks, to introduce greater flexibility in the judicial response, and to advance digitalisation. Because of concentration and specialisation, average disposition times could be potentially improved. Shorter disposition times should increase entry rates, leading to higher labour productivity (see judicial reforms in IT). However, at this stage the information available is insufficient to quantify this reform.

The insolvency framework has been reformed in 2014 and 2015.<sup>34</sup> The reform facilitates restructuring of over-indebted firms and intends to reduce the proportion of firms in insolvency proceedings which are being

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<sup>34</sup> In March 2014, refinancing agreements, a pre-insolvency procedure suitable for bigger debtors, were considerably reformed (RDL 4/2014, approved by the Spanish Parliament as Law 17/2014). In September 2014, the government made the proper insolvency procedures more flexible (RDL 11/2014, approved as Law 9/2015). In February 2015, the

liquidated (using the authorities' target of reducing the liquidation rate from around 90% to 75%). First, it offers more debt restructuring options (higher haircuts, longer loan extensions, debt-to-equity swaps, and extension of agreements to dissident creditors or secured creditors). Second, it promotes sales of firms as a going concern (e.g. facilitating transfer of contracts). Third, it involves more categories of creditors in negotiations (not only financial creditors, but also public creditors, or labour law creditors), and gives right of vote to creditors, who acquire claims after the insolvency procedure was launched. The reform should lead to survival and restructuring of some firms, which otherwise would have been liquidated. The measure has not been translated due to lack of insolvency statistics.

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corporate insolvency was further reformed and a framework for personal insolvency introduced (RDL 1/2015, approved as Law 25/2015).

**Table 5.a: Spain, NRP 2013**

		Decrease in unemployment benefit replacement rate by 6%										
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.00	0.06	0.15	0.21	0.24	0.26	0.27	0.28	0.30	0.37	0.45	0.66
Employment	0.03	0.14	0.25	0.33	0.36	0.38	0.39	0.40	0.41	0.47	0.56	0.79
Trade balance (% of GDP)	0.09	0.16	0.16	0.15	0.13	0.13	0.12	0.12	0.12	0.11	0.10	0.06
Gov. balance (% of GDP)	0.16	0.59	0.71	0.80	0.88	0.94	1.00	1.06	1.11	1.42	1.73	2.12
		Gradual increase in productivity shock 0.52%										
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.14	0.21	0.29
Employment	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00
Trade balance (% of GDP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Gov. balance (% of GDP)	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.04	0.07	0.12
		Gradual increase in elderly participation rate by 14%										
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.00	0.00	0.00	0.02	0.05	0.08	0.13	0.18	0.24	0.58	0.97	1.35
Employment	0.00	0.01	0.03	0.08	0.14	0.23	0.32	0.42	0.52	1.06	1.58	1.98
Trade balance (% of GDP)	0.00	0.01	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.13	0.15	0.13
Gov. balance (% of GDP)	0.00	0.01	0.03	0.06	0.10	0.16	0.22	0.29	0.37	0.87	1.46	2.07
		Increase in implicit cons. tax rate by 1.18 pp., increase in implicit lab. tax rate by 0.17 pp., increase in implicit capital tax rate by 0.71 pp.										
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.01	0.05	0.10	0.14	0.16	0.17	0.18	0.19	0.20	0.23	0.26	0.30
Employment	0.01	0.07	0.14	0.19	0.21	0.22	0.22	0.22	0.22	0.23	0.24	0.28
Trade balance (% of GDP)	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01
Gov. balance (% of GDP)	0.00	0.03	0.07	0.11	0.13	0.15	0.16	0.17	0.18	0.24	0.30	0.39
		Decrease in mark-ups by 0.48 pp.										
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.00	0.05	0.12	0.15	0.17	0.18	0.19	0.20	0.21	0.26	0.30	0.35
Employment	0.00	0.04	0.10	0.12	0.13	0.12	0.12	0.12	0.12	0.13	0.14	0.17
Trade balance (% of GDP)	0.00	0.04	0.04	0.03	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.01
Gov. balance (% of GDP)	0.00	0.04	0.10	0.14	0.15	0.16	0.17	0.18	0.19	0.26	0.33	0.41
		Decrease in entry costs by 35%										
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.00	0.00	-0.01	0.00	0.04	0.08	0.12	0.16	0.20	0.31	0.37	0.42
Employment	0.00	0.05	0.06	0.04	0.03	0.02	0.01	0.01	0.01	0.02	0.02	0.04
Trade balance (% of GDP)	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.01
Gov. balance (% of GDP)	0.00	0.06	0.06	0.05	0.06	0.06	0.08	0.09	0.10	0.16	0.22	0.28
		Total										
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.00	0.17	0.37	0.54	0.69	0.82	0.95	1.08	1.21	1.88	2.56	3.36
Employment	0.04	0.31	0.58	0.74	0.86	0.96	1.06	1.16	1.28	1.90	2.54	3.27
Trade balance (% of GDP)	0.10	0.23	0.26	0.25	0.24	0.25	0.25	0.26	0.27	0.30	0.31	0.24
Gov. balance (% of GDP)	0.16	0.72	0.97	1.16	1.32	1.48	1.64	1.81	1.99	2.99	4.11	5.38

Notes: GDP and employment effects are expressed in %-difference from baseline, trade and government balance effects are expressed in pp. difference from baseline.

**Table 5.b: Spain, NRP 2014**

Tax structure / compensated tax changes Gradual decrease in implicit labour tax rate by 0.83 pp. decrease in implicit capital tax rate by 1.26 pp.

Years	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.00	0.04	0.03	0.04	0.06	0.08	0.10	0.18	0.24	0.28
Employment	0.00	0.04	0.03	0.02	0.02	0.01	0.01	0.00	0.00	0.00
Trade balance (% of GDP)	0.00	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.01	0.00	0.00
Gov. balance (% of GDP)	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.04

Notes: GDP and employment effects are expressed in %-difference from baseline, trade and government balance effects are expressed in pp. difference from baseline.

**Table 5.c. Spain, Total impact**

**Spain: sum of simulated measures from NRP 2013 and 2014**

Years	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.17	0.37	0.59	0.72	0.86	1.01	1.16	1.31	2.06	2.80	3.65
Employment	0.31	0.58	0.78	0.89	0.98	1.07	1.18	1.29	1.90	2.54	3.26
Trade balance (% of GDP)	0.23	0.26	0.22	0.23	0.23	0.23	0.24	0.25	0.29	0.31	0.24
Gov. balance (% of GDP)	0.72	0.97	1.20	1.33	1.48	1.64	1.81	1.98	3.00	4.14	5.42

Notes: GDP and employment effects are expressed in %-difference from baseline, trade and government balance effects are expressed in pp. difference from baseline.

## 6. Impact assessment of reforms in Portugal

This section presents an overview of the reforms quantified in this study for Portugal and the link with the shocks to the macroeconomic model. The analysis focused on reforms implemented or planned under the Economic Adjustment Programme for Portugal which lasted between 2011 and 2014. The reforms selected were in areas which were expected to have a more significant and direct macroeconomic impact: labour market, education, product market, network industries and the tax system. The measures that were not assessed are briefly presented in the end of the section.

### 6.1 Labour Market Reforms

#### **Employment Protection Legislation**

The Portuguese reforms to Employment Protection Legislation (EPL) of 2011 and 2012 have reduced the discrepancy between the protection of temporary and permanent employment contracts. The methodology of this exercise assesses such reforms by the OECD EPL indicator for regular workers (individual dismissals). This indicator changed from 4.11 in 2011 to 3.18 in 2013. This was mapped to a productivity shock based on the empirical study of Bassanini et al. (2009). The estimation of Bassanini et al. (2009) suggests that a one-point decrease in the summary EPL indicator for regular workers translates into an aggregate yearly labour productivity growth effect of 0.14 percentage points (see also the survey of Martin and Scarpetta [2011]).

#### **Unemployment Benefits**

The 2012 reform of Unemployment Benefits (UB) increased the coverage of the system and work incentives while reducing the maximum duration and the generosity of the benefits after 6 months. The methodology used in this exercise to translate UB reforms focuses on the aspect of unemployment benefits to reduce job search disincentives, and abstracts from a number of other channels. In particular, the methodology relies on the OECD's indicator of net replacement rate of the unemployment benefit over 60 months (calculated with top-ups, as an average of multiple family types). The net replacement rate in Portugal was 59% in 2011 and 48% in 2013.

### 6.2 Education Reforms

A programme offering basic vocational courses (*Cursos vocacionais de ensino basico*) as an alternative path to students at risk of leaving education started in 2012/2013 in secondary education, and in 2013/2014 at upper secondary level as a pilot. In October 2015, the government announced its continuation no longer as pilot but as a long term programme at both levels (lower and upper secondary) and called for public and private providers of education to offer these vocational courses.

As the data source is from September 2015, it still does not include the enrolment rate of courses in school year 2015/2016. Therefore we take the equivalent figure for the number of students finalising that course in the previous year. When only the number of enrolments was available, the average dropout rate was used to calculate the number of students finalising the programme in each year.

The legislation was published by the previous government but does not specify for how long the programme will run. The current government has so far not stopped or significantly changed the programme. Therefore, this estimation assumes that the programme will have a permanent effect and that each year 13315 additional medium-skilled will join the labour force (the same number of students attending this programme in school year 2015/2016, the year first in which the programme was fully running). This represents a year on year additional shift.

The number of students finalising the programme in each school year is the following:

	Cycle	Duration	2012/2013	2013/2014	2014/2015	2015/2016
Lower Secondary Education	2 <sup>nd</sup>	1 year	12	1256	1312	1312
		2 years		10	282	153
	3 <sup>rd</sup>	1 year	93	2551	2119	2119
		2 years		82	3844	8815
	Other	1 year			207	207
		2 years				378
Upper Secondary Education		2 years			331	331
<b>Total</b>			<b>105</b>	<b>3899</b>	<b>8096</b>	<b>13315</b>

Source: [Monitorizaco dos cursos vocacionais](#), Direcco Geral de Estatisticas da Educaco e Cincia.

### 6.3 Product Market Reforms

#### Liberalisation of highly regulated professional services

Portugal transposed the Professional Qualifications Directive and adopted a new horizontal framework law (Law No 2/2013) reforming 19 regulated professions governed by professional associations. This was to be followed by professional associations putting forward proposals for amendment of their statutes and internal rules to bring them in conformity with the principles laid down in the horizontal framework law. The main aim was eliminating excessive restrictions and facilitating access to professions. The reform has been gradually implemented since 2013, but there are legal restrictions to the access of a number of highly regulated professions that in practice reduce the importance of the reforms and negatively affect the outcome of the PMR indicators that covers those professions (legal, accounting, architectural and engineering services).

The overall PMR (for professional services including legal, accounting, architectural and engineering services) changes from 2.92 to 2.82. (It should be noticed that the PMR for engineers increases from 1.65 to 1.94 because of the restrictions introduced, so the overall effect on the professional services sector is minor.) Thum-Thyssen and Canton (2015, Table 1) link mark-ups to changes in OECD Product Market Regulation indicators at sector level. The estimated impact of a decrease in the OECD PMR on the mark-up in professional services is a reduction by 0.5%-point (Thum-Thyssen and Canton 2015; Table 1). This corresponds with a reduction of the mark-up in Portuguese professional services from 21% to 20.5%. The deregulation is also expected to contribute to allocative efficiency. Following Canton, Ciriaci and Solera (2014, Table V.1), the reduction of the PMR is estimated to increase allocative efficiency by 0.036 in legal activities, which leads to an increase in labour productivity of 2.70%. The table also presents the results for accounting activities (0.38% labour productivity increase) and for architecture & engineering (0.61% labour productivity decrease).

Table 1: Productivity gains of the reform of professional services in Portugal

	Legal activities	Accounting activities	Architecture and engineering
PMR before reform	3.88	3.17	2.325
PMR after reform	3.25	3.08	2.47
$\Delta$ PMR	-0.63	-0.09	+0.145
Impact on business churn	+1.10%-point	+0.16%-point	-0.25%-point
Impact on AE	+0.036	+0.005	-0.008
Impact on labour productivity (%)	+2.70%	+0.38%	-0.61%

Source: ECFIN calculations using OECD PMR data and econometric results in ECFIN (2013 & 2014).

Note: A two-step procedure is used. For legal activities, in the first step, the PMR reduction by 0.63 is estimated to have increased the churn rate (firms' birth rate + death rate) by  $-1.748 \times 0.63 = 1.10\%$ -point. In the second-stage this is estimated to increase allocative efficiency by  $1.10 \times 0.033 = 0.036$ . This is a log difference, which corresponds with a growth rate of  $\exp(0.036) - 1 = 3.70\%$ . To be on the conservative side, the corresponding increase in labour productivity is scaled down by a factor 0.73, in line with empirical results in ECFIN (2013) where an increase in allocative efficiency by 1%-point was found to correspond with an increase in the level of labour productivity of 0.73%. Taken together this yields a labour productivity shock in legal activities of 2.70%. A similar procedure is adopted for accounting activities and architecture & engineering.

### Services Directive

During the Adjustment Programme, Portugal took measures to complete the liberalisation of services with the enactment of minor outstanding decrees. It transposed the EU Services Directive through the elimination of restrictions in the legal regimes of 67 (out of 70) specific services, thus facilitating market entry and competition. The reforms cover many different service sectors in areas such as retail and wholesale, tourism, business services, services related with maintenance of equipment or even real estate. These reforms are legally in force since 2012 and sector specific amendments to implement the Services Directive were being introduced gradually until 2014. Currently, only the higher education legislation needs still to be amended in compliance with the EU Service Directive, but the authorities confirmed their intention not to carry out any changes. The implementing decree on construction fees is not yet in place. No new substantial policy measures are foreseen in the 2015 NRP.

The work of Monteagudo, Rutkowski and Lorenzani (2012) and an update of this exercise are used to estimate the impact of barriers in services affected by the Services Directive (SD) on sectoral labour productivity. The estimated impact on productivity taking into account the reforms undertaken by Portugal in this area of services covered by the SD since 2012 is estimated at 1.8% (reforms on the Point of Single Contact are not included in this estimate). We scale down this effect by the relative size of the affected service sectors in the total economy (15.62%) to get the macroeconomic labour productivity shock of 0.28%.

### Administrative simplification

The SIMPLIFICAR initiative gives a roadmap to reduce regulatory burdens. It develops a methodology to further making the regulatory environment more business-friendly, which includes a methodology for assessing impact assessment of legislation, including the "one-in/one-out" rule<sup>35</sup> and broadens the scope of existing inventories of the most burdensome regulation to include new sectors (tourism, construction and agriculture). A centralised governance framework has been set up for this last purpose, based on inter-ministerial coordination and a stakeholder engagement mechanism.

The reform is gradually being implemented since 2012. SIMPLIFICAR covers only the central government. In 2014, the PT authorities identified a list of 12 areas of administrative burden for businesses and for six of them a total amount of nearly EUR150 million a year has been estimated as the costs being imposed on businesses due to the related administrative costs. This reform is estimated to lead to a reduction in overhead labour cost of EUR 0.15 billion. In the model this translates into a reduction in fixed labour costs of -0.08% of GDP.

## 6.4 Reforms in Network Industries

### Privatisation in communication sector

The PMR for the communication sector (post and telecom) would decline by 1.09 due to the reforms presented below. Following Thum-Thysen and Canton (2015; Table 6), a decrease in the OECD PMR indicator in the communication sector, which includes the postal and telecommunication sectors, would decrease the mark-up in

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<sup>35</sup> When creating a new regulation that generates costs to businesses, this rule makes it mandatory, to eliminate existing regulations with equivalent costs.



that sector by 1.36%-point. This corresponds with a reduction of the mark-up in Portuguese communication services from 24% to 22.6%.

#### *Postal sector*

The incumbent (CTT) has been fully privatised in a two step process (CTT's 68.5% shares sold in 12/2013; CTT's 31.5% remaining shares sold in 09/2014). This implies more investment capacity for CTT and less government involvement, as well as a more robust regulatory framework. This is expected to contribute to more transparency and better market functioning and can lower prices through a more competitive environment. The privatisation would lead to a change in the PMR for the postal sector from 3 to 1.

#### *Telecommunication*

The sale of the State's golden share in PT Telecom (the incumbent) implies less government involvement and more robustness of the regulatory framework (6.11% remaining shares sold in 10/2013). This is expected to contribute to more transparency and better market functioning and can thus lower prices for telecom services. This privatisation would lead to a change in the PMR for the telecommunication sector from 0.65 to 0.47.

#### Transport

One programme reform was the unbundling of railway freight terminals and privatisation of CP Carga, the incumbent freight railway operator. Freight terminals, which were owned by the freight branch of the state-owned railway company (CP Carga), were transferred to the rail infrastructure manager (REFER) This helps to increase competition in the freight rail sector since it guarantees non-discriminatory access to the network to all rail freight operators. The company MSC rail acquired CP Carga following the privatisation process. The company has committed to maintain prices for already existing costumers which can promote price competition to the downside with other private companies that wish to enter this market. These measures were implemented in end-2014 (unbundling) and August 2015 (privatisation). This reform would lead to a change in the PMR for rail & road transport sector from 3.07 to 2.89. Following Thum-Thysen and Canton (2015; Table 1), a decrease in the OECD PMR is estimated to reduce the mark-up in rail & road transport by 0.24%-point. This corresponds with a reduction of the mark-up in Portuguese rail & road transport from 11% to 10.76%.

### 6.5 Tax Reforms

#### 6.5.1 The 2012 tax reforms

The 2012 tax reforms in Portugal included (i) the broadening of the VAT tax base, (ii) the reduction of PIT credits, (iii) the cancellation of the reduced CIT rate and introduction of CIT surcharges for larger enterprises and (iv) the reassessment of property values for the recurrent property tax (IMI):

- A set of categories of goods and services were moved from reduced VAT rates to higher ones or to the standard VAT rate of 23% in 2011/2012 (inter alia electricity, natural gas and restaurants). The authorities estimated an incremental revenue impact of EUR 2.04 billion in 2012.
- As regards PIT, starting in 2011, expense-related tax credits were reduced by imposing lower specific ceilings on certain types of expenses and an overall ceiling for the highest tax brackets. This reduction of PIT credits and exemptions was estimated by the authorities to yield 612 million in 2012 and another 255 million in 2013.
- For CIT the reduced tax rate of 12.5% was cancelled as from 1 January 2012 and surcharges (of 3 and 5%) on higher taxable income were introduced. The yield of this reform was estimated to reach EUR 441 million in 2012 and another EUR 165 million in 2013.
- The reassessment of property values done in 2011/2012 allowed for a broadening of the tax base for the recurrent property tax (IMI) (followed by lowering of tax rates in 2013). The authorities estimated the

reassessment to yield an additional EUR 50 million in IMI in 2012 and another EUR 70 million in 2013.

#### 6.5.2 The 2013 tax reforms

The 2013 tax reforms in Portugal included (i) the PIT structure review (brackets and temporary surcharge) and (ii) a reinforced combat against tax fraud and evasion:

- The budget law for 2013 included a PIT structure review in terms of brackets (increasing the average PIT rates and raising the maximum marginal rate to 48%) and maintenance of a 3.5% surcharge on taxable income above the minimum wage. This PIT structure review (brackets and surcharge) was estimated by the authorities to yield an overall amount of around EUR 2.25billion.
- In line with the strategic plan to fight fiscal and customs fraud and evasion 2012-2014 the authorities targeted increases in tax compliance via a series of measures, in particular enhanced exchange of information, data cross-checking from various sources, an e-invoicing system and the massive recruitment of new tax auditors. In their annual report on the fight against tax fraud and evasion in 2013, the authorities estimated the overall ex-post yield of these measures to have reached around EUR 840 million in 2013. A tentative breakdown would point to an approximate impact of EUR 640 million related to VAT, EUR 150 million related to CIT and EUR 50 million to PIT.

#### 6.5.3 The 2014 tax reforms

The 2014 tax reforms in Portugal included (i) a major CIT reform and (ii) a reinforced combat against tax fraud and evasion:

- The CIT reform mainly implied a reduction of the statutory CIT rate from 25% to 23% from 1 January 2014 and further to 21 % from 1 January 2015, the maintenance of surcharges (additional rates of 3% / 5% / 7%) for high taxable income (above EUR 1.5 / 7.5 / 35 million), and a reduced tax rate for SMEs of 17% for taxable income up to EUR 15 000. The incremental revenue impact was estimated by the authorities to reach EUR -70 million in 2014, EUR -200 million in 2015 and another EUR -200 million in 2016.
- In line with the strategic plan to fight fiscal and customs fraud and evasion 2012-2014 the authorities targeted increases in tax compliance via a series of measures, in particular enhanced exchange of information, data cross-checking from various sources, an e-invoicing system and the massive recruitment of new tax auditors. The authorities estimated ex-post in their annual report on the fight against tax fraud and evasion in 2014 that the overall yield of these measures had reached EUR 760 million in 2014. A tentative breakdown would point to an approximate impact of EUR 400 million related to VAT, EUR 190 million related to PIT and EUR 170 million to CIT.

#### 6.5.4 The 2015 tax reforms

The 2015 tax reforms in Portugal included (i) a major PIT reform (ii) and a green tax reform:

- The PIT reform introduced a family quotient for determining gross imposable income and redesigned tax credits in particular by replacing a global personal tax credit by a credit on general expenses and by increasing by 50% the child tax credit. The authorities estimated ex ante that the revenue impact would be limited to EUR -150 million in 2015.
- The green tax reform involved a change of environmental tax rules in the areas of energy and emissions, transport, water, waste, land use, forests and biodiversity, and introduction of a system of

taxing plastic bags and of incentives for end-of-life vehicle renovation. The yield was estimated ex-ante to reach EUR 150 million in 2015 and thus fully compensate the negative yield of the PIT reform.

#### 6.5.5 Calculated structural element of tax reforms

The reforms have led in most cases to increases in implicit tax rates. In line with the approach followed in this exercise, they have, however, been simulated assuming a revenue neutral adjustment of all tax measures, so as to isolate the structural element of the reforms. The compensation is made through an adjustment of all taxes (labour, consumption and capital) proportional to their initial share in revenue in Portugal.

The PIT reform affects both the ITR on labour and the ITR on capital. In the case of ITR on labour only the share of PIT revenues falling on labour employed is taken into account. In Portugal, this share was around 59.1% in 2012, the latest year for which data is available. A share of 25.9% of the PIT revenue as the result of the tax reforms, which is made of income of the self-employed and revenue allocated to capital income, affects the ITR on capital.

In these simulations, the labour tax reforms, such as the review of the tax brackets and PIT tax credits and exemptions as well as measures to combat fraud, translate into an overall increase in the ITR on labour of 2.31 pp between 2012 and 2015. ITR on labour increases from 24.9% in 2012 to 27.3% in 2013 and 27.4% in 2014 and slightly declines to 27.3% in 2015. The overall 2.31 pp increase in the ITR on labour is compensated by a 1 pp decrease in the ITR on capital, 0.9 pp in the ITR on labour and 0.6 pp in the ITR on consumption.

The tax reforms that affect the ITR on capital lead to an increase in the ITR from 27.9% in 2012 to 32.0% in 2013 and 32.3% in 2014 and then to a decline to 31.6% in 2015 and 31.0% in 2016. The overall increase in the ITR on capital of 3.1 pp between 2012 and 2016 is compensated by a 0.7 pp decrease in the ITR on capital, 0.6 pp in the ITR on labour and 0.4 pp in the ITR on consumption.

The consumption tax reforms that broaden the VAT tax base (e.g. limiting the use of reduced VAT rates), measures to combat fraud and the changes in environmental and green taxes lead to an increase in the ITR on consumption from 16.3% in 2012 to 18.7% in 2013 and 19.0% in 2014 and 2015. The overall increase of 2.8 pp in the ITR on consumption between 2012 and 2015 is compensated by a 1.8 pp decrease in the ITR on capital, 1.6 pp in the ITR on labour and 1.0 pp in the ITR on consumption.

#### 6.6 Conclusions

All in all, the reform measures assessed here **raise GDP by 2.1% by 2020**, and employment levels by 1.1%. It also leads to an improvement in the government's budgetary position of 2.2 pps. The gains in output are substantial and would add on average more than 0.4 pps to growth rates over the next five years.

The estimated GDP impact is in fact close to what was estimated in a benchmarking exercise in which half the gap with best performers is closed (Varga and in 't Veld (2014)). Under such reforms, it was found that GDP could be boosted by 2.4% after 5 years, and 5.5% after 10 years. While this suggests that some progress has been made in closing these gaps with best practice, it also indicates the size of the challenge of a full closure of the income gap with richer EU countries. Closing the income gap would require the removal of remaining structural rigidities, reducing the Portuguese educational gap, upgrading the labour force, and improving the skill distribution.

The estimated GDP effects reported here are for the measures that can be quantified in a reliable manner. There are however other reform measures reported by the Portuguese authorities that have not been assessed here because quantification cannot be done reliably through e.g. an analysis based on PMR indicators. The impact of those measures may not be negligible, but are hard to verify in an analytically rigorous manner and are therefore not included here. In that sense the estimated GDP impact reported here may give a lower bound of the potential impact of all the reforms undertaken.

## 6.7 Measures not quantified

### Product market reforms

The Programme contained measures to fully implement (update) the Point of Single Contact (PSC). As set up in the Services Directive, the PSC are legally required in each Member State since December 2009. It is a multi-lingual electronic platform to go through all the formalities of setting up a business or request a license. The PSC is currently being adapted to have all forms available concerning the newly adopted legislation (e.g. commercial, industrial and impact on productivity from the implementation of the Services Directive environmental licensing regimes).

In the exercise carried out to update the economic impact of the Services Directive (Monteagudo et al. 2012), the reforms in the PSC were not taken into account when estimating the impact of a change in the barriers in the services sectors affected by the Services Directive on the sectoral labour productivity (see section 6.3). Therefore the impact of the measures to update and implement the PSC undertaken in Portugal since 2012 couldn't be estimated in this exercise.

### Energy

We have considered the privatisations of EDP (incumbent generator and single electricity distributor) and REN (electricity & gas infrastructure manager). The sale of the State's golden share implies less government involvement and more robustness of the regulatory framework. This is expected to contribute to more transparency and better market functioning. EDP's 21.35% shares held by the government were sold in 12/2011; EDP's 4.144% remaining shares in government hands were sold in 02/2013. REN's 40% shares held by the government were sold in 02/2012; REN's 11% remaining shares were sold in 06/2014. We have considered the impact of this privatisation on the PMR indicator. The PMR for electricity decreases from 1.02 to 0.98. The PMR for energy (electricity and gas) would then reduce by 0.02. Following Thum-Thyssen and Canton (2015; Table 1), the estimated impact on the mark-up in energy is a reduction by 0.06%-point. This corresponds with a reduction of the mark-up in Portuguese communication services from 24% to 23.94%.

The main reasons not to include the energy reforms in the exercise were, first its estimated small impact, but most importantly, the OECD PMR indicator does not capture many reforms that took place in the energy sector in Portugal; for instance measures adopted to ensure the sustainability of the energy system and to reduce the electricity tariff debt.

### Wage setting institutions

Some measures were undertaken to support job creation and competitiveness (minimum wage; collective agreements; working time arrangements; social security contributions):

- Overtime pay reduced by 50% and mandatory 15 minute extra time off for each overtime hour worked is abolished. Cut of 4 national holidays, eliminating the possibility for workers accumulating 3 additional annual leave days based on their record of absences. (August 2012).
- The possibility for works councils to conclude firm-level collective agreements on functional and geographic mobility, working time and remuneration was introduced in August 2012 together with a reduced threshold (500 to 150) but new provisions seem not to have been used so far. New rules ending the quasi-automatic extension of collective agreements were in force from November 2012 to June 2014. There was also a reduction in the duration of collective agreements after their expiration from 18 to 12 months and the time needed for collective agreements that make their expiry dependent on the existence of a new agreement to enter into a period of survival from 5 to 3 years (August 2014).

Due to the lack of quantifiable impact it is not possible to assess these reforms in this exercise.

A range of measures were taken to improve active labour market policies and the number of people covered greatly increased since 2011. However, at the same time, active labour market policies have been streamlined to increase efficiency in spending and effectiveness in supporting job creation. In this context, the results would be unclear as an increase in spending took place simultaneous with an increase in efficiency. Therefore, an estimation of impact would not reflect the real impact of the policy and was consequently left out.

#### *Measures to support the internationalisation of businesses*

During the Adjustment Programme some measures were taken with the objective of contributing to the internationalisation of Portuguese businesses:

- A new exporter programme with 20 SMEs provided with training to develop products and to enter the US market.
- Projects aimed at promoting diplomatic and business visits with the view to facilitating business contacts.
- Promotion of the use of venture capital to incentivise internationalisation.
- A streamlined online platform for requesting VAT exemptions by exporters was introduced

These measures however are not easily quantifiable and could not be translated into productivity shocks.

#### *Reforms of the judicial system*

During the Adjustment Programme several measures were adopted to raise the efficiency of the judicial system, namely:

- New law on arbitration, adopting best international practices, to facilitate out of court settlements;
- Definition of the new Judiciary Map, to rationalise the network of courts and its management, which involves closing several court houses, creation of specialized courts, definition of transparent performance indicators and new courts personnel management plan;
- New Code of Civil Procedure to increase the speed and effectiveness of the judicial system, giving judges the capacity to resist the use of formalisms to delay proceedings;
- Targeted measures to tackle the very high court backlog, which substantially increased the civil enforcement cases' resolution rate, from below 100% to almost 200%;
- New framework law for enforcement agents and definition of quarterly targets for closing enforcement cases, a major bottleneck in the judicial system;
- New insolvency code, to simplify procedures and facilitate negotiations with creditors;
- New Competition Law, new Specialised Courts on Competition and Intellectual Property, and a new Framework Law for Regulators, to enhance the competition framework and create a true level playing field for companies.

However, statistics showing the impact of the judicial reforms on the functioning of the PT economy were not yet available at the time of this exercise. This was due to operational problems with the central database for court files (CITIUS) and the poor quality of the database for tax courts (SITAF). In the meantime data from CITIUS on ordinary courts and enforcements have been recently published but it was not possible to quantify the reforms in the judicial system on time to include in this exercise.

**Table 6.a: Portugal, NRP**

Unemployment benefit reforms											
Decrease in unemployment benefit replacement rate by 18.6%											
Years	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.04	0.19	0.31	0.37	0.40	0.41	0.42	0.43	0.47	0.52	0.58
Employment	0.12	0.35	0.52	0.61	0.64	0.65	0.65	0.65	0.65	0.66	0.67
Trade balance (% of GDP)	0.15	0.25	0.25	0.22	0.21	0.20	0.20	0.20	0.20	0.20	0.18
Gov. balance (% of GDP)	0.68	0.83	1.01	1.15	1.26	1.37	1.47	1.58	2.20	3.12	3.82
Employment protection legislation reform											
Gradual increase in labour productivity by 0.13 p. a.											
Years	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.05	0.13	0.22	0.30	0.38	0.46	0.55	0.64	0.87	0.93	0.97
Employment	-0.03	-0.04	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.02
Trade balance (% of GDP)	0.03	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.04	0.04	0.04
Gov. balance (% of GDP)	0.00	0.03	0.06	0.10	0.13	0.16	0.20	0.24	0.40	0.59	0.75
Tax structure/compensated tax changes											
Decrease in implicit lab. tax rate by 0.87 pp., increase in implicit cons. tax rate by 0.74, decrease in implicit capital tax rate by 0.38 pp., increase in property taxes by 0.03% of GDP											
Years	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.09	0.12	0.11	0.11	0.11	0.12	0.13	0.14	0.17	0.19	0.21
Employment	0.13	0.18	0.18	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.16
Trade balance (% of GDP)	0.00	-0.02	-0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01
Gov. balance (% of GDP)	0.06	0.10	0.09	0.08	0.08	0.09	0.10	0.10	0.15	0.20	0.28
Product market reforms											
Decrease in final goods mark-ups by 0.12 pp., increase in labour productivity by 0.3 % over 5 years											
Years	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.04	0.10	0.15	0.19	0.23	0.25	0.25	0.26	0.28	0.31	0.32
Employment	0.00	0.02	0.03	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03
Trade balance (% of GDP)	0.03	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02
Gov. balance (% of GDP)	0.01	0.05	0.08	0.10	0.11	0.13	0.14	0.15	0.21	0.31	0.41
Public administration reform											
Decrease in overhead labour by 0.08% of GDP											
Years	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.05	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10
Employment	-0.07	-0.06	-0.04	-0.04	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
Trade balance (% of GDP)	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gov. balance (% of GDP)	-0.04	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education reform											
Increase in the share of medium-skilled by 0.23 pp, decrease in the share of low-skilled by 0.23 pp p.a.											
Years	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.01	0.02	0.06	0.14	0.23	0.33	0.43	0.53	1.05	1.72	2.11
Employment	-0.01	-0.01	0.02	0.07	0.13	0.19	0.25	0.31	0.58	0.87	1.01
Trade balance (% of GDP)	-0.01	-0.01	0.01	0.03	0.04	0.05	0.05	0.05	0.06	0.07	0.06
Gov. balance (% of GDP)	0.03	0.06	0.04	0.05	0.07	0.10	0.12	0.15	0.31	0.56	0.76

**Table 6.b. Portugal, Total impact**

Years	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035
GDP	0.28	0.64	0.94	1.19	1.44	1.66	1.87	2.08	2.93	3.77	4.30
Employment	0.15	0.44	0.67	0.80	0.89	0.96	1.02	1.08	1.35	1.65	1.81
Trade balance (% of GDP)	0.21	0.32	0.34	0.35	0.35	0.34	0.34	0.34	0.34	0.34	0.32
Gov. balance (% of GDP)	0.75	1.06	1.28	1.46	1.65	1.84	2.03	2.23	3.28	4.78	6.02

## 7. Concluding remarks

This impact assessment has shown that the structural reform measures that have been quantified here can yield sizeable GDP effects in these four Member States. The simulated impact is smaller than what was found in a benchmarking analysis in which half the gaps in structural indicators with best performers were closed, but some progress has been made in closing these gaps. Here only actual reform measures are considered, and on average the measures simulated here can add between 0.1 and 0.3 pps. to GDP growth over the next 5 years. This is a much needed boost to growth, as potential growth rates have fallen well below pre-crisis rates. The GDP effects become larger over the longer run. These output gains are driven by higher productivity and/or higher employment rates. Reforms also generally improve government balances.

But this impact assessment has shown the difficulties one faces when attempting to quantify actual reform measures reported in the National Reform Programmes. The translation of reform measures into quantifiable shocks is a challenging task and is surrounded by large uncertainties. The fact that about one-third of the identified measures had to be excluded from this exercise also indicates how difficult this task is. Although the reason for exclusion was in most cases related to the fact that those measures were deemed to be minor and have an insignificant macroeconomic impact, in other cases quantification was impossible because insufficient details were available on timeframe and implementation strategies. There are also reform areas – most prominently reforms in the judicial system and reforms to insolvency frameworks – where more research is needed on their microeconomic impact and on how to translate that into a macroeconomic impact.

## Annexes

### Annex A.I: "Reverse engineering" of PMR indicator (regulated professions in IT)

In order to evaluate the Italian reform concerning the regulated professions we have performed a backward engineering exercise using the methodology of the OECD PMR (Product Market Regulation). The following steps have been taken in the calculation.

<b>Summary</b>	<b>PMR for professional services</b>	<b>Notes</b>
Baseline 2013	2.10	As published by the OECD
First adjustment to baseline 2013	2.08	Baseline + reduced training period for accountants to 1,5 years
Pre-reform situation	2.60	Baseline + maximum prices for all services across professional services + 3 year training for accountants
Second adjustment to baseline 2013	2.11	Baseline + reduced training period for accountants to 1,5 years + no regulation for all services except for legal activities where "non-binding recommended prices for some services" are assumed
PMR after reform minus PMR before reform	-0.49	



## Annex A.II: "Reverse engineering" of PMR indicator: Reforms in France

In order to evaluate product market reforms in France a backward engineering exercise using the methodology of the OECD PMR (Product Market Regulation) has been performed.

<b>Sector</b>	<b>Question</b>	<b>Answer for the 2013 PMR round</b>	<b>ECFIN reconstruction of the answer without the reform</b>
Professional services: Accountants	Are there restrictions on inter-professional co-operation (e.g. partnerships, associations, joint ventures)? - Accountancy profession	Co-operation allowed between comparable licensed professionals	Most forms allowed
Professional services: Legal professions	Are there restrictions on inter-professional co-operation (e.g. partnerships, associations, joint ventures)? - Legal profession	Co-operation allowed between comparable licensed professionals	Most forms allowed
Professional services: Legal professions	Are the fees/prices that the legal profession charges for its services regulated by the government or self-regulated by the profession itself?	Yes in the case of notaries	No
Retail	Specify the maximum number of Sundays or holidays that outlets can be open per year, please specify the maximum number of days per year. - Jurisdiction 2	5	12
Gas	What is the percentage of shares owned, either directly or indirectly, by the government in the largest firm in the gas sector?	36	32.76
Telecom	What is the percentage of shares owned, either directly or indirectly, by the government in the largest firm in the telecom sector?	27	25

## Annex A.III: "Reverse engineering" of PMR indicator (retail reform in ES)

In order to evaluate the Spanish reform concerning the "Opening of small retail premises" we have performed a backward engineering exercise using the methodology of the OECD PMR (Product Market Regulation).

In this exercise, we have manipulated some of the answers of the questionnaire as to see the potential impact of the reform. The following questions have been modified.

<b>Question</b>	<b>Answer for the 2013 PMR round</b>	<b>ECFIN reconstruction of the answer without the reform</b>
Are sales promotions restricted to appear within a particular period of the year?	No	Yes
Is notification to authorities required to establish a new retail outlet? - For selling clothing	not a requirement	always required
Is notification to authorities required to establish a new retail outlet? - For selling food	not a requirement	always required
Are licenses or permits needed to engage in commercial activity (not related to outlet siting)? - For selling clothing	depends on size of outlet	always required
Are licenses or permits needed to engage in commercial activity (not related to outlet siting)? - For selling food	depends on size of outlet	always required
Are licenses or permits needed for outlet siting (in addition to compliance with general urban planning provisions)? - For selling clothing	depends on size of outlet	always required
Are licenses or permits needed for outlet siting (in addition to compliance with general urban planning provisions)? - For selling food	depends on size of outlet	always required

The OECD PMR indicator for 2013 amounts to 2.88. The reconstructed PMR without the reform would be equal to 3.61.

## Annex A.IV: "Reverse engineering" of PMR indicator: Reforms in Portugal

In this Annex more detail is provided on the translation of product market reforms into PMR changes for Portugal.

Regarding the liberalisation of regulated professional services, we have manipulated some of the answers of the questionnaire as to see the potential impact of the reform. The following questions have been modified:

<b>Profession</b>	<b>Question</b>	<b>Answer for the 2013 PMR round</b>	<b>ECFIN reconstruction of the answer without the reform</b>
Accountants	Entry requirements in the accountancy profession - If relevant compulsory practice is required, how many years duration?	0.5	1.5
Engineers	Entry requirements in the engineering profession - If relevant compulsory practice is required, how many years duration?	0.5	1.5
Engineers	Entry requirements in the engineering profession - Is there a requirement to pass one or more professional examinations to become a full member of the profession?	No	Yes
Legal professions	Is the legal form of business restricted in the legal profession?	Yes	No
Legal professions	If the legal form of business is restricted, which forms of businesses are permitted? - Private companies	Not permitted	Permitted
Legal professions	If the legal form of business is restricted, which forms of businesses are permitted? - Public limited companies	Not permitted	Permitted
Legal professions	If the legal form of business is restricted, which forms of businesses are permitted? - Other (please specify in comments field)	-	All permitted
Accountants	If fees/prices are regulated or self-regulated, what is the nature of these regulations? - Non-binding recommended prices for some services	Yes	No

The PMR change in the postal sector from 3 to 1 is derived by changing the sub-indicator on public ownership in the postal sector from 5 (before the reform) to 0 (after the reform).

The PMR change in the telecommunication sector from 0.65 to 0.47 is derived by changing the sub-indicator on public ownership from 0.38 (before the reform) to 0 (after the reform), and by changing the sub-indicator on market structure from 1.56 (before the reform) to 1.397 (after the reform).

The PMR change in the rail & road transport sector from 3.07 to 2.89 is derived by changing the sub-indicator on public ownership in the rail sector from 6 (before the reform) to 4.6 (after the reform).

These were the questions modified in the OECD PMR regarding the network sectors:

<b>Sector</b>	<b>Question</b>	<b>Answer for the 2013 PMR round</b>	<b>ECFIN reconstruction of the answer without the reform</b>
Postal	Do national, state or provincial governments hold equity stakes in the largest firm in the sector? - Post - basic letter services	Yes	No
Postal	Do national, state or provincial governments hold equity stakes in the largest firm in the sector? - Post - basic parcel services	Yes	No
Postal	Do national, state or provincial governments control at least one firm in the sector? - Post - courier services	Yes	No
Postal	Do laws or regulations restrict, in at least one market in the sector, the number of competitors allowed to operate a business (e.g. by establishing a legal monopoly or duopoly, or a limited number of franchises or licenses)? - Post - basic letter services	Yes	No
Telecom	Do national, state or provincial governments hold equity stakes in the largest firm in the sector? - Telecommunications - fixed-line services	Yes	No
Telecom	Do national, state or provincial governments hold equity stakes in the largest firm in the sector? - Telecommunications - mobile services	Yes	No
Telecom	What is the market share (in percent) of new entrants in the sector? - Domestic fixed-line telephony	45	53.4*
Telecom	What is the market share (in percent) of new entrants in the sector? - Mobile telephony	56.1	64.3*
Transport	What is the percentage of shares owned, either directly or indirectly, by the government in the largest firm in the sector? - Railways - freight transport	100	5

\* Data provided by the regulator.

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