

# EUROPEAN ECONOMY

Economic Papers 541 | December 2014

The potential growth impact of  
structural reforms in the EU  
A benchmarking exercise

Janos Varga and Jan in 't Veld



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KC-AI-14-541-EN-N (online)  
ISBN 978-92-79-35190-7 (online)  
doi:10.2765/ 72085 (online)

KC-AI-14-541-EN-C (print)  
ISBN 978-92-79-36156-2 (print)  
doi:10.2765/81623 (print)

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# The potential growth impact of structural reforms in the EU

## A benchmarking exercise

Janos Varga, Jan in 't Veld

### Abstract

This paper presents a quantitative model-based assessment of the potential impact of structural reforms in the EU Member States. By comparing structural indicators of labour and product markets, a gap is defined for each indicator relative to the 3 best performers. Scenarios are then simulated in which half the gap vis-à-vis best performance is closed, to avoid setting unrealistic and/or unattainable targets. The simulations show large potential gains in output and employment, raising EU GDP by 3 % after five years and 6% after ten years. While competitiveness gains are smaller under simultaneous reforms, higher demand effects help to support growth in trading partners.

**JEL Classification:** C53; E10; F47; O20; O30; O41.

**Keywords:** Structural reforms; dynamic general equilibrium modelling; competition.

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The views expressed in this paper are those of the authors and should not be attributed to the European Commission.



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## 1. INTRODUCTION

Potential growth rates have fallen steadily over the last two decades. The slowdown in productivity growth, that started well before the crisis, is continuing and the financial and sovereign debt crises have reinforced the need for structural reform. Unemployment rates have risen to dramatic heights in many countries and the duration and depth of the crisis weigh on long-term growth prospects. Low growth also hampers debt sustainability and has forced more consolidation measures in vulnerable Member States, which have further reduced growth. All this has provided an impetus to carry out reforms to boost growth – EU country-specific recommendations in the European Semester aim to increase competition and reduce labour market rigidities in Member States.

This paper aims to provide a quantitative assessment of the potential macroeconomic impact of reforms and to evaluate possible spillovers of policy actions onto the EU's partners.<sup>1</sup> The benchmarking methodology is based on structural indicators of labour and product markets, and applies a distance-to-frontier approach to quantify the potential for reform by assuming a gradual and partial closure of the gap vis-à-vis the average of the three best EU performers. Crucially, to avoid setting unrealistic and/or unattainable targets, the scenarios involve only half of the gaps being gradually closed. Assuming the results are roughly linear, more ambitious reforms closing the full gap would double the effects, while reforms closing only part of the gap can be expected to have a proportionally lower impact.

This assessment uses the semi-endogenous growth version of the QUEST model specifically adapted for the analysis of structural reforms, which includes an R&D production sector. The model follows the QUEST3(RD) model structure of Roeger et al. (2008) in a multi-country setting (Varga et al., 2014), and includes the EU Member States individually and the rest of the world as a single separate region, thus allowing an analysis of spillover effects in a context of simultaneous reforms. Previous exercises using this model have shown that structural reforms can have sizeable macroeconomic effects.<sup>2</sup> Similar conclusions have been reached in other studies which have quantified the potential gains from EU structural reforms through regression analysis and/or model simulations of exogenous productivity or aggregate mark-up shocks.<sup>3</sup>

## 2. METHODOLOGY

In this exercise we apply the benchmarking methodology of EC (2013) to all European Union Member States. Reform shocks are based on a set of structural reform indicators covering a wide range of areas, including market competition and regulation, R&D expenditure, skill structure, tax structure, labour market participation, unemployment benefit 'generosity' and active labour market policies. We define the potential for reform as a closing by one-half of the gap in these indicators vis-à-vis the three best-performing countries in the EU. To allow for implementation lags, all reforms are phased-in gradually. Closing half the gap implies that for almost all Member States there is potential to introduce further reforms, without imposing 'unrealistic' changes for countries that fall far short of best performance.

It is important to note a number of caveats as to the scope of this exercise. First, the focus here is on the main macroeconomic variables, in particular GDP, employment, trade balance and government balances. However, reforms can have important distributional consequences, with some measures affecting certain household groups more than others. If poorer households are supported by compensatory measures, the economic gains may be smaller than reported here.

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<sup>1</sup> An earlier version of this paper, focusing on a subset of countries, was published in the Quarterly Report of the Euro Area, December 2013. This paper extends that benchmarking exercise to all EU Member States, and relies on updated structural indicators that reflect better the most recent situation.

<sup>2</sup> See Roeger et al. (2009) and D'Auria et al. (2009) for the effect of standardized structural reforms across the European Union Member States. European Commission (2013) and Varga et al. (2014) applies the same benchmarking methodology as our current paper but only for a selected number of euro area countries.

<sup>3</sup> E.g. Bouis, R. and R. 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; Barkbu, B. et al. (2012), "Fostering growth in Europe now", IMF Staff Note, SDN/12/07.

Second, while this benchmarking approach shows the potential that reforms could deliver, it is not an assessment of measures that have actually been taken. The latter requires detailed information on reform measures adopted and/or planned in each Member State, and an assessment of how they impact on structural indicators that feed into the model. While some information is available in the Member States' National Reform Programmes (NRPs), such an impact assessment is beyond the scope of the current exercise. But the results reported here, given their wider-ranging scope, could be seen as providing an upper limit for such impact assessments. The indicators used in this exercise are based on the most recent available data (see sources, Table 1), but these may not always capture some recent changes due to reforms that have already been adopted. In particular, some Member States (particularly some of the most vulnerable) have recently launched ambitious reform processes, the benefits of which would be included in the simulations presented here.

Third, there could be considerable time-lags before actual reforms have a measurable macroeconomic impact. Delays in implementing reform measures are likely and it also takes time before measures have a visible impact on structural indicators (e.g. time between creating more childcare facilities and an actual rise in female participation rates). In this exercise, we assume that reforms are implemented gradually. 'Speed limits' are applied, e.g. changes in mark-ups of at most one percentage point (pp) per year. Tax reforms are phased in over a five-year period, while educational reforms lead to only very gradual changes in skill levels due to cohort effects. However, the overall results may still overestimate how quickly reforms can have an impact in the short term, in particular at the current juncture, with depressed demand and tight credit conditions due to public and private deleveraging.<sup>4</sup> We therefore focus our discussion mainly on effects over five and ten years, rather than the short term.

Fourth, the improvement in public finances due to higher tax revenues, and lower unemployment transfers, is gradually recycled through lower taxes on labour. In the model the debt-to-GDP ratio is stabilised in the long-run through a fiscal closure rule that gradually reduces labour taxes to target the initial debt-to-GDP ratio. This stabilisation is not instantaneously, but only in the medium-long run, and the assumption of no change in the steady-state debt ratio permits us to focus on the direct effects of structural reforms excluding debt-consolidation effects.<sup>5</sup>

Another reason why the results could be considered as an upper limit is that some reforms may have considerable budgetary costs which could not always be taken into account, as they can be difficult to quantify. As regards improving childcare facilities and all-day schools, budgetary implications have been included that are based on gaps in public expenditure on pre-primary education, but in many other cases budgetary costs could not be accounted for. To the extent that reform measures have additional costs which would have to be financed through higher taxes, macroeconomic impacts could be smaller than those presented here.

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<sup>4</sup> Some authors have also claimed 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> A lower debt-to-GDP ratio reduces debt financing costs and allows for more fiscal space, which could be used for higher productive investment or lower taxes, both of which have positive growth effects. A scenario in which the fiscal closure rule is turned off for 25 years shows large improvements in public balances, which are then subsequently recycled through lower labour taxes.



**Table 1.** Structural indicators and benchmarks

		AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK	Average 3 best EU performers	
Market competition	Services sector markups (%)	15.3	15.9	11.9	13.4	17.0	15.0	12.7	16.4	19.7	14.9	17.3	15.7	n.a.	15.2	13.8	14.1	17.6	18.2	19.1	10.6	13.9	15.4	15.1	20.8	13.3	15.2	17.2	12.2	11.6	
Market regulation	Entry costs (%)	11.7	6.3	5.9	14.3	12.6	9.1	1.8	3.3	23.8	12.3	4.9	2.7	9.2	9.5	2.6	18.0	6.2	4.8	6.5	20.3	6.4	22.1	3.2	5.3	5.0	1.6	5.4	3.9	2.0	
Tax reform	Labour to consumption tax revenue ratio	2.4	3.0	0.7	1.1	1.7	2.5	1.9	1.3	1.7	2.6	2.0	2.8	1.0	1.4	1.6	3.0	1.4	1.9	1.4	1.2	2.6	1.5	1.3	1.0	1.9	1.7	1.7	1.5	0.9	
Skill enhancing reforms	Share of high-skilled (%)	6.4	7.9	6.4	9.1	6.0	9.2	7.5	11.4	7.3	9.8	12.2	8.5	4.5	4.9	9.3	4.2	9.9	8.2	7.2	3.5	6.3	6.0	4.1	4.9	9.0	6.7	5.2	9.4	11.2	
	Expenditure on high-skilled education (% GDP)	0.4	0.2	0.2	0.4	0.3	0.4	0.5	0.3	0.4	0.3	0.7	0.3	0.2	0.2	0.4	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.5	0.4	0.2	0.3	0.5	
	Share of low-skilled (%)	16.9	27.2	18.2	21.5	7.2	13.7	21.7	9.4	32.8	44.5	14.1	24.9	18.7	17.5	23.3	41.8	6.6	19.5	10.6	59.4	24.2	9.9	60.2	23.7	16.8	14.6	8.1	21.6	7.3	
	Expenditure on medium-skilled education (% GDP)	3.8	4.0	2.1	4.8	2.8	3.3	4.8	3.1	3.2	2.6	4.3	3.5	1.6	2.8	3.5	2.6	3.4	2.6	2.5	6.2	3.9	2.6	3.0	1.7	3.9	3.1	2.5	3.4	2.9	
Labour market reforms	Female non-participation (%; 25-55ys):																														
	- low-skilled	30.1	44.4	47.1	28.8	34.1	38.2	32.0	34.3	39.9	27.8	38.4	33.2	47.3	43.6	54.4	50.2	36.5	27.1	36.3	59.1	34.7	46.9	22.4	46.5	31.8	29.2	39.8	40.5	25.8	
	- medium-skilled	12.9	19.6	18.1	20.4	17.2	16.2	13.9	17.4	27.8	17.8	17.6	15.3	22.9	20.6	31.2	27.7	14.9	22.5	17.3	21.7	15.4	24.8	8.7	27.6	11.6	11.4	18.9	19.8	10.8	
	- high-skilled	8.8	9.0	10.0	11.2	19.1	11.1	7.3	13.6	10.9	10.3	11.7	8.7	8.0	17.2	15.8	17.3	4.5	13.3	9.1	10.8	7.3	9.3	4.8	8.5	6.6	4.9	17.1	11.8	4.8	
	Low-skilled male non-participation (%; 25-55ys)	17.1	19.6	33.2	12.3	20.2	16.5	20.2	19.2	7.9	10.4	21.1	13.6	25.4	27.8	20.6	15.0	28.4	8.0	17.6	7.7	14.9	28.0	10.6	22.1	13.9	18.7	24.7	18.0	7.9	
	Elderly non-participation (%; 55-64ys):																														
	- low-skilled	22.9	25.0	19.9	19.5	29.5	13.2	16.0	14.4	20.5	15.0	23.6	22.4	28.7	25.6	17.9	20.0	18.3	19.5	16.4	22.6	17.6	32.1	14.5	19.6	12.6	31.4	28.2	14.5	13.4	
	- medium-skilled	10.5	10.6	11.2	7.0	11.2	8.3	8.1	9.3	9.9	6.1	9.7	11.9	12.9	14.0	6.7	7.6	11.4	13.9	10.3	6.8	6.9	15.6	4.2	12.3	4.8	15.9	11.4	7.1	5.0	
	- high-skilled	5.5	6.5	6.7	4.6	3.5	4.6	4.4	4.5	7.5	3.5	5.4	5.6	8.0	7.0	4.1	4.4	4.0	4.6	4.3	4.4	4.2	4.6	5.0	5.0	2.6	7.3	5.2	5.5	3.2	
	ALMP (% of GDP over unemployment share)	25.2	18.9	3.8	7.5	4.4	12.3	36.7	3.9	3.9	6.5	22.7	15.2	2.4	12.7	10.3	7.7	2.3	19.8	2.4	1.8	22.9	7.3	5.7	1.0	24.0	4.3	2.8	2.0	28.6	
	Benefit replacement rate* (%)	68.8	65.1	38.5	n.a.	57.4	60.9	73.1	42.8	10.8	46.9	71.7	57.8	n.a.	30.1	74.1	9.2	52.5	72.5	56.6	52.8	71.7	45.6	48.8	25.6	64.3	61.0	39.0	62.2	52.3	
R&D measure	R&D tax-credit rates	0.12	0.15	n.a.	n.a.	0.18	-0.02	-0.01	n.a.	0.01	0.34	0.25	0.38	n.a.	0.25	0.26	0.12	n.a.	-0.01	n.a.	n.a.	0.23	0.00	0.49	n.a.	-0.01	0.16	-0.01	0.17	0.41	

Notes: \* for benefit replacement rate: EU average. Darker shades correspond to larger gap vis-à-vis the benchmark Sources: services mark-ups, 2013: based on Canton and Thum-Thysen (2015); entry costs: starting business costs in % of income per capita, 2014: Doing business database. [www.doingbusiness.org](http://www.doingbusiness.org); Tax revenues, 2012: European Commission, Taxation trends in the European Union, 2014 edition, Luxembourg, 2014.; Skill-shares, non-participation rates, 2013 or latest available: EUROSTAT, low-skilled correspond to ISCED 0-2 categories, high-skilled correspond to scientists and engineers (in natural science, mathematics, computing, manufacturing or construction), the rest of the population is defined as medium-skilled; Education expenditures: 2011 or latest available: EUROSTAT, corrected with the share of high and medium skilled shares; ALMP: 2012 or latest available: EUROSTAT; benefit replacement rates, 2012: OECD, Benefits and Wages Statistics. [www.oecd.org/els/benefitsandwagesstatistics.htm](http://www.oecd.org/els/benefitsandwagesstatistics.htm); average of net replacement rates over 60 months of unemployment, 2012; R&D tax-credit rates, EL and IT : 2008 data, average over large and small firms Warda, J. (2009). An Update of R&D Tax Treatment in OECD Countries and Selected Emerging Economies, 2008-2009, mimeo, AT, BE, CZ, DE, DK, EL, ES, FI, FR, HU, IE, LU, NL, PL, PT, SE, SI, SK, UK: 2013 data, average over large and small firms OECD (2013), OECD Science, Technology and Industry Scoreboard 2013: Innovation for Growth, OECD Publishing.

### 3. STRUCTURAL REFORMS

#### 1.1 Market competition and regulation

We distinguish between service-sector reforms and manufacturing reforms. The stylised facts from mark-up estimates indicate that mark-ups in services are larger than in manufacturing and vary more across countries (see Canton and Thum-Thysen, 2015 and Christopoulou and Vermeulen, 2012). This finding is explained by high international competition in manufacturing, which limits the ability of manufacturing firms to reap large economic rents. While mark-up estimates indicate that there is scope for reducing profit margins in services, there also remains some room for reforms in manufacturing. In the simulations, we also consider administrative entry barriers in the form of the costs of setting up a business, for which country-specific indicators exist.

##### Negative mark-up shocks in services:

Reforms which increase competition force firms to reduce prices by lowering mark-ups. Depending on demand elasticity, this raises output and increases demand for all factors of production (tangible capital, intangible capital and labour) in the medium term. The combination of price declines and increased factor demand yields comprehensive benefits. In particular, wage income rises due to higher employment and real wages. Real wages also benefit from higher investment rates. Because of higher labour-supply elasticities for low-skilled workers, the positive employment effects will be greater for the low-skilled. Mark-up reductions also reduce export prices. In the short to medium term, the trade balance improves, largely due to a decline of private consumption in the short term due to a fall in economic rents. In turn, workers' consumption rises more gradually. With higher consumption, the trade balance returns to baseline values. Since competition-enhancing reforms are likely to be difficult to implement and it may take time before potential competitors enter the market, speed limits are introduced in the simulations which restrict a reduction of mark-ups to 1 pp per year until the target is reached.

##### Reducing entry barriers for start-ups in manufacturing:

By lowering profit requirements to cover initial costs, reducing administrative entry barriers increases the entry of new firms in manufacturing and the search for new business ideas. This is captured in the model as increased demand for patents, which comes from high-skilled workers. It is important to note that a reduction of entry barriers lowers fixed costs for firms and does not translate into price declines and productivity improvements at firm level, but to a wider variety of goods produced in the country in question (product innovation). Nevertheless, domestic firms can benefit indirectly from the use of more innovative intermediate and investment goods. The aggregate real wage increases because there is a higher proportion of high-skilled workers, but their wage also rises because of short-to-medium-term high-skilled labour supply constraints. These wage increases partly offset the gains from wider variety. In the short term, the effects on GDP can actually be slightly negative, since increased demand for R&D leads to a reallocation of workers from the production of goods and services into research. However, the innovation resulting from R&D activities (as measured by the number of patents) yields marketable benefits in the medium term. Because of persistent growth effects generated by reduced entry barriers and increased demand for labour resulting in higher wage income early on, this policy already increases important tax bases and generates beneficial budgetary effects in the short term.

#### 1.2 Tax reform

Shifting the burden of taxation from labour incomes to consumption in a budget-neutral way makes returns to labour income more attractive and hence boosts employment, particularly at the lower end of the wage scale. Labour supply (and therefore wages) depends on total tax burden, but shifting the burden away from wage income can reduce total distortions on employment decisions and leads to an increase in employment and output. It also improves competitiveness and mimics the effects of a currency devaluation on the terms of trade ('fiscal devaluation').

Real wage costs fall only temporarily in these simulations. Nevertheless, there is a positive effect on employment and GDP. A temporary increase in employment leads to an increase in the capital stock in the medium term, until the pre-existing capital-labour ratio is re-established. At this point, however, the marginal product of labour returns to its initial level and therefore real wages that firms are willing to pay return to the baseline level at a higher level of employment and capital.<sup>6</sup>

In our benchmarking approach, we define the benchmark in terms of the ratio of labour to consumption tax revenues. Rather than moving Member States towards the lowest labour tax rates in the EU, the reforms are designed to move them towards the lowest labour to consumption tax revenue ratio by increasing indirect tax

<sup>6</sup> In our model the long-term output effect is greater than the increase in employment and capital accumulation, due to an endogenous R&D increase. Employment in the R&D sector is higher and the increase in output ('ideas/patents') leads to an increase in total productivity.

rates and using the fiscal space to reduce personal income tax rates accordingly (i.e. ex-ante budgetary neutrality).<sup>7</sup> It should be stressed that the effects of a switch from labour to consumption taxation will depend on how different income groups are compensated for the consumption tax increase. In particular, if unemployment benefits and other transfers are indexed to consumer prices, the output and employment effects will be smaller.

### 1.3 Unemployment benefit reform

A reduction in the benefit replacement rate acts in the model like a reduction in the reservation wage, which puts downward pressure on wages and so boosts labour supply.<sup>8</sup> The calibration of the wage elasticity to unemployment benefits is based on information from regression studies on the link between the unemployment rate and the benefit replacement rate.<sup>9</sup>

As the employment rate is lowest for the low-skilled group, the same increase in employment means a proportionally smaller reduction in leisure for this group and this puts less upward pressure on their wages. As a result, the decline in wages for the low-skilled is larger than that for other skill groups, and the increase in their employment is also greater.

As regards the impact on other variables, the effects of lowering benefit transfers are similar to those of reducing wages. Lower benefits would reduce consumption by liquidity-constrained households, but this is more than offset by an increase in consumption by non-constrained households due to higher permanent income. The benefit reduction acts like a negative shock to wages, which increases the demand for labour and reduces labour productivity initially. Wages and productivity increase over time and return to their baseline values as investment picks up. Unlike in a model with exogenous technical progress, there is a small positive long-term productivity effect due to higher employment of high-skilled workers in the R&D sector and increased demand for new patents from the entry of new firms in the intermediate sector. The government balance improves directly as a result of the reduction in benefits and additionally as a result of indirect effects as the economy improves (i.e. higher GDP, consumption and employment).

### 1.4 Other labour market reforms

Rising participation rates for women, low-skilled male workers and 55-64 year-olds increase the labour force. Such reforms form an important part of our simulated packages and yield significant improvements in GDP. They have different budgetary implications: improving childcare facilities to raise female participation rates has budgetary costs, while raising the retirement age reduces pension payments and provides budgetary savings.

Active labour market policies (ALMPs) affect labour market outcomes by improving the matching process, thus favourably affecting employment. Firms can perceive ALMPs as a reduction in non-wage costs, e.g. training costs borne by government (employment subsidy). ALMPs have direct negative fiscal effects on the government budget balance. However, as the positive effects of better training for the unemployed gradually translate into improved matching, such policies can rely on a certain amount of self-financing, though the net effect on the budget balance remains negative as ALMPs are modelled as intensifying over the simulation horizon to reach their target gradually. We calibrate this shock to match the panel regression estimates in Orlandi (2012) on the effect of ALMP expenditures on the unemployment rate.

### 1.5 Human capital investment

Changes in the quality of education and their effects on the quality of the labour force can be captured in the model as changes in the skill composition. Thus, in this exercise human capital investment is modelled as changing the relative weights of the different skill categories (or participation rates within categories). The increase of the average skill level in the economy (e.g. reducing the proportion of low-skilled) is modelled as a gradual change, accounting for the substantial lags in achieving that objective, including lags in reforming the education system and the gradual passing through of new cohorts onto the labour market. The reform cost is modelled as an increase in education-related expenditure.

<sup>7</sup> The skill-specific implicit labour tax rates are obtained from EUROMOD, European Commission, Joint Research Center.

<sup>8</sup> The target is defined as the EU average replacement rate; this scenario is not included for Member States below the average.

<sup>9</sup> For example, results from Bassanini and Duval (2006) and Orlandi (2012) point to an average effect for a panel of OECD/EU countries of somewhat less than 0.2 % from a 1 pp reduction in the unemployment benefit replacement rate. We obtain results at a similar order of magnitude, but somewhat differentiated across countries.

As regards the impact of such a measure, the results of the model are in line with empirical estimates.<sup>10</sup> Other effects in the model imply that, given imperfect substitutability between worker types, an increase in the share of medium-skilled workers would have positive wage effects on other types, especially low-skilled workers.

Policies aimed specifically at increasing the share of high-skilled workers (engaged in R&D activities) are also modelled. Initially, a fraction of the additional high-skilled labour will be employed in the production of final goods (replacing less efficient medium-skilled workers). Over time, however, there is a dynamic increase in employment in the R&D sector because of a decline in the wage of high-skilled workers. This reduces the price of patents and stimulates the entry of new firms. In the medium and long term, increasing the high-skilled share results in a strong ‘real’ R&D effect in terms of R&D employment and patent growth, yielding the highest output effect as compared with other human capital investment scenarios.

## 1.6 R&D investment

Firms undertake tangible and intangible (or R&D) investment. Policy can affect R&D investment; e.g. R&D tax credits reduce the capital costs of intangibles and increase R&D activities, resulting in the production of more patents, which can be used to open up new product lines. On the labour side, this is accompanied by reallocating high-skilled workers from production to research activities and by increasing the demand for high-skilled workers. The size of the output effect will therefore depend crucially on high-skilled labour supply elasticity. Because of reallocation of high-skilled workers, the effects on GDP are small in the short term and positive output effects will materialise only in the longer term, once the R&D activities have been successfully transformed into marketable products. For countries with limited high-skilled labour and limited scope for substituting high-skilled for medium-skilled workers in production, the crowding-out effect of R&D subsidies will be greater. It is also important to note that R&D tax credits are not self-financing, but lead to a deterioration of the government balance in the short and medium term.

The model can simulate only the effect of public subsidies to private R&D, e.g. in the form of tax incentives. Subsidies to R&D in public research institutes or universities could have different transmission channels and less of a crowding-out effect because business-financed R&D programmes typically focus on applied research, while public institutes and universities typically concentrate on basic research programmes which are too costly or less profitable for private R&D firms.<sup>11</sup>

# 4. MACROECONOMIC IMPACT OF STRUCTURAL REFORMS — MODEL-BASED RESULTS

## 1.7 Stand-alone implementation

Model simulations of structural reforms that close only half the gap with best performers show that even such not overambitious reforms can have significant macroeconomic effects. In order to quantify the spillover effects, the sets of reform shocks are first run through the model for each country separately, keeping all variables in other countries constant. This yields the impact of reforms for each country acting alone, without spillover effects. In a second stage, spillover effects are taken into account by simulating the shocks for all countries simultaneously. Estimated in this way, growth impact per Member State will be composed of growth spurred both by domestic reform and by a ‘spillover’ component resulting from other Member States reforming at the same time.

The first panel in Figure 1 shows the impact of structural reforms on GDP for Member States when acting alone after five, ten and twenty years. The other panels show the results for labour productivity, employment, and trade balance. Results are presented in the standard format as deviations from a ‘no-reform’ baseline. The simulated reform shocks boost GDP levels in the EA (EU) by 3.3% (3.0%) after five years, 6.3% (5.8%) after ten years, and 11.0% (10.0%) after twenty years. Employment shows similarly high increases, up to 6.8% (6.4%) after ten years.

Output and employment differences across countries closely reflect the size of the reform gaps as compared with best practice. Output effects are largest in those countries for which the benchmarking methodology shows the largest potential for reforms, even when only half the identified gaps are closed. To some extent, however, differences also reflect the degree to which the simulated reforms are biased towards measures which have a faster short-term impact on growth. Education reforms improving skill distribution and participation rates yield

<sup>10</sup> In particular, de la Fuente (2003) estimates the impact of an extra year’s schooling in the EU on long-term productivity at 9.3 %, which is close to the result yielded in our model.

<sup>11</sup> The model is calibrated on total R&D expenditure by taking into account the new ESA 2010 accounting framework. All R&D is undertaken by an aggregate R&D sector.

positive results only in the longer term, with smaller GDP effects in the first five to ten years, but up-front budgetary costs. Other reforms, such as shifting the tax burden from labour to consumption, can yield faster growth effects. However, as emphasised above, these scenarios may underestimate the timescale over which reforms can be expected to deliver positive growth effects, and more weight should be given to the medium/long-term effects. The effects after ten years indicate that significant GDP and employment improvements can be realised in all countries if reforms are implemented.

The long run gains are largest for Greece, due to the considerable scope for reforms identified in all areas by the distance-to-frontier approach (see Table 1). GDP is 17.5% higher after 20 years (9.2% after 10 years), even when only half the gap is closed. Italy, Malta and Romania show similar large gains of between 17 and 15% after twenty years. Countries closest to the best performance frontier have the smallest output gains, although even there benefits from further reforms can be significant. For Sweden, GDP is 2.6% higher after twenty years, for Denmark, Estonia, and the UK between 5-7%. Other countries lie between these two extremes, with their output gains roughly proportional to the identified structural gaps.

There are some differences across countries in how output gains are related to employment gains. In those countries in which the main identified gap is labour force participation (e.g. Belgium), reforms have a proportionally larger employment effect. Labour productivity actually declines as participation of low-skilled workers increases. The largest gains in labour productivity are obtained in Portugal, Romania and Italy. Trade balance effects are positive in the short run when reforms are considered in each country acting alone, and largest in countries where the identified gap is in e.g. the tax structure, where a larger shift in the tax burden from labour to consumption taxes improves competitiveness in the short run (e.g. Luxembourg). In the medium and longer run the demand effect comes to dominate as higher GDP raises imports and the improvement in trade balances evaporates.

Higher growth raises tax revenue and reduces transfer payments, and hence improves the government's budget balance. Budgetary effects are strongest in countries with an old-age participation gap, where a higher participation rate in the 55-64 age group and reduced pension payments can significantly improve the budget.<sup>12</sup> Costs of reforms can partly offset the benefits from higher tax revenues in the short term. For instance, the increase in female participation rates and improved skill structures are assumed to be accompanied by increased spending on childcare facilities and education, both measures involving frontloaded costs and yielding sizeable benefits only in the medium/long term.<sup>13</sup> The standard fiscal closure rule in the model targets the initial debt-to-GDP ratio and the additional fiscal space created by reforms is used to reduce labour income taxes. This enhances the effects on growth. But the improvements in budget balances show the role structural reforms could play in restoring fiscal positions and reducing public indebtedness.<sup>14</sup>

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<sup>12</sup> The baseline does not include pension reforms that have already been announced but will take effect later. To the extent that these will lead to higher participation rates and lower overall pension payments in future years, budgetary improvements can be expected.

<sup>13</sup> In practice, however, alternative policy tools and financing strategies could be used to enact these reforms, thereby limiting the budgetary impact even in the short term.

<sup>14</sup> Alternative scenarios in which the fiscal closure rule is switched off for a longer period show improvements in public balances of 6-7% of GDP after 20 years (see annex).

**Figure 1: Macroeconomic impact structural reforms: Stand-alone reforms <sup>(1)</sup>**



<sup>(1)</sup> Difference from baseline  
Source: QUEST simulations



## 1.8 Jointly implemented reforms

While the above scenarios assumed each country acting alone, demand effects will be larger when all EU countries would undertake reforms together while competitiveness gains will be much reduced. When considering simultaneous reforms in all EU member states, different types of spillovers can be examined:

1. *Demand spillovers* whereby policy action in one country (e.g. growth-enhancing structural reforms) influences import and/or export flows with partner economies. As structural reforms boost growth and domestic demand, reforms in one country lead to positive demand spillovers on others.
2. *Competitiveness effects*, e.g. resulting from measures that reduce labour costs or mark-ups in one country and improve its competitiveness. As these measures make other countries relatively less competitive, these effects reduce the positive demand spillover effect.
3. *International financial flows* caused by reforms in one country can have effects on others. For example, reforms which increase the rate of return on capital can lead to capital inflows until rates of return are equalised internationally. Exchange rate changes associated with international capital flows can induce further trade flows.
4. *Knowledge spillovers* resulting from the international diffusion of innovations will generally lead to a positive transmission of reforms that foster intangible capital formation. While these spillovers are less important in the short term, they play a longer-term role in the model for reforms that promote R&D. Based on empirical studies, we model domestic knowledge production (intangible capital) as resulting from domestic R&D efforts plus knowledge gained in the rest of the world.

These four types of spillovers are captured endogenously in model simulations of jointly-implemented reform measures. The first two effects are the most important, and as the demand and competitiveness effects are counterbalancing each other the overall net macroeconomic effects are typically found to be relatively small.

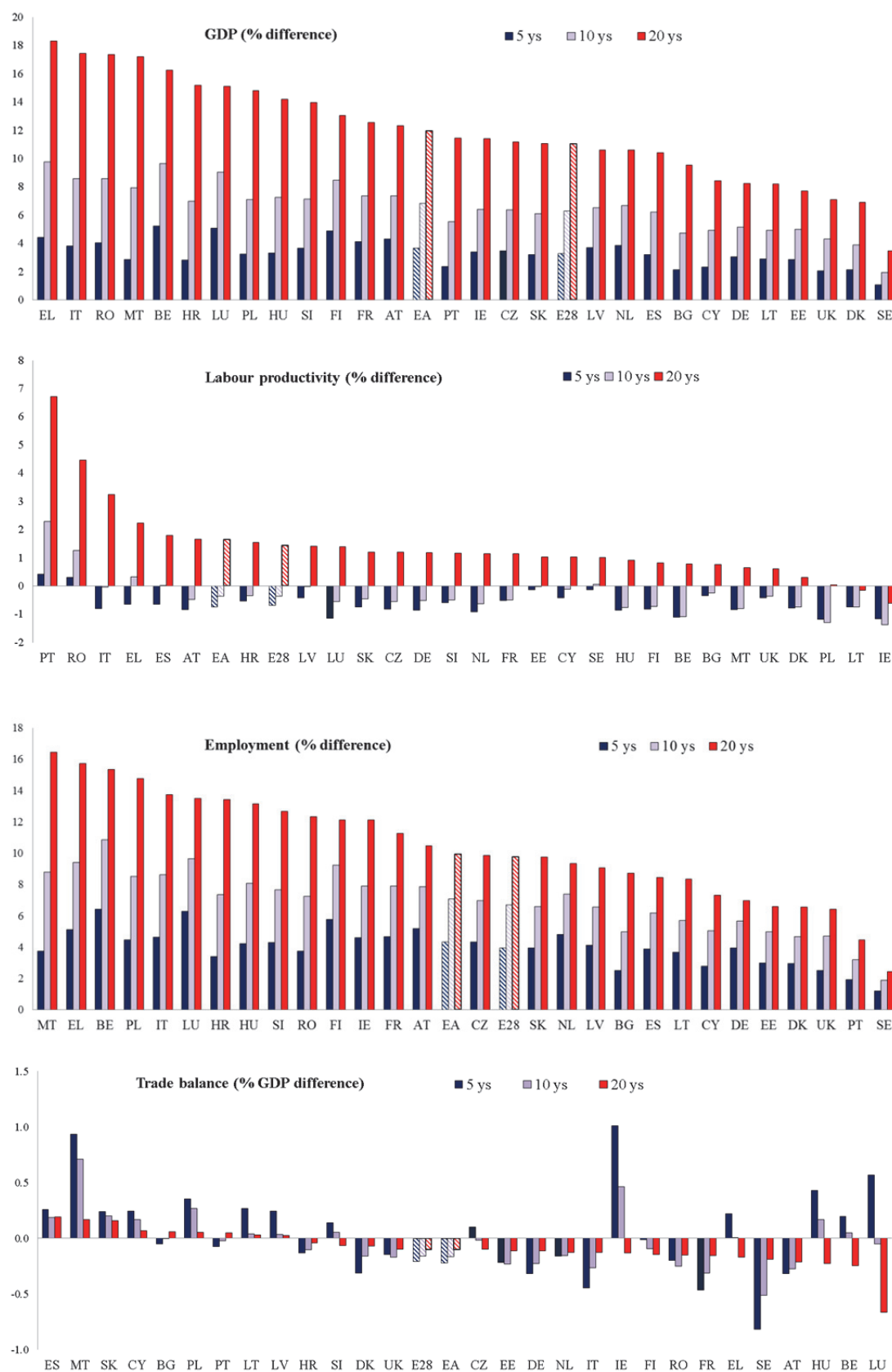
A possible additional spillover that is not endogenously captured in the simulations relates to the contagion of risk premia. If structural reforms are successful in raising potential growth rates, this could change financial markets' perception of long-term debt sustainability and lead to a gradual reduction of sovereign risk premia.<sup>15</sup> While this is captured in the model, the sovereign risk premium depends on each country's own debt-to-GDP ratio and the model includes no additional cross-correlations of risk premia. Improving fiscal positions in other countries could reduce fears of defaults or debt restructuring and/or reduce liabilities through joint institutions such as the European Stability Mechanism, and may lead to an additional decline in risk premia. However, it should be recognised that these risk spillovers can also be negatively correlated (e.g. a reversal of earlier 'flight to safety' could raise bond yields again in AAA-rated countries). All in all, the model may underestimate the impact on risk premia and disregards possible cross-country spillovers relating to this.

How are the results affected when all countries jointly introduce reforms? Figure 2 shows the GDP, productivity, employment, and trade balance effects for 'simultaneous reforms. Compared to the 'acting alone' scenario in Figure 1, results are very similar.

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<sup>15</sup> In the model, government bond yields depend on the current debt-to-GDP ratio. To the extent that structural reforms improve fiscal positions and reduce debt-to-GDP ratios, risk premia decline by three basis points for a one percentage point decline in the government debt-to-GDP ratio. While this is within the range of empirical estimates over longer horizons, in recent years there have been much larger swings in sovereign spreads.

**Figure 2: Macroeconomic impact structural reforms: Jointly implemented reforms <sup>(1)</sup>**



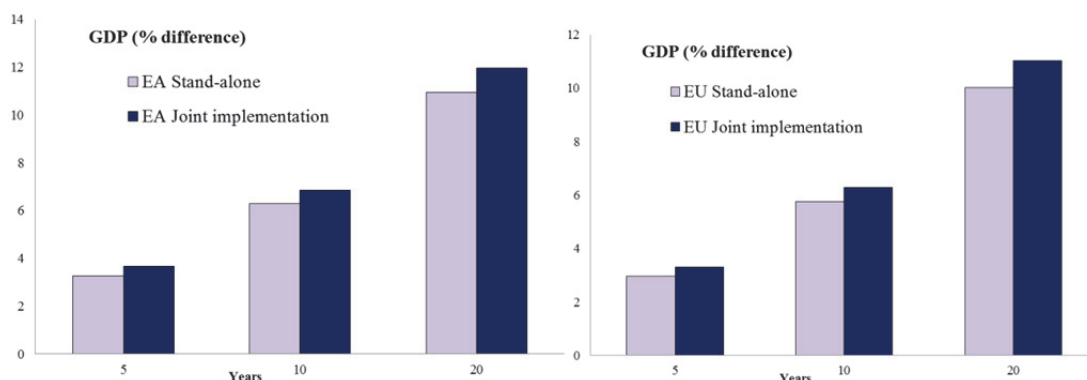
<sup>(1)</sup> Difference from baseline  
Source: QUEST simulations

While simultaneous reforms lead to larger demand spillovers, improvements in competitiveness, by definition, have opposing effects across countries. As discussed above, the net spillover effect is the outcome of different channels partly offsetting each other.<sup>16</sup> Demand spillovers can boost exports in other countries and raise GDP, but competitiveness-improving reforms can have a negative impact. Trade balance effects are generally smaller. Lower net exports are partly compensated by higher consumption growth with simultaneous reforms, due to a shallower decline in the terms of trade.

In the case of simultaneous reforms, long run productivity effects are larger, even in countries where most of the GDP gains were due to higher participation rates. The positive cross-country spillovers of R&D investment more than offset the negative productivity effects from higher participation of low-skilled workers.

Figure 3 summaries the GDP effects for the two different scenarios. Due to the counterbalancing channels the GDP effects after 5 and 10 years are almost identical to the 'acting alone' case in the previous section. After 20 years GDP is somewhat higher in the simultaneous reforms case (12.0 vs 11.0 for the EA, 11.0 vs 10.0 in the EU).

**Figure 3: Macroeconomic impact structural reforms: spillovers from simultaneous reforms<sup>(1)</sup>**

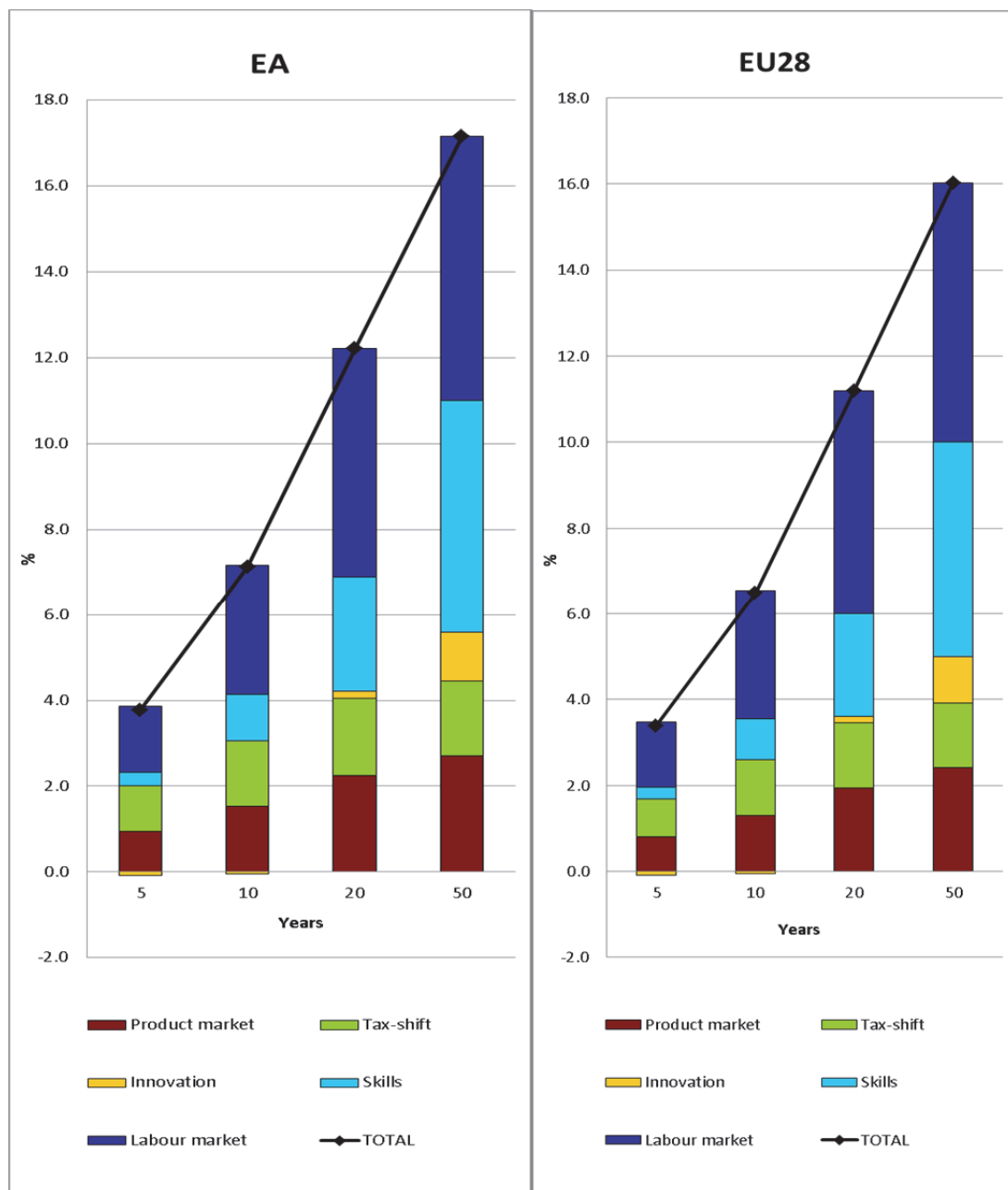


<sup>(1)</sup> Difference from baseline  
Source: QUEST simulations

Which reforms have the largest impact? This is obviously related to the identified performance gaps. The relative contribution of different reforms also changes over time, as Figure 4 shows. In the short run labour market reforms (increased participation, active labour market policies, and benefit reforms), tax reforms (shifting taxation towards indirect taxes) and product market reforms (higher competition in services sector and lower entry costs) have the largest effects. Which of these can deliver the fastest growth effects is not something that can be unequivocally answered by these model simulations, as it would crucially depend on implementation assumptions. In these scenarios, changes in structural indicators are introduced gradually and 'speed limits' are applied, as described in section 2. Larger output effects may be attainable in the short run if implementation could be speeded-up, and if product market reforms could be introduced quicker than labour market reforms then the relative ranking would be different. But it is clear that education/training (or skills enhancing) reforms cannot be expected to deliver significant growth effects in the short run. In the medium to long run though the effects of these reforms become sizeable. This also holds for innovation reforms (R&D promoting policies), which may not have a significant impact in the short to medium run, but can make a considerable contribution to higher output in the very long run (the final bar in Figure 4 shows the effects after 50 years).

<sup>16</sup> The direction of the impact of structural reforms on the current account is ambiguous from a theoretical point of view (see, for example, Vogel, 2011, Fournier and Koske, 2010). Empirical evidence is also mixed. Jaumotte and Sodsriwiboon (2010) report a positive effect of labour productivity on current accounts, while the empirical results in Kerdrain et al. (2010) imply that such reforms have a negative impact on the current account position.

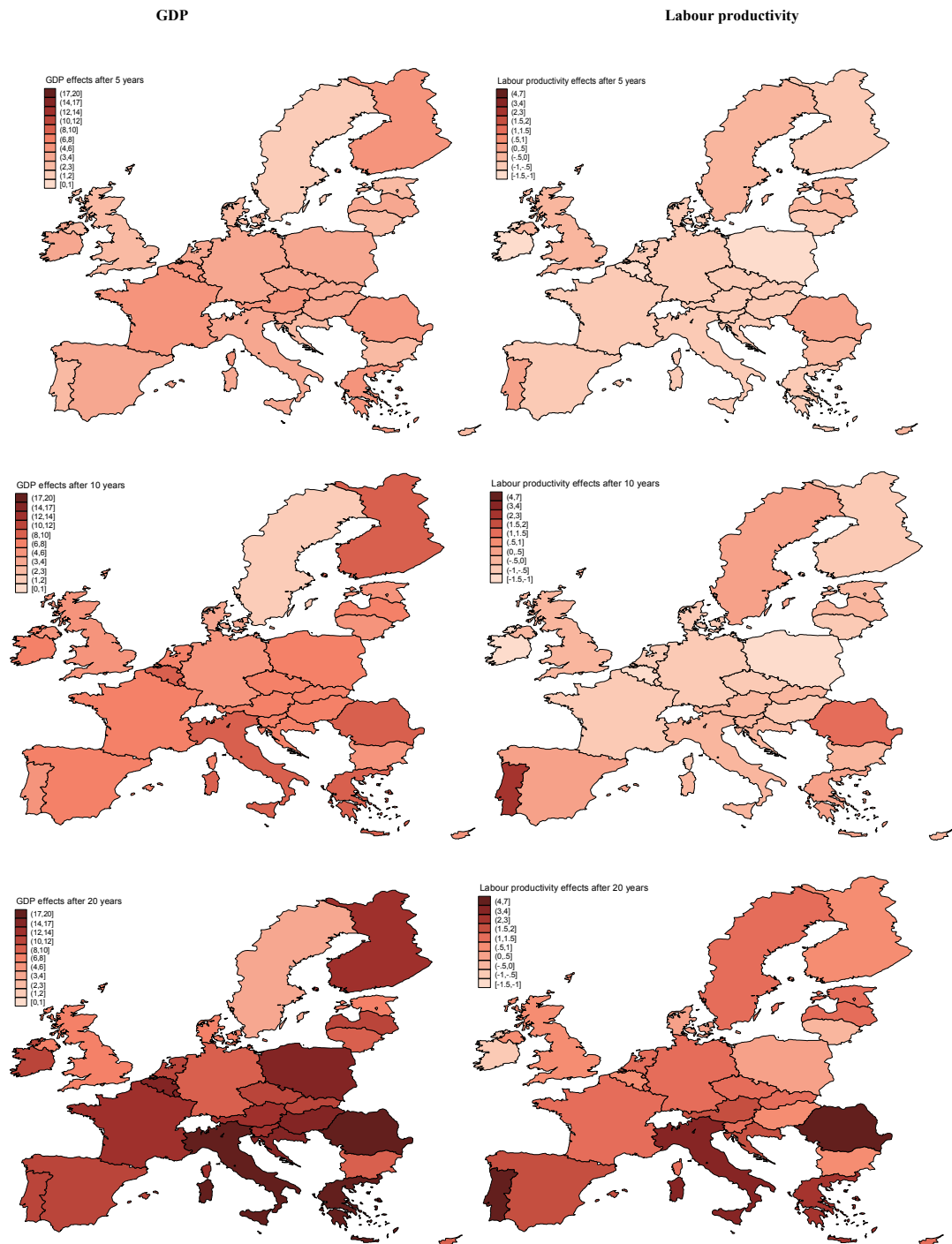
**Figure 4: GDP effects after 5, 10, 20, and 50 years, by reform areas<sup>(1)</sup>**



<sup>(1)</sup> Difference from baseline  
Source: QUEST simulations

Finally, Figure 5 summarises the distribution of GDP and productivity effects across countries after 5, 10 and 20 years. The largest GDP effects are found for Greece, Italy and Romania, the smallest gains for Sweden, Denmark and the UK. Productivity gains are largest in Portugal and Romania. The potential GDP gains would go some way in closing income gaps in the EU. In Varga et al. (2014) we use the model for a full closure of the performance gaps and find that this could account for between 67% and 99% of the current GDP-per-capita gaps between Mediterranean countries and the average of the three best euro-area performers. In the current exercise reforms are undertaken in all countries and in a wider range of areas, and as best performers in one area can also improve in other areas, incomes are raised in all countries. Hence, convergence is lower in this exercise. Central and Eastern European countries tend to have a generally more favourable tax structure (higher share of indirect taxes) and higher participation rates, and can benefit less from reforms in these areas. The normal catching-up process and diffusion of technological progress can lead to further convergence in GDP-per-capita terms for these countries.

**Figure 5: GDP and labour productivity effects after 5, 10 and 20 years <sup>(1)</sup>**



<sup>(1)</sup> Difference from baseline, darker shades correspond to larger GDP and labour productivity effects respectively.  
Source: QUEST simulations

## 5. CONCLUDING REMARKS

The model simulations reported here show that large potential gains could be reaped from structural reforms. Euro-area GDP could be around 6 % higher after ten years if Member States adopt measures to halve the gap vis-à-vis the average of the three best-performing Member States in each of the reform areas considered. As it is based on only half the gap being closed, the simulated reform package should be seen as not overly ambitious nor unrealistic for Member States. A further closure of the gap would have proportionally larger impacts.

While the positive effects on growth and employment are large, it should be borne in mind that this exercise shows the *potential* effects of structural reforms. It should be noted that this analysis is based on the most recent available indicators and may exclude the impact of measures (e.g. pension reforms) adopted in recent years but only taking effect in the future. Although some phasing-in is allowed for, a successful introduction of structural reform measures may take longer than assumed here and delays in implementation would lead to smaller effects in the first few years. In the current environment, with private and public deleveraging, and tight credit conditions in many countries, the short-term impact could be lower, as financing constraints are more binding. In addition, possible distributional effects may require that some groups in society are compensated and this may have budgetary implications. However, while large output gains can probably not be expected in the short term, growth effects are significant and could help boost the nascent recovery. Higher growth potential can also stimulate investment demand and help to restore investment to pre-crisis levels. The output and employment effects in the medium/long term are sizeable.

Of the reforms simulated in this paper, labour market reforms, and in particular reforms that raise labour force participation, yield relatively the largest output effects in the short to medium run, followed by tax reforms and reforms raising competition in product markets. However, the relative contribution of these reforms depends crucially on the identified performance gaps and on assumed implementation speed. Reforms relating to product markets, stimulating competition in certain sectors, can lead to large output gains, but such effects are likely to emerge only gradually. If reforms could be enacted faster then the effects could also be more frontloaded. R&D subsidies may crowd out final goods production and have a negative impact in the short term, but can have significant positive long-term effects. Labour market reforms are equally important. Many of these can also be expected to yield results only in the medium to long term (this applies in particular to incentives to raise participation among women and/or older people, and improve the skills structure), while involving sometimes significant frontloading of budgetary costs (education, training). In contrast, reforms that increase the participation rate of older workers can yield significant budgetary savings. Structural fiscal reforms that shift the tax burden away from labour towards less distortionary taxes could be implemented relatively rapidly and boost employment and growth already in the short to medium run.

Differences across countries mainly reflect where a country stands relative to 'best performance' for different structural indicators. Performance gaps are particularly large in participation rates and tax structures, and reforms in these areas can deliver the largest effects.

There are positive cross country spillovers of structural reforms, adding up to 10% to the gains in output in the long run. The demand effect boosts imports and supports trading partners' growth, though this is partly offset by the competitiveness effect. Trade balance effects are relatively small and can turn negative where the demand effect dominates the competitiveness effect. Reforms lead to significant improvements in fiscal positions and can yield sizeable reductions in debt-to-GDP ratios in the medium/long term, alleviating the need for further consolidation measures and contributing to long-term debt sustainability. The sizeable growth effects and the positive budgetary effects provide a strong rationale for the impetus to reform given by the country-specific recommendations in the European Semester.



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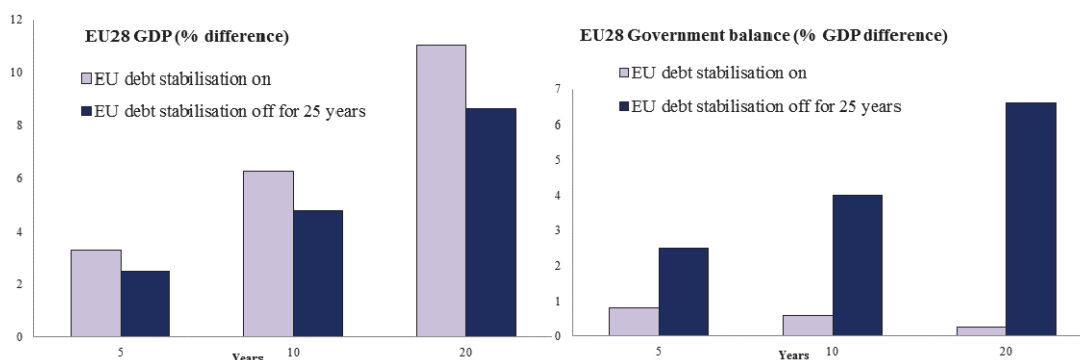
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## 7. ANNEX A: ALTERNATIVE DEBT-STABILISATION ASSUMPTIONS

One assumption made in the simulations is that the improvement in public finances due to higher tax revenues, and lower unemployment transfers, is gradually recycled through lower taxes on labour. In the model the debt-to-GDP ratio is stabilised in the long-run through a fiscal closure rule that gradually reduces labour taxes to target the initial debt-to-GDP ratio. This stabilisation is not instantaneously, but only in the medium-long run, and the assumption of no change in the steady-state debt ratio permits us to focus on the direct effects of structural reforms excluding debt-consolidation effects. Figure A1 below shows the GDP effects when the standard fiscal closure rule is switched off for more than 20 years, and shows the potential improvements in budget balances that could follow from structural reforms.<sup>17</sup>

GDP effects are lower under this scenario as the positive impact of lower taxes is delayed to after 20 years. The difference amounts to 2.4 pps. after 20 years (EU GDP is 8.6% higher as compared to 11% in the main scenario). Budget balances improve, by 6.6% of GDP on average after 20 years.

**Figure A1: Macroeconomic impact structural reforms: alternative debt-stabilisation assumptions**



Note: joint implementation scenarios; with debt-stabilising tax rule turned off for 25 years.

<sup>17</sup> The tax rule is turned on again after 25 years and labour taxes are then reduced to stabilise the debt-to-GDP ratio, leading then to much larger GDP effects.

## ANNEX B: GDP EFFECTS BY REFORM AREAS

Note: In these simulations it is assumed that all member states undertake reforms which close their structural gaps by half. The table shows the contribution of each reform to total GDP after five, ten and twenty years and in the long term. In case the country is above the benchmark, no shock is implemented but the Member State can still benefit from the reforms undertaken in other MS.

Reform areas		AT	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	15.33	11.56	1.1	1.6	2.3	2.3
Market regulation	Entry costs	11.67	1.99	0.1	0.2	0.5	0.9
Tax reform	Labour to consumption tax revenue ratio	2.39	0.9	1.5	2.2	2.5	2.2
Skill enhancing reforms	Share of high-skilled	6.4	11.2	0.1	0.3	0.9	2.3
	Share of low-skilled	16.9	7.3	0.3	0.7	1.6	2.2
Labour market reforms	Female non-participation (25-55ys):			0.4	0.5	0.5	0.2
	- low-skilled	30.1	25.8				
	- medium-skilled	12.9	10.8				
	- high-skilled	8.8	4.8				
	Low-skilled male non-participation (25-55ys)	17.1	7.9	0.0	0.1	0.0	0.0
	Elderly non-participation (55-64ys):			0.6	1.4	3.5	4.0
	- low-skilled	22.9	13.4				
	- medium-skilled	10.5	5.0				
	- high-skilled	5.5	3.2				
	ALMP (% of GDP over unemployment share)	25.2	28.6	0.0	0.0	0.0	0.1
	Benefit replacement rate*	68.8	52.3	0.8	1.3	1.8	1.6
R&D measure	R&D tax-credit rates	0.12	0.41	-0.1	-0.1	0.2	1.5
Total				4.7	8.3	13.9	17.4

Reform areas		BE	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	15.93	11.56	1.2	1.8	2.5	2.4
Market regulation	Entry costs	6.29	1.99	0.1	0.2	0.4	0.7
Tax reform	Labour to consumption tax revenue ratio	2.96	0.9	1.7	2.4	2.9	2.6
Skill enhancing reforms	Share of high-skilled	7.9	11.2	0.0	0.2	0.6	1.8
	Share of low-skilled	27.2	7.3	0.3	1.1	2.7	4.9
Labour market reforms	Female non-participation (25-55ys):			0.7	1.3	1.7	1.7
	- low-skilled	44.4	25.8				
	- medium-skilled	19.6	10.8				
	- high-skilled	9.0	4.8				
	Low-skilled male non-participation (25-55ys)	19.6	7.9	0.1	0.2	0.3	0.3
	Elderly non-participation (55-64ys):			0.7	1.8	4.6	5.5
	- low-skilled	25.0	13.4				
	- medium-skilled	10.6	5.0				
	- high-skilled	6.5	3.2				
	ALMP (% of GDP over unemployment share)	18.9	28.6	0.0	0.1	0.1	0.2
	Benefit replacement rate*	65.1	52.3	0.8	1.4	1.9	1.7
R&D measure	R&D tax-credit rates	0.15	0.41	-0.1	-0.1	0.2	1.3
Total				5.5	10.4	17.9	23.0

Reform areas		BG	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	11.88	11.56	0.1	0.2	0.3	0.4
Market regulation	Entry costs	5.91	1.99	0.1	0.2	0.4	0.7
Tax reform	Labour to consumption tax revenue ratio	0.70	0.9	0.1	0.1	0.1	0.1
Skill enhancing reforms	Share of high-skilled	6.4	11.2	0.1	0.3	0.9	2.2
	Share of low-skilled	18.2	7.3	0.2	0.6	1.4	3.2
Labour market reforms	Female non-participation (25-55ys):			0.6	1.1	1.4	1.7
	- low-skilled	47.1	25.8				
	- medium-skilled	18.1	10.8				
	- high-skilled	10.0	4.8				
	Low-skilled male non-participation (25-55ys)	33.2	7.9	0.1	0.1	0.3	0.5
	Elderly non-participation (55-64ys):			0.6	1.5	3.6	4.6
	- low-skilled	19.9	13.4				
	- medium-skilled	11.2	5.0				
	- high-skilled	6.7	3.2				
	ALMP (% of GDP over unemployment share)	3.8	28.6	0.3	0.6	0.5	0.6
	Benefit replacement rate*	38.5	52.3	0.0	0.0	0.0	0.1
R&D measure	R&D tax-credit rates	n.a.	0.41	0.0	0.0	0.1	0.6
Total				2.1	4.6	9.0	14.6

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Reform areas		CY	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	13.38	11.56	0.4	0.6	0.8	0.8
Market regulation	Entry costs	14.29	1.99	0.2	0.7	1.3	1.7
Tax reform	Labour to consumption tax revenue ratio	1.07	0.9	0.3	0.3	0.3	0.1
Skill enhancing reforms	Share of high-skilled	9.1	11.2	0.1	0.2	0.4	1.0
	Share of low-skilled	21.5	7.3	0.2	0.6	1.3	2.4
Labour market reforms	Female non-participation (25-55ys):			0.7	1.4	1.9	2.0
	- low-skilled	28.8	25.8				
	- medium-skilled	20.4	10.8				
	- high-skilled	11.2	4.8				
	Low-skilled male non-participation (25-55ys)	12.3	7.9	0.1	0.1	0.1	0.1
	Elderly non-participation (55-64ys):			0.3	0.7	1.7	1.9
	- low-skilled	19.5	13.4				
	- medium-skilled	7.0	5.0				
	- high-skilled	4.6	3.2				
	ALMP (% of GDP over unemployment share)	7.5	28.6	0.2	0.4	0.4	0.4
	Benefit replacement rate*	n.a.	52.3	0.0	0.0	0.0	0.0
R&D measure	R&D tax-credit rates	n.a.	0.41	0.0	0.1	0.2	0.6
Total				2.4	5.0	8.3	11.0

Reform areas		CZ	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	16.99	11.56	1.1	1.6	2.3	2.5
Market regulation	Entry costs	12.65	1.99	0.1	0.2	0.5	1.0
Tax reform	Labour to consumption tax revenue ratio	1.73	0.9	0.9	1.3	1.6	1.6
Skill enhancing reforms	Share of high-skilled	6.0	11.2	0.1	0.3	1.0	2.8
	Share of low-skilled	7.2	7.3	0.1	0.1	0.4	1.0
Labour market reforms	Female non-participation (25-55ys):			0.5	0.9	1.2	1.4
	- low-skilled	34.1	25.8				
	- medium-skilled	17.2	10.8				
	- high-skilled	19.1	4.8				
	Low-skilled male non-participation (25-55ys)	20.2	7.9	0.0	0.0	0.1	0.1
	Elderly non-participation (55-64ys):			0.6	1.3	3.3	4.0
	- low-skilled	29.5	13.4				
	- medium-skilled	11.2	5.0				
	- high-skilled	3.5	3.2				
	ALMP (% of GDP over unemployment share)	4.4	28.6	0.2	0.4	0.5	0.5
	Benefit replacement rate*	57.4	52.3	0.3	0.5	0.7	0.7
R&D measure	R&D tax-credit rates	0.18	0.41	-0.1	0.0	0.2	1.4
Total				3.6	6.7	11.8	17.0

Reform areas		DE	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	14.97	11.56	0.7	1.1	1.5	1.6
Market regulation	Entry costs	9.12	1.99	0.0	0.1	0.3	0.6
Tax reform	Labour to consumption tax revenue ratio	2.50	0.9	1.1	1.5	1.7	1.6
Skill enhancing reforms	Share of high-skilled	9.2	11.2	0.0	0.2	0.5	1.5
	Share of low-skilled	13.7	7.3	0.2	0.4	1.0	1.5
Labour market reforms	Female non-participation (25-55ys):			0.6	0.8	1.0	0.9
	- low-skilled	38.2	25.8				
	- medium-skilled	16.2	10.8				
	- high-skilled	11.1	4.8				
	Low-skilled male non-participation (25-55ys)	16.5	7.9	0.0	0.1	0.1	0.0
	Elderly non-participation (55-64ys):			0.3	0.7	1.7	1.9
	- low-skilled	13.2	13.4				
	- medium-skilled	8.3	5.0				
	- high-skilled	4.6	3.2				
	ALMP (% of GDP over unemployment share)	12.3	28.6	0.1	0.2	0.3	0.3
	Benefit replacement rate*	60.9	52.3	0.4	0.6	0.8	0.7
R&D measure	R&D tax-credit rates	-0.02	0.41	-0.2	-0.2	0.0	1.3
Total				3.2	5.5	8.7	12.1

Reform areas		DK	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	12.71	11.56	0.3	0.4	0.6	0.7
Market regulation	Entry costs	1.77	1.99	0.0	0.0	0.1	0.4
Tax reform	Labour to consumption tax revenue ratio	1.90	0.9	0.6	0.9	1.1	1.2
Skill enhancing reforms	Share of high-skilled	7.5	11.2	0.0	0.1	0.3	1.3
	Share of low-skilled	21.7	7.3	0.2	0.6	1.3	2.7
Labour market reforms	Female non-participation (25-55ys):			0.4	0.6	0.7	0.9
	- low-skilled	32.0	25.8				
	- medium-skilled	13.9	10.8				
	- high-skilled	7.3	4.8				
	Low-skilled male non-participation (25-55ys)	20.2	7.9	0.1	0.2	0.3	0.3
	Elderly non-participation (55-64ys):			0.3	0.7	1.7	2.2
	- low-skilled	16.0	13.4				
	- medium-skilled	8.1	5.0				
	- high-skilled	4.4	3.2				
	ALMP (% of GDP over unemployment share)	36.7	28.6	0.0	0.0	0.0	0.0
	Benefit replacement rate*	73.1	52.3	0.6	0.9	1.2	1.2
R&D measure	R&D tax-credit rates	-0.01	0.41	-0.2	-0.2	0.1	1.2
Total				2.2	4.1	7.3	12.1

Reform areas		EE	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	16.35	11.56	1.1	1.5	2.1	2.5
Market regulation	Entry costs	3.27	1.99	0.0	0.1	0.2	0.5
Tax reform	Labour to consumption tax revenue ratio	1.28	0.9	0.4	0.5	0.7	0.6
Skill enhancing reforms	Share of high-skilled	11.4	11.2	0.0	0.1	0.2	0.6
	Share of low-skilled	9.4	7.3	0.1	0.2	0.4	0.5
Labour market reforms	Female non-participation (25-55ys):			0.6	1.1	1.3	1.4
	- low-skilled	34.3	25.8				
	- medium-skilled	17.4	10.8				
	- high-skilled	13.6	4.8				
	Low-skilled male non-participation (25-55ys)	19.2	7.9	0.0	0.1	0.1	0.1
	Elderly non-participation (55-64ys):			0.3	0.8	2.0	2.7
	- low-skilled	14.4	13.4				
	- medium-skilled	9.3	5.0				
	- high-skilled	4.5	3.2				
	ALMP (% of GDP over unemployment share)	3.9	28.6	0.2	0.5	0.5	0.6
	Benefit replacement rate*	42.8	52.3	0.0	0.1	0.2	0.3
R&D measure	R&D tax-credit rates	n.a.	0.41	0.0	0.1	0.2	1.0
Total				2.9	5.1	7.8	10.8

Reform areas		EL	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	19.71	11.56	1.5	2.4	3.3	3.5
Market regulation	Entry costs	23.77	1.99	0.4	1.1	1.7	1.9
Tax reform	Labour to consumption tax revenue ratio	1.66	0.9	0.6	0.8	0.9	0.7
Skill enhancing reforms	Share of high-skilled	7.3	11.2	0.1	0.3	0.8	1.9
	Share of low-skilled	32.8	7.3	0.2	0.6	1.3	1.3
Labour market reforms	Female non-participation (25-55ys):			0.8	1.8	4.0	4.5
	- low-skilled	39.9	25.8				
	- medium-skilled	27.8	10.8				
	- high-skilled	10.9	4.8				
	Low-skilled male non-participation (25-55ys)	7.9	7.9	0.0	0.0	0.0	0.0
	Elderly non-participation (55-64ys):			0.7	1.8	4.6	5.2
	- low-skilled	20.5	13.4				
	- medium-skilled	9.9	5.0				
	- high-skilled	7.5	3.2				
	ALMP (% of GDP over unemployment share)	3.9	28.6	0.2	0.5	0.4	0.5
	Benefit replacement rate*	10.8	52.3	0.0	0.0	0.0	-0.1
R&D measure	R&D tax-credit rates	0.01	0.41	-0.1	0.3	0.6	1.2
Total				4.5	9.7	17.6	20.7



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Reform areas		ES	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	14.93	11.56	0.7	1.1	1.5	1.8
Market regulation	Entry costs	12.27	1.99	0.1	0.3	0.5	0.9
Tax reform	Labour to consumption tax revenue ratio	2.56	0.9	0.8	1.3	1.7	1.9
Skill enhancing reforms	Share of high-skilled	9.8	11.2	0.0	0.0	0.1	0.9
	Share of low-skilled	44.5	7.3	0.3	1.2	3.1	6.4
Labour market reforms	Female non-participation (25-55ys):			0.6	1.1	1.4	1.7
	- low-skilled	27.8	25.8				
	- medium-skilled	17.8	10.8				
	- high-skilled	10.3	4.8				
	Low-skilled male non-participation (25-55ys)	10.4	7.9	0.1	0.2	0.2	0.3
	Elderly non-participation (55-64ys):			0.1	0.4	1.0	1.7
	- low-skilled	15.0	13.4				
	- medium-skilled	6.1	5.0				
	- high-skilled	3.5	3.2				
	ALMP (% of GDP over unemployment share)	6.5	28.6	0.4	0.7	0.3	0.4
	Benefit replacement rate*	46.9	52.3	0.0	0.1	0.1	0.1
R&D measure	R&D tax-credit rates	0.34	0.41	0.0	-0.1	0.0	0.6
Total				3.2	6.1	10.0	16.7

Reform areas		FI	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	17.34	11.56	1.4	2.2	3.4	3.7
Market regulation	Entry costs	4.86	1.99	0.1	0.1	0.3	0.6
Tax reform	Labour to consumption tax revenue ratio	2.00	0.9	1.5	2.3	3.0	2.9
Skill enhancing reforms	Share of high-skilled	12.2	11.2	0.0	0.1	0.3	0.8
	Share of low-skilled	14.1	7.3	0.2	0.4	1.0	1.4
Labour market reforms	Female non-participation (25-55ys):			0.6	1.1	1.2	1.1
	- low-skilled	38.4	25.8				
	- medium-skilled	17.6	10.8				
	- high-skilled	11.7	4.8				
	Low-skilled male non-participation (25-55ys)	21.1	7.9	0.0	0.1	0.1	0.1
	Elderly non-participation (55-64ys):			0.5	1.3	3.4	4.5
	- low-skilled	23.6	13.4				
	- medium-skilled	9.7	5.0				
	- high-skilled	5.4	3.2				
	ALMP (% of GDP over unemployment share)	22.7	28.6	0.0	0.1	0.1	0.2
	Benefit replacement rate*	71.7	52.3	1.0	2.0	2.9	2.9
R&D measure	R&D tax-credit rates	0.25	0.41	-0.1	-0.1	0.0	1.2
Total				5.2	9.6	15.8	19.4

Reform areas		FR	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	15.69	11.56	1.2	1.8	2.6	2.8
Market regulation	Entry costs	2.73	1.99	0.0	0.1	0.2	0.4
Tax reform	Labour to consumption tax revenue ratio	2.76	0.9	1.1	1.7	2.1	2.0
Skill enhancing reforms	Share of high-skilled	8.5	11.2	0.1	0.2	0.5	1.4
	Share of low-skilled	24.9	7.3	0.2	0.7	1.6	2.9
Labour market reforms	Female non-participation (25-55ys):			0.5	0.8	0.9	0.8
	- low-skilled	33.2	25.8				
	- medium-skilled	15.3	10.8				
	- high-skilled	8.7	4.8				
	Low-skilled male non-participation (25-55ys)	13.6	7.9	0.1	0.1	0.1	0.1
	Elderly non-participation (55-64ys):			0.5	1.4	3.9	5.4
	- low-skilled	22.4	13.4				
	- medium-skilled	11.9	5.0				
	- high-skilled	5.6	3.2				
	ALMP (% of GDP over unemployment share)	15.2	28.6	0.1	0.3	0.3	0.4
	Benefit replacement rate*	57.8	52.3	0.3	0.5	0.8	0.7
R&D measure	R&D tax-credit rates	0.38	0.41	0.0	0.1	0.3	0.9
Total				4.2	7.7	13.3	17.8

Reform areas		HR	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	n.a.	11.56	0.1	0.1	0.2	0.4
Market regulation	Entry costs	9.25	1.99	0.1	0.4	0.6	0.9
Tax reform	Labour to consumption tax revenue ratio	0.97	0.9	0.1	0.2	0.4	0.4
Skill enhancing reforms	Share of high-skilled	4.5	11.2	0.2	0.7	1.8	3.9
	Share of low-skilled	18.7	7.3	0.2	0.4	1.2	3.4
Labour market reforms	Female non-participation (25-55ys):			0.7	1.6	2.6	2.9
	- low-skilled	47.3	25.8				
	- medium-skilled	22.9	10.8				
	- high-skilled	8.0	4.8				
	Low-skilled male non-participation (25-55ys)	25.4	7.9	0.0	0.1	0.3	0.3
	Elderly non-participation (55-64ys):			1.1	2.7	6.6	7.9
	- low-skilled	28.7	13.4				
	- medium-skilled	12.9	5.0				
	- high-skilled	8.0	3.2				
	ALMP (% of GDP over unemployment share)	2.4	28.6	0.3	0.5	0.4	0.5
	Benefit replacement rate*	n.a.	52.3	0.0	0.1	0.1	0.2
R&D measure	R&D tax-credit rates	n.a.	0.41	0.0	0.0	0.1	0.7
Total				2.8	6.9	14.3	21.4

Reform areas		HU	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	15.24	11.56	0.7	1.0	1.4	1.6
Market regulation	Entry costs	9.54	1.99	0.1	0.2	0.5	0.9
Tax reform	Labour to consumption tax revenue ratio	1.44	0.9	0.6	0.8	1.0	1.1
Skill enhancing reforms	Share of high-skilled	4.9	11.2	0.2	0.6	1.6	3.6
	Share of low-skilled	17.5	7.3	0.2	0.6	1.4	2.9
Labour market reforms	Female non-participation (25-55ys):			0.6	1.3	1.8	1.9
	- low-skilled	43.6	25.8				
	- medium-skilled	20.6	10.8				
	- high-skilled	17.2	4.8				
	Low-skilled male non-participation (25-55ys)	27.8	7.9	0.0	0.1	0.2	0.3
	Elderly non-participation (55-64ys):			0.9	2.1	4.8	5.3
	- low-skilled	25.6	13.4				
	- medium-skilled	14.0	5.0				
	- high-skilled	7.0	3.2				
	ALMP (% of GDP over unemployment share)	12.7	28.6	0.1	0.3	0.3	0.3
	Benefit replacement rate*	30.1	52.3	0.1	0.2	0.3	0.3
R&D measure	R&D tax-credit rates	0.25	0.41	0.0	0.0	0.2	1.2
Total				3.3	7.2	13.6	19.4

Reform areas		IE	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	13.84	11.56	0.4	0.6	0.8	0.9
Market regulation	Entry costs	2.57	1.99	0.0	0.0	0.1	0.5
Tax reform	Labour to consumption tax revenue ratio	1.63	0.9	0.6	0.8	1.1	1.0
Skill enhancing reforms	Share of high-skilled	9.3	11.2	0.0	0.1	0.4	1.3
	Share of low-skilled	23.3	7.3	0.2	0.7	1.6	3.2
Labour market reforms	Female non-participation (25-55ys):			0.8	1.6	3.2	3.9
	- low-skilled	54.4	25.8				
	- medium-skilled	31.2	10.8				
	- high-skilled	15.8	4.8				
	Low-skilled male non-participation (25-55ys)	20.6	7.9	0.1	0.2	0.3	0.4
	Elderly non-participation (55-64ys):			0.3	0.6	1.5	2.0
	- low-skilled	17.9	13.4				
	- medium-skilled	6.7	5.0				
	- high-skilled	4.1	3.2				
	ALMP (% of GDP over unemployment share)	10.3	28.6	0.2	0.4	0.3	0.4
	Benefit replacement rate*	74.1	52.3	0.9	1.5	2.0	1.8
R&D measure	R&D tax-credit rates	0.26	0.41	-0.1	0.0	0.1	1.0
Total				3.4	6.5	11.4	16.2

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Reform areas		IT	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	14.13	11.56	0.7	1.0	1.2	1.3
Market regulation	Entry costs	18.03	1.99	0.2	0.6	1.0	1.4
Tax reform	Labour to consumption tax revenue ratio	3.04	0.9	1.0	1.3	1.2	1.2
Skill enhancing reforms	Share of high-skilled	4.2	11.2	0.1	0.5	1.4	3.2
	Share of low-skilled	41.8	7.3	0.5	1.6	3.8	6.7
Labour market reforms	Female non-participation (25-55ys):			0.7	1.6	3.5	4.6
	- low-skilled	50.2	25.8				
	- medium-skilled	27.7	10.8				
	- high-skilled	17.3	4.8				
	Low-skilled male non-participation (25-55ys)	15.0	7.9	0.2	0.4	0.4	0.5
	Elderly non-participation (55-64ys):			0.4	1.1	2.6	2.8
	- low-skilled	20.0	13.4				
	- medium-skilled	7.6	5.0				
	- high-skilled	4.4	3.2				
	ALMP (% of GDP over unemployment share)	7.7	28.6	0.2	0.4	0.4	0.5
	Benefit replacement rate*	9.2	52.3	0.0	0.0	0.0	-0.1
R&D measure	R&D tax-credit rates	0.12	0.41	-0.1	0.1	0.5	1.3
Total				3.9	8.5	16.1	23.4

Reform areas		LT	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	17.61	11.56	1.0	1.4	1.9	2.3
Market regulation	Entry costs	6.23	1.99	0.0	0.1	0.3	0.7
Tax reform	Labour to consumption tax revenue ratio	1.38	0.9	0.5	0.6	0.8	0.8
Skill enhancing reforms	Share of high-skilled	9.9	11.2	0.0	0.1	0.2	1.0
	Share of low-skilled	6.6	7.3	0.1	0.1	0.2	0.3
Labour market reforms	Female non-participation (25-55ys):			0.5	0.6	0.8	0.9
	- low-skilled	36.5	25.8				
	- medium-skilled	14.9	10.8				
	- high-skilled	4.5	4.8				
	Low-skilled male non-participation (25-55ys)	28.4	7.9	0.0	0.1	0.1	0.1
	Elderly non-participation (55-64ys):			0.5	1.3	3.2	4.1
	- low-skilled	18.3	13.4				
	- medium-skilled	11.4	5.0				
	- high-skilled	4.0	3.2				
	ALMP (% of GDP over unemployment share)	2.3	28.6	0.3	0.7	0.6	0.6
	Benefit replacement rate*	52.5	52.3	0.0	0.1	0.1	0.2
R&D measure	R&D tax-credit rates	n.a.	0.41	0.0	0.0	0.1	0.7
Total				2.9	5.0	8.3	11.8

Reform areas		LU	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	18.25	11.56	1.6	2.2	3.0	3.2
Market regulation	Entry costs	4.76	1.99	0.1	0.2	0.4	0.8
Tax reform	Labour to consumption tax revenue ratio	1.88	0.9	1.1	1.6	1.7	1.4
Skill enhancing reforms	Share of high-skilled	8.2	11.2	0.1	0.2	0.7	1.9
	Share of low-skilled	19.5	7.3	0.2	0.6	1.3	1.8
Labour market reforms	Female non-participation (25-55ys):			0.6	1.2	1.7	1.7
	- low-skilled	27.1	25.8				
	- medium-skilled	22.5	10.8				
	- high-skilled	13.3	4.8				
	Low-skilled male non-participation (25-55ys)	8.0	7.9	0.0	0.0	0.0	0.0
	Elderly non-participation (55-64ys):			0.8	1.9	4.4	4.9
	- low-skilled	19.5	13.4				
	- medium-skilled	13.9	5.0				
	- high-skilled	4.6	3.2				
	ALMP (% of GDP over unemployment share)	19.8	28.6	0.0	0.1	0.1	0.2
	Benefit replacement rate*	72.5	52.3	0.9	1.4	1.7	1.6
R&D measure	R&D tax-credit rates	-0.01	0.41	-0.1	0.1	0.5	1.7
Total				5.3	9.5	15.7	19.1

Reform areas		LV	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	19.13	11.56	1.4	2.1	3.0	3.6
Market regulation	Entry costs	6.53	1.99	0.1	0.2	0.4	0.7
Tax reform	Labour to consumption tax revenue ratio	1.37	0.9	0.5	0.6	0.8	0.8
Skill enhancing reforms	Share of high-skilled	7.2	11.2	0.1	0.3	0.7	2.0
	Share of low-skilled	10.6	7.3	0.1	0.2	0.3	0.6
Labour market reforms	Female non-participation (25-55ys):			0.6	1.0	1.2	1.4
	- low-skilled	36.3	25.8				
	- medium-skilled	17.3	10.8				
	- high-skilled	9.1	4.8				
	Low-skilled male non-participation (25-55ys)	17.6	7.9	0.0	0.1	0.1	0.2
	Elderly non-participation (55-64ys):			0.5	1.1	2.9	3.9
	- low-skilled	16.4	13.4				
	- medium-skilled	10.3	5.0				
	- high-skilled	4.3	3.2				
	ALMP (% of GDP over unemployment share)	2.4	28.6	0.3	0.6	0.5	0.5
	Benefit replacement rate*	56.6	52.3	0.2	0.4	0.5	0.5
R&D measure	R&D tax-credit rates	n.a.	0.41	0.0	0.0	0.1	0.7
Total				3.7	6.6	10.5	14.8

Reform areas		MT	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	10.62	11.56	0.1	0.1	0.2	0.2
Market regulation	Entry costs	20.32	1.99	0.2	0.7	1.1	1.5
Tax reform	Labour to consumption tax revenue ratio	1.18	0.9	0.2	0.3	0.4	0.5
Skill enhancing reforms	Share of high-skilled	3.5	11.2	0.1	0.3	0.8	1.6
	Share of low-skilled	59.4	7.3	0.9	3.1	7.0	12.1
Labour market reforms	Female non-participation (25-55ys):			0.6	1.4	2.4	4.1
	- low-skilled	59.1	25.8				
	- medium-skilled	21.7	10.8				
	- high-skilled	10.8	4.8				
	Low-skilled male non-participation (25-55ys)	7.7	7.9	0.0	0.0	0.0	0.0
	Elderly non-participation (55-64ys):			0.5	1.3	3.2	4.2
	- low-skilled	22.6	13.4				
	- medium-skilled	6.8	5.0				
	- high-skilled	4.4	3.2				
	ALMP (% of GDP over unemployment share)	1.8	28.6	0.2	0.4	0.5	0.5
	Benefit replacement rate*	52.8	52.3	0.0	0.1	0.1	0.2
R&D measure	R&D tax-credit rates	n.a.	0.41	0.0	0.0	0.0	0.5
Total				2.9	7.6	15.8	25.5

Reform areas		NL	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	13.94	11.56	0.6	0.9	1.2	1.3
Market regulation	Entry costs	6.44	1.99	0.0	0.1	0.2	0.6
Tax reform	Labour to consumption tax revenue ratio	2.59	0.9	1.4	2.0	2.5	2.4
Skill enhancing reforms	Share of high-skilled	6.3	11.2	0.0	0.1	0.6	2.0
	Share of low-skilled	24.2	7.3	0.2	0.8	1.8	3.6
Labour market reforms	Female non-participation (25-55ys):			0.6	1.0	1.2	1.3
	- low-skilled	34.7	25.8				
	- medium-skilled	15.4	10.8				
	- high-skilled	7.3	4.8				
	Low-skilled male non-participation (25-55ys)	14.9	7.9	0.1	0.1	0.2	0.2
	Elderly non-participation (55-64ys):			0.3	0.7	1.7	2.3
	- low-skilled	17.6	13.4				
	- medium-skilled	6.9	5.0				
	- high-skilled	4.2	3.2				
	ALMP (% of GDP over unemployment share)	22.9	28.6	0.0	0.1	0.1	0.1
	Benefit replacement rate*	71.7	52.3	1.0	1.7	2.3	2.2
R&D measure	R&D tax-credit rates	0.23	0.41	-0.1	-0.1	0.0	1.0
Total				4.1	7.3	11.8	16.9

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Reform areas		PL	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	15.41	11.56	0.7	1.0	1.4	1.8
Market regulation	Entry costs	22.08	1.99	0.2	0.6	1.1	1.9
Tax reform	Labour to consumption tax revenue ratio	1.48	0.9	0.5	0.8	1.1	1.2
Skill enhancing reforms	Share of high-skilled	6.0	11.2	0.1	0.4	1.1	3.2
	Share of low-skilled	9.9	7.3	0.0	0.1	0.4	1.1
Labour market reforms	Female non-participation (25-55ys):			0.6	1.2	2.2	2.5
	- low-skilled	46.9	25.8				
	- medium-skilled	24.8	10.8				
	- high-skilled	9.3	4.8				
	Low-skilled male non-participation (25-55ys)	28.0	7.9	0.0	0.1	0.1	0.2
	Elderly non-participation (55-64ys):			1.0	2.4	6.0	7.4
	- low-skilled	32.1	13.4				
	- medium-skilled	15.6	5.0				
	- high-skilled	4.6	3.2				
	ALMP (% of GDP over unemployment share)	7.3	28.6	0.2	0.4	0.4	0.4
	Benefit replacement rate*	45.6	52.3	0.0	0.1	0.1	0.2
R&D measure	R&D tax-credit rates	0.00	0.41	-0.1	0.0	0.4	1.4
Total				3.3	7.1	14.4	21.3

Reform areas		PT	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	15.06	11.56	0.7	1.0	1.4	1.6
Market regulation	Entry costs	3.19	1.99	0.0	0.1	0.1	0.4
Tax reform	Labour to consumption tax revenue ratio	1.35	0.9	0.3	0.4	0.5	0.6
Skill enhancing reforms	Share of high-skilled	4.1	11.2	0.0	0.2	0.9	2.5
	Share of low-skilled	60.2	7.3	0.7	2.8	6.5	12.0
Labour market reforms	Female non-participation (25-55ys):			0.1	0.1	0.1	0.2
	- low-skilled	22.4	25.8				
	- medium-skilled	8.7	10.8				
	- high-skilled	4.8	4.8				
	Low-skilled male non-participation (25-55ys)	10.6	7.9	0.1	0.2	0.2	0.2
	Elderly non-participation (55-64ys):			0.1	0.2	0.5	0.8
	- low-skilled	14.5	13.4				
	- medium-skilled	4.2	5.0				
	- high-skilled	5.0	3.2				
	ALMP (% of GDP over unemployment share)	5.7	28.6	0.3	0.5	0.3	0.4
	Benefit replacement rate*	48.8	52.3	0.0	0.0	0.1	0.1
R&D measure	R&D tax-credit rates	0.49	0.41	0.0	0.0	0.1	0.8
Total				2.4	5.5	10.7	19.5

Reform areas		RO	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	20.78	11.56	1.5	2.4	3.3	4.0
Market regulation	Entry costs	5.27	1.99	0.2	0.5	0.8	1.3
Tax reform	Labour to consumption tax revenue ratio	1.02	0.9	0.1	0.2	0.4	0.5
Skill enhancing reforms	Share of high-skilled	4.9	11.2	0.2	0.8	2.2	5.1
	Share of low-skilled	23.7	7.3	0.2	0.5	1.3	3.0
Labour market reforms	Female non-participation (25-55ys):			0.7	1.5	2.9	3.3
	- low-skilled	46.5	25.8				
	- medium-skilled	27.6	10.8				
	- high-skilled	8.5	4.8				
	Low-skilled male non-participation (25-55ys)	22.1	7.9	0.1	0.2	0.3	0.3
	Elderly non-participation (55-64ys):			0.7	1.7	4.0	4.9
	- low-skilled	19.6	13.4				
	- medium-skilled	12.3	5.0				
	- high-skilled	5.0	3.2				
	ALMP (% of GDP over unemployment share)	1.0	28.6	0.2	0.5	0.6	0.6
	Benefit replacement rate*	25.6	52.3	0.0	0.1	0.1	0.2
R&D measure	R&D tax-credit rates	n.a.	0.41	0.0	0.0	0.2	1.0
Total				4.0	8.3	16.0	24.2

Reform areas		SE	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	13.35	11.56	0.4	0.5	0.8	1.0
Market regulation	Entry costs	5.02	1.99	0.0	0.0	0.1	0.4
Tax reform	Labour to consumption tax revenue ratio	1.88	0.9	0.3	0.5	0.7	0.8
Skill enhancing reforms	Share of high-skilled	9.0	11.2	0.0	0.0	0.1	0.8
	Share of low-skilled	16.8	7.3	0.1	0.3	0.8	1.8
Labour market reforms	Female non-participation (25-55ys):			0.1	0.2	0.3	0.5
	- low-skilled	31.8	25.8				
	- medium-skilled	11.6	10.8				
	- high-skilled	6.6	4.8				
	Low-skilled male non-participation (25-55ys)	13.9	7.9	0.1	0.1	0.1	0.2
	Elderly non-participation (55-64ys):			0.0	0.0	0.2	0.5
	- low-skilled	12.6	13.4				
	- medium-skilled	4.8	5.0				
	- high-skilled	2.6	3.2				
	ALMP (% of GDP over unemployment share)	24.0	28.6	0.0	0.1	0.1	0.1
	Benefit replacement rate*	64.3	52.3	0.3	0.5	0.6	0.7
R&D measure	R&D tax-credit rates	-0.01	0.41	-0.2	-0.2	0.0	1.2
Total				1.1	2.0	3.7	8.0

Reform areas		SI	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	15.22	11.56	0.8	1.1	1.5	1.6
Market regulation	Entry costs	1.63	1.99	0.0	0.0	0.1	0.4
Tax reform	Labour to consumption tax revenue ratio	1.66	0.9	0.7	0.9	1.1	1.1
Skill enhancing reforms	Share of high-skilled	6.7	11.2	0.1	0.2	0.7	2.3
	Share of low-skilled	14.6	7.3	0.2	0.5	1.2	2.5
Labour market reforms	Female non-participation (25-55ys):			0.3	0.4	0.5	0.6
	- low-skilled	29.2	25.8				
	- medium-skilled	11.4	10.8				
	- high-skilled	4.9	4.8				
	Low-skilled male non-participation (25-55ys)	18.7	7.9	0.0	0.1	0.1	0.1
	Elderly non-participation (55-64ys):			1.3	3.1	7.6	9.3
	- low-skilled	31.4	13.4				
	- medium-skilled	15.9	5.0				
	- high-skilled	7.3	3.2				
	ALMP (% of GDP over unemployment share)	4.3	28.6	0.2	0.4	0.4	0.4
	Benefit replacement rate*	61.0	52.3	0.4	0.8	1.0	0.9
R&D measure	R&D tax-credit rates	0.16	0.41	-0.1	-0.2	0.0	0.9
Total				3.7	7.3	14.3	20.3

Reform areas		SK	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	17.22	11.56	1.1	1.6	2.2	2.7
Market regulation	Entry costs	5.37	1.99	0.0	0.2	0.3	0.7
Tax reform	Labour to consumption tax revenue ratio	1.71	0.9	0.6	0.8	1.1	1.2
Skill enhancing reforms	Share of high-skilled	5.2	11.2	0.1	0.3	1.0	2.7
	Share of low-skilled	8.1	7.3	0.1	0.1	0.2	0.7
Labour market reforms	Female non-participation (25-55ys):			0.5	1.1	1.5	1.8
	- low-skilled	39.8	25.8				
	- medium-skilled	18.9	10.8				
	- high-skilled	17.1	4.8				
	Low-skilled male non-participation (25-55ys)	24.7	7.9	0.0	0.0	0.1	0.1
	Elderly non-participation (55-64ys):			0.6	1.4	3.6	4.9
	- low-skilled	28.2	13.4				
	- medium-skilled	11.4	5.0				
	- high-skilled	5.2	3.2				
	ALMP (% of GDP over unemployment share)	2.8	28.6	0.2	0.5	0.4	0.4
	Benefit replacement rate*	39.0	52.3	0.0	0.1	0.2	0.2
R&D measure	R&D tax-credit rates	-0.01	0.41	-0.1	0.0	0.2	1.0
Total				3.2	6.1	10.8	16.4



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Reform areas		UK	Average 3 best EU	GDP % relative to baseline			
				5 years	10 years	20 years	50 years
Market competition	Services sector markups	12.19	11.56	0.2	0.3	0.4	0.5
Market regulation	Entry costs	3.94	1.99	0.0	0.0	0.1	0.3
Tax reform	Labour to consumption tax revenue ratio	1.51	0.9	0.3	0.5	0.6	0.7
Skill enhancing reforms	Share of high-skilled	9.4	11.2	0.0	0.0	0.1	0.7
	Share of low-skilled	21.6	7.3	0.2	0.6	1.4	3.0
Labour market reforms	Female non-participation (25-55ys):			0.6	1.2	1.6	1.8
	- low-skilled	40.5	25.8				
	- medium-skilled	19.8	10.8				
	- high-skilled	11.8	4.8				
	Low-skilled male non-participation (25-55ys)	18.0	7.9	0.1	0.2	0.2	0.2
	Elderly non-participation (55-64ys):			0.2	0.5	1.2	1.6
	- low-skilled	14.5	13.4				
	- medium-skilled	7.1	5.0				
	- high-skilled	5.5	3.2				
	ALMP (% of GDP over unemployment share)	2.0	28.6	0.2	0.5	0.5	0.5
	Benefit replacement rate*	62.2	52.3	0.4	0.7	0.9	0.9
R&D measure	R&D tax-credit rates	0.17	0.41	-0.1	-0.1	0.0	0.7
Total				2.1	4.3	7.0	10.7







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