I. The economic impact of selected structural reform measures in Italy, France, Spain and Portugal

Structural reforms launched in Italy, Spain, Portugal and France could have significant economic benefits and raise GDP, new estimates from the European Commission show.

By 2020, the selected reforms modelled in this focus section are expected to raise GDP by some 1¼ % in Italy and Spain and some 2% in Portugal, with the benefits increasing over time. In France, where only the most recently launched reforms were modelled, the increase in GDP is expected to be close to ½%. This could imply a boost to GDP growth of between 0.1 and 0.3 pps. on average over five years. The projected gains in output are seen coming from improvements in productivity and/or higher employment rates. The reforms are also generally seen as beneficial to public finances as the higher growth associated with them should boost tax revenues. Although these effects are sizeable and provide a welcome boost to growth, they also show that more could be done when compared to best performers.

It is also important to stress upfront that the positive short term impact of product and labour market reforms on output and employment can be maximised through complementary measures that support demand (such as measures to boost investment), especially under the current conditions of slow growth and very low inflation prevalent in the euro area, reduce the costs of some of these reforms (e.g. through stronger corporate insolvency frameworks), and the appropriate sequencing of the specific reform measures.

The analysis in this report is based on selected reforms reviewed in the 2013, 2014 and 2015 National Reform Programmes of Italy, Spain and Portugal, and the 2015 National Reform Plan of France. These include measures covering product markets (including network industries), labour markets (including. education), as well as pension system and tax reforms. Crucially, our methodology focusses on the structural component of reform measures by assuming revenue neutrality, and hence excludes the direct fiscal impact.

The methodology aims to provide a first impact assessment of reforms actually implemented or planned in selected Member States, but it must be acknowledged that all estimates are surrounded by large uncertainties and should be interpreted with caution.([1])

I.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 could add around 3% to EU GDP after five 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 8.5% for Italy after 10 years. ([2]) But those estimates were 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. 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 focus section aims to address this by focussing on selected, real reform measures in four countries (Italy, France, Spain and

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([1]) This chapter summarises the main results from a forthcoming publication: 'The economic impact of selected structural reform measures in Italy, France, Spain and Portugal'. It is based on a project that was a joint effort of horizontal and geographical units in DG ECFIN. The paper has benefited from comments received from country representatives in the LIME working group of the Economic Policy Committee.

([2]) See: Varga, J. and J. in 't Veld (2014), 'The potential growth impact of structural reforms in the EU: a benchmarking exercise', *European Economy, Economic Papers*, No 541.

Varga, J. and J. in 't Veld (2014), 'The growth impact of structural reforms', *Quarterly Report on the Euro Area*, Vol. 12, No 4.
Comparable results are reported in e.g. Bouis and Duval (2011), 'Raising potential growth after the crisis: a quantitative assessment of the potential gains from various structural reforms in the OECD area and beyond', *OECD Economics Department Working Papers*, No 835; and Barkbu, B. and J. Rahman and R.Valdes (2012), 'Fostering growth in Europe now', *IMF Staff Note*, SDN/12/07.

Portugal), and tries to quantify their potential macroeconomic impact. [3]

For Italy, Spain and Portugal the selection of measures is based on the 2013, 2014 and 2015 National Reform Programmes (NRP), while for France only measures from the 2015 NRP are considered. [4] The measures cover reforms in product markets (including network industries), labour markets (including education), pension reforms as well as tax reforms. The focus section 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 account. Some reform measures were not quantified, either because their impact was judged to be too small, or because quantification was considered unfeasible due to a lack of adequate information. 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. Of course, this does 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 effect (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. [5] 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 OECD PMR indicators were calculated and then mapped onto a mark-up shock. Other examples were reforms to employment protection legislation (EPL), for which first the impact on the OECD EPL indicator was calculated, and this was then linked to productivity shocks using available empirical estimates. Reform measures were fed into the model separately and independently of each other, and we report here only aggregate results. [6]

When these measures are fed into the model, simulations show a sizeable positive macroeconomic impact. By 2020, the quantified reform measures are estimated to raise GDP by some 1¼% in Italy and in Spain, some 2% in Portugal, and in France, for which we only consider measures included in the 2015 NRP, just below ½%. This implies on average between 0.1 and 0.3 pps. higher GDP growth over a five-year horizon. The GDP effects become larger over time. 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.

The next section describes the methodology to translate measures into model shocks. Following sections then describe the main measures quantified for Italy, France, Spain and Portugal.

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[3] In earlier work we assessed the impact of product market reform measures on microeconomic variables such as productivity and business dynamics in vulnerable countries. European Commission (2014): 'Market Reforms at Work in Italy, Spain, Portugal and Greece', *European Economy*, 5/2014.

[4] These can cover measures introduced in previous years as well as planned future measures.

[5] 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 W., J. Varga and J. in 't Veld (2008), 'Structural reforms in the EU: a simulation-based analysis using the QUEST model with endogenous growth', *European Economy, Economic Paper*, No 351.
Varga, J., W. Roeger and J. in 't Veld J. (2014), 'Growth effects of structural reforms in Southern Europe: the case of Greece, Italy, Spain and Portugal ', *Empirica*, Vol. 41, pp. 323-363.

[6] Detailed results by reform area and by year are published in the full report.

I.2. Methodology

The translation of product market (including network industries) reforms

Product markets reforms cover a vast and heterogeneous policy area and can roughly be grouped in four broad categories: 1) the cost of starting a business; 2) administrative burdens; 3) sectoral regulations; and 4) access to finance.

As a general rule, reforms to reduce the cost of starting a business were directly implemented in QUEST as entry costs, proxied in the model by data from the World Bank Doing Business project on administrative monetary costs. The non-monetary costs, such as the time to start a business, were monetised.

Reforms regarding the simplification of the administrative framework were translated into model shocks through the impact on labour overheads. This requires quantitative estimates of the administrative burden reduction, e.g. through a standard cost model approach, as in Arpaia et al. (2007). [7]

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 was covered by the sectoral Product Market Regulation (PMR) indicator of the OECD, we calculated the change in the PMR indicator based on a detailed analysis of how the measures impact on the underlying questionnaires. If the published 2013 values of the PMR already included the impact of the reform, a 'pre-reform' estimate of the PMR was constructed through reverse engineering. If the most recent PMR data did not yet capture the reform, a forward engineering exercise was carried out to obtain an approximation of the post-reform PMR value. 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 PMR indicators at the sector level. [8] Changes in sectoral mark-ups (in connection with reforms affecting 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 the case of professional services. Using results from Canton, Ciriaci, and Solera (2014) and European Commission (2013), changes in product market regulation in regulated professions are found to have an impact on allocative efficiency, and thereby on sectoral labour productivity. [9]

Regarding reforms on access to finance, the only reform considered in the analysis is a reform in Italy allowing firms that raise new equity or retained 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.

Some reform measures could not be translated and quantified as appropriate methodologies and reform indicators were not available (e.g. insolvency frameworks). This has limited the type of reforms included in this pilot. 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). This reform could thus not be included in the quantification exercise. Other reforms were not included in the exercise because the quantitative impact was considered to be limited, for example in the case of the Spanish entrepreneurship law, implying lower initial capital requirements for new firms (yielding a slight improvement in access to finance conditions).

The translation of labour market reforms (including education)

This estimation exercise covered labour market reforms in four broad areas: 1) the generosity of unemployment benefits; 2) active labour market policies; 3) education; and 4) employment protection legislation.

For unemployment benefit reforms we calculated the changes in an OECD indicator of benefit

[7] Arpaia, A., I. Grilo, W. Roeger, J. Varga, J. in 't Veld and P. Wobst (2007), 'Quantitative assessment of structural reforms: modelling the Lisbon Strategy ', *European Economy, Economic Papers*, No 282.

[8] Thum-Thysen, A., and E. Canton (2015), 'Estimation of service sector mark-ups determined by structural reform indicators', *European Economy, Economic Papers*, No 547.

[9] Canton, E., D. Ciriaci, and I. Solera (2014), 'The economic impact of professional services liberalisation', *European Economy, Economic Papers*, No 533.
European Commission (2013), 'Product Market Review 2013: Financing the real economy ', *European Economy*, 8|2013. The estimated relationship between PMR and allocative efficiency is only available for the regulated professions covered by the PMR, and not for other sectors.

generosity (the Net Replacement Rate over five 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. Reforms to benefit eligibility are not reflected in this indicator.

Reforms to active labour market policies (ALMPs) were translated in terms of permanent changes in funds and spending allocated to this item. This then is fed directly into the QUEST model boosting labour demand. ALMP reforms aimed at improving the efficiency of spending, e.g. in terms of improved job matching, were not assessed in this 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).

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) was 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). ([10]) It should be noted that EPL reforms could only be assessed when enough detail was provided to calculate the change in the OECD indicator, which typically is only the case when the text of the legislation is available.

([10]) Bassanini, A., L. Nunziata and D. Venn (2009), 'Job protection legislation and productivity growth in OECD countries', *Economic Policy*, Vol. 24, Issue 58, pp. 349-402.
Martin, J.P. and S. Scarpetta (2011), 'Setting it right: employment protection, labour reallocation and productivity', *IZA Policy Paper*, No 27.

The translation of tax reforms

A relatively wide range of tax reforms were identified with 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) and consumption (C) – and then the structural component of tax changes was calculated.

The starting point of the translation is a measure of the budgetary effects of the reforms, generally based on national estimates. Since actual revenue figures from Eurostat/TAXUD are usually available only with a two-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 future years in the absence of policy changes. From 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) and of 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 (PIT) 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 PIT 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.

In order to calculate the structural component, the tax changes were transformed into revenue neutral tax shifts by making compensatory adjustment on the revenue side so that the reforms were ex-ante revenue neutral. This approach allows assessing whether tax measures (increases or reductions)

Table I.1: **Italy: simulated aggregate effects of selected reform measures (1)**									
Years	2013	2014	2015	2016	2017	2018	2019	2020	2025
GDP	0.1	0.3	0.5	0.8	0.9	1.0	1.1	1.3	2.1
Employment	0.0	0.3	0.7	1.0	1.2	1.3	1.4	1.5	2.1
Trade balance (% of GDP)	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.1	0.1	0.1
Gov balance (% of GDP)	0.1	0.1	0.3	0.3	0.4	0.4	0.4	0.4	0.7

(1) GDP and employment effects are expressed in %-difference from baseline; trade and government balance effects are expressed in pp.-difference from baseline.
Source: DG ECFIN.

improve the growth-friendliness of the tax structure, while taking out the effects on the level of taxation and its aggregate fiscal impact. Technically this was 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). This means that each actual tax reform would trigger changes to all three ITRs in the model, so as to ensure revenue neutrality ex-ante.

The translation of pension reforms

Only two cases of pension reform needed to be considered: Spain and Italy. Spain 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 a progressive increase over time in the labour participation of older people (aged 60-64): +3.2 pps. by 2020 and +6.9 percentage points by 2060. Italy 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 the geographical mobility of civil servants. This reform was not translated, as insufficient information was available on its effectiveness and its impact seems likely to be limited.

I.3. Italy

Product market reforms

Italy's 2012 liberalisation package included measures to reform both the professional services sector and the energy sector. The reform of professional services removed some restrictions on fees and access by abolishing all references to minimum, maximum and recommended tariffs in all regulated professions and making it easier for young people to start practising. Reduced entry barriers foster competition and reduce mark-ups in professional services. Reform measures of the energy sector aimed at increasing competition and transparency in the gas and electricity markets through ownership unbundling of the incumbent gas operator from the gas transmission operator, and changes in the calculation method for the reference gas price, based on spot market prices rather than on oil-indexed prices.

The implied reductions in the PMR indicators were translated into reductions in the mark-up. The professional services reform also increases labour productivity through improved allocative efficiency.

The 2012-13 simplification of public administration reform and the 2014 public administration reform included a range of measures facilitating the setting-up of businesses and the digitalization and simplification of bureaucracy. These provisions are expected to reduce administrative costs.

Finally, the 2015 annual competition law and privatisation plan included the partial privatisation of the electricity company (ENEL), reforms to the telecommunication sector, changes in the monopoly position of Poste Italiane and a reduction in state ownership of the company. These measures were assessed through their impact on the PMR indicator.

Labour market reforms

The 2012-13 labour market reform targeted the rigidities and segmentation of the labour market by: (a) improving exit flexibility by modifying the legal framework on open-ended contracts and by introducing disincentives to use (or abuse)

temporary and atypical contracts; and (b) strengthening active labour market policies. The first was captured through its impact on the EPL indicator, and the second, directly through the estimated increase in ALMP spending.

The 2014-2015 reform of the labour market (Jobs Act) provides for a broad reform of the labour market, including revisions to labour protection legislation, the unemployment benefit system, the wage supplementation scheme, active labour market policies, and labour market contract types. Only the measures concerning labour protection legislation were considered in this exercise. In particular, 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. The other provisions of the act are not mapped in the exercise because of the large uncertainties and difficulties in estimating their potential impact. Furthermore, the measures taken to ease the rules for temporary contracts were also not considered in the exercise. The methodology adopted in this exercise to assess EPL reforms is based on Bassanini et al. (2009). 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 of temporary contracts do not affect this indicator.

The 2015 Education reform aims at improving the quality of the education system and reducing the drop-out rate by, for example, increasing the number of permanent teachers. On the basis of the implied additional fiscal resources (0.07% of GDP per year) on primary and secondary levels schools, this reform is translated into a gradual shift in the skill distribution of the labour force.

Tax reforms

Since 2012, Italy adopted a number of provisions affecting the tax structure. The main interventions involved an overall decrease in the labour tax wedge of 0.75 pps. of GDP (including an EUR 80 tax credit) and a decrease in the regional corporate income tax (*IRAP*) of around 0.5 pps. of GDP. Over this period, the allowance for corporate equity (ACE) has been strengthened. These measures were financed through (i) an increase in

consumption taxes in 2013 (a further increase is expected in 2017); (ii) a higher withholding tax on households' financial income; (iii) an increase in stamp duties on financial assets. 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. Overall, the tax reform has a positive effect on GDP. The measures also include the abolition of recurrent property taxation on first residences with a full compensation to municipalities of the related lost revenue, and a cut in property taxes on agricultural real estate and immovable machinery for productive use.

Aggregate effects

All in all, the reform measures assessed here should raise GDP by an estimated 1¼% by 2020 and raise employment levels by an estimated 1½%. The measures also help to improve the government budget balance by 0.5 pps by 2020, in our simulation. A word of caution is needed concerning the short term dynamic effects. According to these simulations, GDP in 2015 would already be ½% higher comparted to a no-reform baseline, which seems hard to reconcile with the low GDP growth figures of recent years. This may indicate that our assumptions on the implementation of reforms are too optimistic and lead to an overestimation of the speed in which reforms have positive effects. While the short run impact may be overestimated, this should not affect the long run effects, which are clearly sizeable.

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 could be boosted by 4% after five years and 8½% after 10 years This indicates that the reform measures considered in the current exercise are going some way to closing these gaps with best practice, but still more could be done.

Table I.2: **France: simulated aggregate effects of selected reform measures**

Years	2014	2015	2016	2017	2018	2019	2020	2025
GDP	0.1	0.2	0.3	0.3	0.3	0.3	0.4	0.4
Employment	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Trade balance (% of GDP)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gov balance (% of GDP)	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4

Source: DG ECFIN.

I.4. France

Product market reforms

For France, this exercise focusses exclusively on reforms contained in the 2015 NRP. [11] On product market reforms, the quantification exercise includes the partial privatisation of network sectors (gas and telecom), which is captured in the model through its effect on the public ownership sub-indicator of the PMR. Second, it includes the reform of the Sunday and evening openings in the Macron Law, through its effect on the overall PMR in retail. Third, reforms of regulated professions included in the Macron Law are captured through their impact on the PMR for professional services and their estimated effect on allocative efficiency. Fourth, the reform of regulated electricity tariffs is modelled as a reduction in the mark-up in energy. The sum of these product market reforms was translated into a reduction in the final goods price mark-up of 0.21 pps. and a 0.03% increase in labour productivity.

In addition, the authorities have launched an innovation tax credit for SMEs and given exemptions for innovative start-ups to stimulate research and development activity in France. These schemes are translated into a permanent increase in R&D-related tax credits. Actions to foster innovation also include the extension of the Investment for the Future programme (*PIA*), focussing on financing strategically important projects in research, energy transition and manufacturing. This measure was introduced in the simulation as an increase in public investment compensated by the corresponding decrease in other government expenditure categories.

Labour market reforms

The French authorities have started two programmes for fostering the employment of young and low-skilled workers. To support young people facing multiple obstacles in the labour market, the experimental youth guarantee scheme, will be progressively extended. The '*emplois d'avenir*' was also further extended. These measures were introduced as additional increases in ALMP spending.

The French authorities also 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 secondary education system (collège), and the reform of study programmes etc. These measures should contribute towards improving the skills of the labour force, and boosting productivity in the longer run but their effects in the short run are negligible.

Tax reforms

A reduction in the social contributions of firms is taking place over the period 2013-2017 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* 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 also includes a reduction in corporate taxation. Reducing the tax wedge on labour and capital has a positive impact on employment and growth. What is taken into account here is the impact of the reform on the structure of the tax system, and the reduction in

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[11] The 2015 NRP was the first time a quantification of recent reform measures was included, some of which already implemented in previous years, and our assessment covers a selection of those.

the ITR on labour is compensated by corresponding increases in other tax rates. ([12])

Aggregate effects

All in all, the simulated measures raise GDP by close to ½% by 2020. There is also an improvement in the government's budget balance. While the short-term dynamic effects may be sensitive to assumptions on implementation speeds, the medium and long run effects are clear. And given that this is only a partial assessment of reform measures undertaken in France, the effects are not insignificant.

But 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 that GDP could be boosted by 4% after five years, and 7¾% after 10 years. This indicates that the reform potential in France is large and that the measures quantified in this exercise are only going part of the way towards closing these gaps with best practice and therefore, that more could be done.

I.5. Spain

Product market reforms

Spain's 'market unity' law 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. Based on estimates from the Spanish government, we assume a reduction in the barriers for start-ups (entry costs) by 35%, which stimulates new entry, reduces fixed costs and leads to a reduction in mark-ups, so boosting GDP and employment.

The 2012 retail reform made shop opening hours more flexible, liberalised sales periods, and simplified licensing procedures for small retail outlets. Through a reverse engineering exercise we calculate the reduction in the OECD PMR indicator for retail and simulate the decrease in the mark-up.

Labour market reforms

The 2012 reform of unemployment benefits reduced the amount paid out to beneficiaries after more than six months from 60% of their last salary to 50%. In the model, this leads to an increase in labour supply and boosts growth and employment, with a corresponding improvement in the government balance as the reform affects both the expenditure (lower benefits) and revenue side (higher revenues from taxes).

Reforms to employment protection legislation in 2012 led to a small decrease in the OECD indicator for the strictness of employment protection. This was mapped to a productivity shock with an overall positive but small effect on GDP and the government balance.

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. These reforms were translated into an increase in the labour participation of older people progressively over time, which boosts growth and employment, particularly in the medium and long term. The reforms also lead to a sizeable improvement in the government balance in the medium and long term.

Tax reforms

The 2012 tax reforms in Spain included (i) a VAT reform, (ii) a reduction of debt bias in the treatment of housing in personal income taxation, and (iii) new taxes on electricity generation. These are simulated as increases in the implicit tax rates on consumption, labour and capital respectively. All these consolidation measures would improve the budget, but would have negative GDP and employment effects in the short and medium run. But in this exercise we isolate their impact on the structure of taxation through offsetting compensatory tax changes, such that the measures are ex-ante revenue neutral. As these measures shift the tax burden from labour to consumption, positive GDP and employment effects are obtained.

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

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([12]) 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 Burgert M., L. Granelli and 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).

Table I.3: **Spain: aggregate impact of selected measures (1)**									
Years	2013	2014	2015	2016	2017	2018	2019	2020	2025
GDP	0.2	0.4	0.6	0.7	0.9	1.0	1.2	1.3	2.1
Employment	0.3	0.6	0.8	0.9	1.0	1.1	1.2	1.3	1.9
Trade balance (% of GDP)	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3
Gov balance (% of GDP)	0.7	1.0	1.2	1.3	1.5	1.6	1.8	2.0	3.0

(1) GDP and employment effects are expressed in %-difference from baseline, trade and government balance effects are expressed in pp. difference from baseline.
Source: DG ECFIN.

brackets has been lowered from seven to five, rates have been reduced, family allowances increased, and some measures have been taken to broaden the tax base. The tax rates on savings income have also been reduced in two steps. The reduction in CIT rates was a two-step reduction in the standard rate and a reduction in reduced rates, as well as a broadening of the base and a reduction of the debt bias. These tax shifts have an expansionary effect.

The aggregate effects

All in all, the aggregate effects of these measures are positive even in the short term. By 2020, GDP is some 1¼% higher than in the baseline. Similar effects are found for employment, while the government balance improves by about 2% of GDP, mainly due to the reform of unemployment benefits. There is also a small positive effect on the trade balance. The gains in output are significant and imply that on average up to 0.2 pps. is added to growth rates over the next five years.

To put these estimates in perspective, in Varga and in 't Veld (2014) we report a GDP gain of 3¼% after five years if, for all structural indicators, half the gaps with best performers are closed, and some 6% after 10 years. This indicates that the reform measures quantified here go some way in closing the gaps with best practice, but more could still be done.

I.6. Portugal

Product market reforms

Portugal has liberalised some of its highly regulated professional services, eliminating excessive restrictions and facilitating access to professions. The reforms have been gradually implemented since 2013, but some legal restrictions remain to the access of a number of regulated professions

that in practice reduce the importance of the reforms. Thus the overall impact on the PMR indicators that cover these professions (legal, accounting, architectural and engineering services) is limited, and so is the corresponding reduction of the mark-up. The deregulation is also expected to contribute to allocative efficiency.

During its EU/IMF adjustment programme, Portugal took measures to complete the liberalisation of services, facilitating market entry and competition. The reforms cover many different service sectors in areas such as retail and wholesale, tourism, business services, services related to the maintenance of equipment or real estate. Based on earlier work on the economic impact of the Services Directive, we estimate the impact on sectoral labour productivity in the affected service sectors at 1.8%. [13]

Administrative simplification through the *Simplificar* initiative is estimated to lead to a reduction in overhead labour cost of EUR 150 m, which is translated into a reduction in fixed labour costs in the model.

Reforms in network industries include privatisations in the communication sector (post and telecom), and rail freight. These are captured through their impact on the PMR indicators and then translated into a mark-up reduction.

Labour market reforms

The Portuguese reforms to employment protection legislation in 2011 and 2012 have reduced the discrepancy between the protection of temporary

[13] Monteagudo, J., A. Rutkowski, D. Lorenzani (2012), 'The economic impact of the Services Directive: a first assessment following implementation', *European Economy, Economic Paper*, No 456. Note that the estimated impact refers to labour productivity, not to the earlier mentioned impact of product market regulation on allocative efficiency available for the regulated professions only.

Table I.4: **Portugal: simulated aggregate effects of selected reform measures**									
Years	2013	2014	2015	2016	2017	2018	2019	2020	2025
GDP	0.3	0.6	0.9	1.2	1.4	1.7	1.9	2.1	2.9
Employment	0.2	0.4	0.7	0.8	0.9	1.0	1.0	1.1	1.3
Trade balance (% of GDP)	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3
Gov balance (% of GDP)	0.7	1.1	1.3	1.5	1.7	1.8	2.0	2.2	3.3
Source: DG ECFIN.									

and permanent employment contracts. We assess the impact using the OECD EPL indicator for regular workers (individual dismissals) and map this to a productivity shock based on the empirical study of Bassanini et al. (2009).

The 2012 reform of unemployment benefits increased the coverage of the system and work incentives while reducing the maximum duration and generosity of the benefits after six months, which in the model reduces job search disincentives. This reform has a large positive impact on the government budget balance.

A programme was introduced offering basic vocational courses as an alternative path to students at risk of leaving education. On the basis of available data, we assume the programme will have a permanent effect and that each year 13,300 additional medium-skilled (instead of low-skilled) workers will join the labour force.

Tax reforms

The 2012 tax reforms in Portugal included (i) the broadening of the VAT base, (ii) the reduction of PIT credits, (iii) the cancellation of the reduced corporate income tax (CIT) rate and introduction of CIT surcharges for larger enterprises and (iv) the reassessment of property values for the recurrent property tax (IMI). The 2013 tax reforms in Portugal included (i) the PIT structure review (brackets and temporary surcharge) and (ii) a reinforced clamp down against tax fraud and evasion. In 2014, tax reforms included (i) a major CIT reform and (ii) further measures to combat against tax fraud and evasion, while in 2015 reforms included (i) a major PIT reform (ii) and a green tax reform.

The reforms have led in most cases to increases in implicit tax rates, but in structural terms, there has been a shift towards less distortive taxes with a positive effect on growth.

Aggregate effects

All in all, the reform measures assessed here raise GDP by some 2% by 2020, and employment levels by some 1%. It also leads to an improvement in the government's budgetary position of 2¼ pps., mainly through the decrease in unemployment benefits. Note that according to these simulations GDP was some 1% higher by 2015 due to reforms undertaken in previous years. This may indicate an overestimation of the speed of implementation, and there is considerable uncertainty on this. But that would not affect the medium and long run effects, and these are sizeable.

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 some 2½% after five years, and 5½ % after 10 years. While this suggests that some progress has been made in closing these gaps with best practice, it also indicates the gap remains large at longer horizons and that more could be done to remove remaining structural rigidities, improve education, upgrade the labour force, and improve the skills distribution.

I.7. Concluding remarks

This impact assessment shows that recent structural reform measures should yield sizeable GDP effects. The measures quantified here should on average add between 0.1 and 0.3 pps. to GDP growth over the next five years. 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.

The simulated impacts are typically smaller than what was found in a benchmarking analysis in which half the gaps in structural indicators with best performers were closed. That suggests that while some progress has been made towards closing these gaps, more could still be done.

As stressed in the introduction, the estimated GDP effects reported here are for those measures that could be quantified in a reliable manner. The aim was to develop a rigorous methodology that allows results to be comparable across countries and therefore only those measures that could be quantified realistically were taken into account. That does of course not mean that other reform measures that have not been quantified here have a negligible impact. It is only because those measures are much harder to verify in an analytically rigorous manner that they were not included. It could therefore be that for this reason, the estimated GDP impact reported here gives a lower bound of the potential impact of all the reforms undertaken.

However, there are other reasons to believe these results may overestimate the short term impact of reform measures. First, we considered planned measures, not only implemented ones, and there is some uncertainty about the speed at which measures are actually implemented or even retracted at a later stage. Second, assumptions were made about the speed in which, say, deregulatory reforms changed mark-ups or raised productivity, while there is much uncertainty about the true dynamic effects of reforms. Hence, there may have been an overestimation of the short run impact in the first years.

Another caveat concerning the partial nature of the analysis is outlined below. Reform measures are considered in isolation, one at the time, and spillovers of joint implementation, as well as those based on a wider geographical scope, are ignored. Previous research has shown that structural reforms can have somewhat ambiguous spillover effects, as competitiveness effects can partly offset the positive demand spillovers. Overall, however, spillovers tend to be small but positive. [14] It is therefore likely that if reform measures in all member states were considered together, the effects might be somewhat larger. [15]

This exercise highlights the difficulties for quantifying the economic impact of actual reform measures. The translation of reform measures into quantifiable shocks is a challenging task and is surrounded by large uncertainties. First, as emphasised above, not all measures are easily quantifiable and around one-third of identified 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. There are 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. 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. All this means these estimates of the impact of reforms are surrounded by large uncertainties and should be interpreted with caution.

Keeping these caveats in mind, this focus section has presented a novel approach in macroeconomic impact assessments of structural reforms by quantifying *actual* reform measures. It thereby complements other existing studies which typically use more stylised approaches. While these latter studies give estimates on the potential impact of structural reforms, the present analysis gives a more realistic assessment of the benefits of the reforms actually implemented or planned in selected Member States.

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[14] See Varga and in 't Veld (2014), ibid.

[15] Given the low weight of each country considered here in the ECB reaction function, no sizeable interest rate response is included in these scenarios, hence the monetary conditions are similar as under a zero lower bound. 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 Vogel, 2014).

Eggertsson G., A. Ferrero, and A. Raffo (2014), 'Can structural reforms help Europe?', *Journal of Monetary Economics*, Vol. 61(C), pp. 2-22.

Vogel, L. (2014), 'Structural reforms at the zero lower bound', *European Economy, Economic Papers*, No 537.