

## Chapter 2

# Labour market resilience: The role of structural and macroeconomic policies

*The chapter provides an overview of labour market resilience in the wake of the Great Recession of 2008-09 and the role played by macroeconomic and structural policies. The OECD unemployment rate has returned to close to its pre-crisis level, but the unemployment cost of the Great Recession has nonetheless been very large and long-lasting in many countries. Moreover, as the recovery in output has been weak relative to the recovery in employment, labour productivity and wage growth remain low. Labour market resilience depends crucially on macroeconomic and labour market policy settings. Macroeconomic policies are highly effective in limiting employment declines during economic downturns and preventing that cyclical increases in unemployment become structural. Spending on active labour market policies needs to respond strongly to cyclical increases in unemployment to promote a quick return to work in the recovery and preserve the mutual-obligations ethos of activation regimes. Overly strict employment protection for regular workers reduces resilience by promoting the use of temporary contracts and slowing job creation in the recovery. Co-ordinated collective bargaining systems can promote resilience by facilitating wage and working-time adjustments.*

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

## Key findings

The Great Recession of 2008-09 and the slow pace of the subsequent recovery have highlighted that large economic downturns can have long-lasting economic and social effects. This chapter provides an overview of labour market resilience in the wake of the Great Recession of 2008-09 and the role played by macroeconomic and labour market policies. Resilience is defined in terms of the social and economic costs of economic downturns, i.e. the capacity of an economy to limit persistent deviations in output and labour market outcomes from pre-crisis trends in the aftermath of adverse aggregate shocks. This definition encompasses the avoidance of excessive fluctuations in output and labour market outcomes as well as the swiftness of the rebound. The key findings are as follows:

- In the OECD as a whole, labour markets have recovered more strongly than output from the Great Recession of 2008-09. As of the first quarter of 2017, the average unemployment rate in the OECD was 6.2% (0.5 percentage point above its rate at the start of the crisis), whereas GDP per capita remained well below its pre-crisis trend (by about 6%).
  - ❖ Although structural unemployment increased and labour force participation declined in a number of OECD countries, in the OECD as a whole structural labour market outcomes have not visibly deteriorated since the start of the crisis despite a significant slowdown in potential output growth. This implies that the slowdown in potential output growth is largely unrelated to labour market developments.
  - ❖ The flipside of higher resilience in terms of unemployment than in output at the aggregate OECD level was a slowdown in the growth rate of labour productivity and wages relative to their pre-crisis trends. Since this largely reflects the slowdown in potential output growth weak wage growth may persist for some time.
- There are large differences in labour market resilience across countries. Countries where the unemployment cost of the crisis was very high include Greece and Spain, whereas countries where the unemployment cost was modest include Germany, Japan and Korea.
  - ❖ Differences in labour market resilience across countries to a large extent reflect differences in output developments. These include differences in the size and nature of the economic shock but also subsequent output developments, which in part are shaped by the response of macroeconomic policies to the crisis. Overall, around half of the cross-country variation in unemployment resilience is explained by output developments.
  - ❖ Cross-country differences in the unemployment impact of the crisis relative to output reflect differences in the extent to which declines in labour productivity growth and – to a lesser extent – working time and labour market participation absorbed declines in output growth. These differences depend to a large extent on differences in labour market policies and institutions across countries.

- Labour market policies and institutions shape the impact of economic shocks on employment and unemployment by affecting the degree to which firms absorb declines in demand through lower profits (“labour hoarding”), adjustments in wages and working time and the effective supply of labour.
  - ❖ Stricter employment protection legislation makes the unemployment rate more sensitive to a given shock by promoting the use of temporary contracts which are more cyclical and reducing the number of people hired on regular contracts in the subsequent recovery.
  - ❖ A better co-ordination of collective bargaining arrangements across sectors or firms can help to reduce the impact of an adverse shock on unemployment in the short term by facilitating adjustments in wages and working time, so that layoffs can be avoided. The importance of collective bargaining per se, as measured by the share of workers covered in the total economy, is not associated with resilience.
- Fiscal support during economic downturns – both through automatic fiscal stabilisers (i.e. increases in government spending and declines in tax revenues that occur directly as a result of a downturn in economic activity) and additional discretionary measures – promotes labour market resilience by stabilising aggregate demand. It also reduces the risk of hysteresis, i.e. the risk that cyclical changes in unemployment or productivity as a result of the crisis persist even after aggregate demand has recovered.
  - ❖ Fiscal support is more effective during economic downturns than during recoveries, implying that its timing over the business cycle matters. Fiscal support through automatic fiscal stabilisers responds instantaneously to business cycle conditions, but additional discretionary measures need to be implemented in a timely manner to be effective.
  - ❖ On average across countries, an increase in public spending of 1% of GDP during an extreme economic downturn increases output by up to 2% and reduces the unemployment rate by up to 1 percentage point after two years. Fiscal support is likely to be less effective in countries with high degrees of trade openness, high levels of public debt, flexible exchange rates and unconstrained monetary policy.
  - ❖ Public investment and spending on active labour market programmes (e.g. job-search assistance, hiring subsidies and training) are particularly effective in reducing unemployment during economic downturns, provided that they can be scaled up in a timely manner.
  - ❖ Fiscal support during downturns diminishes the risk of labour market hysteresis by reducing the long-term unemployment rate, with spending on active labour market programmes being particularly effective.

Overall, the analysis shows that fiscal policy can be a highly effective tool for mitigating the unemployment costs of adverse economic shocks. During the Great Recession of 2008-09, fiscal policy contributed to labour market resilience in most countries, with discretionary fiscal measures typically complementing or not fully offsetting automatic fiscal stabilisers. However, the use of fiscal policy as a stabilisation tool is only possible if sufficient fiscal space is available during recessions, which explains why the role of automatic stabilisers was severely constrained in a number of countries that were hit particularly hard by the crisis (e.g. Greece and Hungary). This highlights the importance of keeping public debt at prudent levels during expansions and building sufficient flexibility into institutional fiscal rules. Despite the importance of fiscal policy for labour market resilience, differences

among countries' fiscal policies can only explain a small part of cross-country differences in labour market resilience, which are largely explained by differences in the size and nature of the economic shock in each country and the design of each country's structural policies and institutions.

## Introduction

The Great Recession of 2008-09 and the slow pace of the subsequent recovery have highlighted how large economic downturns can have long-lasting economic and social costs. Some public policies that reduce the ex-ante risk of downturns also reduce growth and employment in the long term (Caldera-Sánchez et al., 2016). However, this is not the case with public policies that enhance labour market resilience, i.e. an economy's capacity to limit fluctuations in employment and to quickly rebound in the wake of economic shocks. These policies are key not only to limiting the short-term social cost of economic downturns but also to supporting labour market and economic performance in the medium to long term, by mitigating the knock-on effects of their cyclical impact on higher structural unemployment, lower labour force participation and lower wage growth ("hysteresis").

This chapter provides an overview of labour market resilience in OECD countries in the wake of the Great Recession of 2008-09 and empirically assesses the role played by macroeconomic and labour market policies. Drawing on the experience from economic cycles since the mid-1980s, the chapter analyses how structural policies and institutions shape the labour market response to aggregate shocks and the extent to which macroeconomic policies can stabilise aggregate demand during economic downturns. It further analyses how labour market and fiscal policies affect the extent to which an economic downturn continues to have an impact on labour market performance through hysteresis effects that persist even once cyclical effects have faded. This chapter provides an update of work presented in the *OECD Employment Outlook 2012* (OECD, 2012) by using data up to 2016, while also extending it by taking account of the role of macroeconomic policies and paying more attention to possible hysteresis-type effects.

The remainder of the chapter is organised as follows. Section 1 describes the conceptual framework and assesses labour market resilience in the wake of the Great Recession. Section 2 analyses how various labour market policies shape the effect of a given aggregate shock on labour market outcomes and assesses the effects of fiscal policy on labour market performance during economic downturns. Section 3 uses the resulting estimates to quantify the role of labour market and fiscal policies for labour market resilience during and in the wake of the Great Recession. The final section contains some concluding remarks.

## 1. Resilience in the wake of the Great Recession

Resilience in this chapter is defined in terms of the social and economic costs of economic downturns, i.e. the capacity of an economy to limit persistent deviations in output and labour market outcomes from pre-crisis trends in the aftermath of adverse aggregate shocks (i.e. recessions). This definition encompasses the avoidance of excessive fluctuations in output and labour market outcomes as well as the swiftness of the rebound. In the descriptive analysis of resilience in this section, labour market outcomes are not expressed directly in relation to the size of the initial shock, but output and labour market resilience are analysed jointly to allow gauging the labour market response to output developments. In the econometric analysis in the subsequent sections, the size of the initial shock is explicitly taken into account.

In operational terms, *output* resilience refers to the cumulative deviation of output from a counterfactual trend following an adverse aggregate shock, while *labour market* resilience refers to the cumulative deviation of unemployment from its pre-crisis structural rate. The structural rate of unemployment is approximated by the non-accelerating inflation rate of unemployment (NAIRU). The counterfactual output trend in this chapter is based on Ollivaud and Turner (2015), who calculate it using the growth rate of trend labour productivity (the ratio of potential output to potential employment) over the period 2000-07 and counterfactual potential employment growth over 2008-15. Counterfactual potential employment growth is obtained by using pre-crisis trends in potential employment rates (the ratio of potential employment to the working-age population) by age cohort but allowing for observed demographic developments over 2008-15. The advantage of focusing on pre-crisis trend labour productivity growth rather than pre-crisis observed labour productivity growth is that it is less sensitive to unsustainable booms in the run-up to the Great Recession. Accounting for actual demographic developments over 2008-15 for the calculation of counterfactual potential employment growth reduces the risk that declines in potential output that would have occurred in the absence of the crisis, are erroneously attributed to the crisis.

Resilience can be decomposed into cyclical and structural components, with the latter obtained as cumulative deviations of potential output from the counterfactual output trend and the NAIRU from the pre-crisis rate. A small cyclical component implies limited deviations of output and unemployment from potential output and the NAIRU in terms of amplitude and duration. A small structural component implies limited *hysteresis* as potential output and the NAIRU remain close to their counterfactual. The decomposition thus allows assessing the extent to which output losses and unemployment increases in the wake of the crisis reflected transitory or persistent developments and the extent to which developments in potential output were reflected in structural unemployment.

Given that estimates of potential output and the NAIRU are surrounded by considerable uncertainty, the decomposition is used exclusively for descriptive purposes in the present section. By contrast, the econometric analysis in Section 2 does not rely on potential output and the NAIRU to distinguish between cyclical and structural effects.

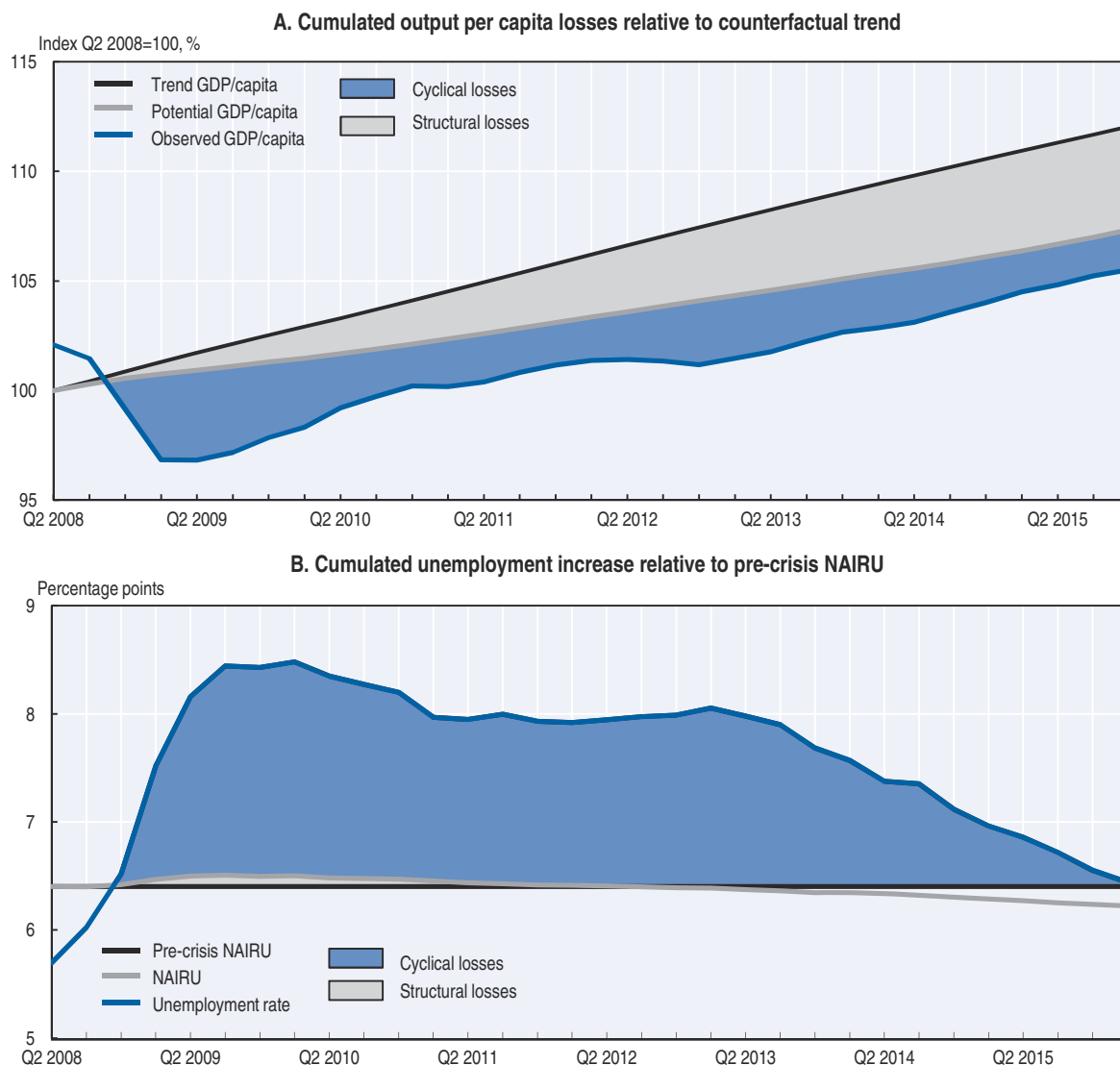
### ***The OECD unemployment rate has returned to close to the pre-crisis level even though GDP remains well below the pre-crisis trend***

OECD output has deviated significantly from the pre-crisis trend in the wake of the Great Recession (Figure 2.1, Panel A).<sup>1</sup> By the second quarter of 2016, output per capita was about 6% below the pre-crisis trend, but the cumulative loss in output per capita since the Great Recession amounted to almost six months of income (6% of output per capita over eight years). This predominantly reflects the structural component of output resilience as measured by the deviation of potential output from the pre-crisis trend rather than its cyclical component as measured by the cumulative output gap. According to current estimates, the main impact of the crisis was therefore to change the growth rate of potential output, which implies that the effects of the crisis on output are likely to continue to be felt for a long time.

The impact of the Great Recession on unemployment has also been substantial, but in contrast to output, the unemployment rate for the OECD as a whole has returned to close to the pre-crisis level, with no significant increase in structural unemployment (Figure 2.1, Panel B). The cost of the crisis as measured by the cumulative increase in unemployment amounted to around 8 percentage points (average deviation of around 1 percentage point


Figure 2.1. **Output and unemployment developments in the OECD since the onset of the Great Recession**

2008-15



Note: The intercept of the counterfactual trend in Panel A is normalised to 100 and corresponds to the level of potential output per capita in Q2 2008. Its slope is the counterfactual potential output per capita growth rate in Ollivaud and Turner (2015). The pre-crisis NAIRU in Panel B is the NAIRU in Q2 2008. The area between the black and blue lines gives an indication of the total cost of the crisis in terms of the cumulative impacts on output and unemployment. The blue area gives an indication of the structural component, whereas the grey area gives an indication of its cyclical component.

Source: OECD calculations based on the *OECD Economic Outlook No. 100*, <https://stats.oecd.org/index.aspx?DataSetCode=EO>.

StatLink  <http://dx.doi.org/10.1787/888933477708>

from the pre-crisis NAIRU over eight years), but structural losses have been limited. This partly reflects good structural outcomes in a number of large countries that receive a large weight in the OECD average, including Germany, Japan, the United Kingdom and the United States. In many other OECD countries, the annualised deviation of structural unemployment from the pre-crisis rate was positive over the period 2008-15 (see below). There has further been no indication that the Great Recession has led to a persistent decline in effective labour supply. The aggregate OECD labour force participation rate has remained close to its pre-crisis value of 65%.

The absence of an increase in the rate of structural unemployment or a decline in the rate of labour force participation in the OECD area indicates that the slowdown in potential output growth is largely unrelated to labour market developments. This is consistent with evidence suggesting that the slowdown in potential output growth reflects declines in capital deepening and a slowdown in multi-factor productivity growth (Ollivaud et al., 2016). While the decline in capital deepening largely reflects increased financial frictions and persistent shortfalls in aggregate demand related to the economic downturn, the slowdown in multi-factor productivity growth began before the Great Recession and is therefore at best only partly related to the economic downturn (Andrews et al., 2016).

### ***Unemployment developments differed significantly across countries***

There are large differences in the overall degree of output resilience across OECD countries (Figure 2.2).<sup>2</sup> In countries with annualised output per capita losses of 12% or more, including Estonia, Greece and Latvia, cumulative losses over the period 2008-15 amount to at least a year of lost income (Panel A). Several other countries either were little affected by the Great Recession (e.g. Israel) or have partly made up for output losses relative to trend in the wake of the Great Recession through above-trend growth in later years (e.g. Germany).

Differences in output resilience translate to an important extent into differences in labour market resilience (Panel B). Countries with large deviations of output per capita from pre-crisis trends such as Greece and Ireland, which were hit by major banking and sovereign debt crises, typically experienced large deviations of unemployment from the pre-crisis rate. The opposite is true for countries with small deviations of output per capita from the pre-crisis trend, such as Germany and Japan that experienced transitory declines in external demand. Overall, around half of the variance in unemployment resilience is explained by output developments.

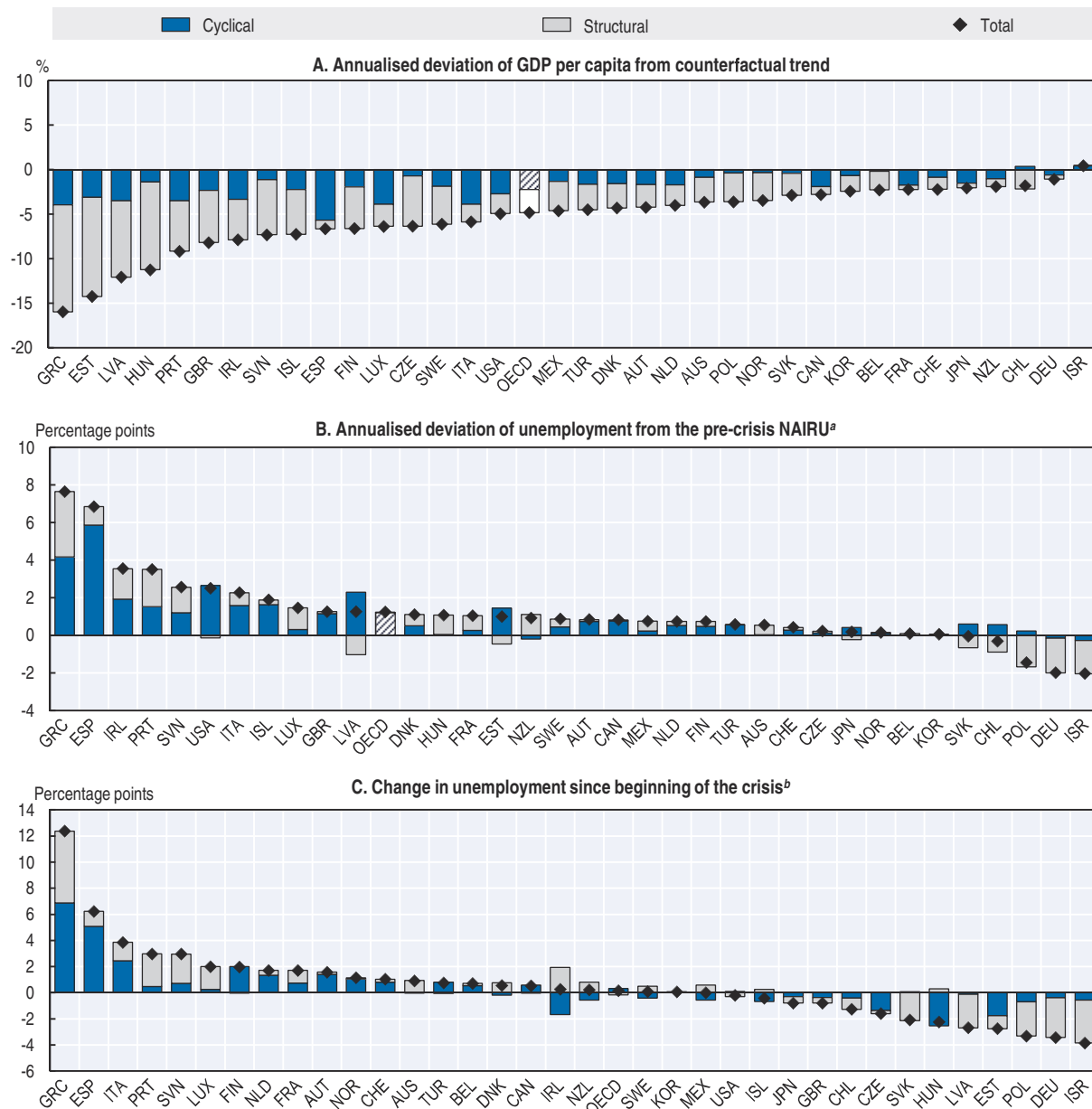
There are also large cross-country differences in the relative importance of the structural component of labour market resilience, but increases in the NAIRU were limited compared to the large deviations of potential output from pre-crisis trends. In the majority of countries, the annualised deviation of unemployment from the pre-crisis NAIRU was positive over the period 2008-15, and in 2015 the deviation remained positive in more than half of these countries (Panel C). The average annual deviation from the pre-crisis NAIRU amounted to over 5 percentage points in Greece and Spain, where structural unemployment increased, but was negative in Germany where structural unemployment continuously declined during most of the period. However, compared to the large number of countries that experienced average deviations of potential output per capita from pre-crisis trends of more than 5 percentage points, only few countries experienced average deviations of the NAIRU from the pre-crisis rate of more than 1 percentage point.

### ***Cross-country differences in the extent to which aggregate demand declines translated into unemployment increases mainly reflected differences in labour hoarding***

A high degree of resilience in terms of unemployment compared to output reflects adjustments in labour productivity, working time and labour force participation. Figure 2.3 decomposes the annualised deviation of output from the counterfactual trend into the annualised deviations of unemployment and working time from their pre-crisis rates and the annualised deviations of hourly labour productivity and labour force participation from

Figure 2.2. **A number of OECD countries experienced persistent deviations of unemployment from the pre-crisis NAIRU**

2008-15



a) The total height of the bars in Panel B denotes the deviation of the unemployment rate from the pre-crisis NAIRU, with the part in grey denoting the deviation of the NAIRU from the pre-crisis NAIRU.

b) The total height of the bars in Panel C denotes the change in the unemployment rate over 2008-15 with respect to the pre-crisis NAIRU.

Source: OECD calculations based on the OECD Economic Outlook No. 100, <https://stats.oecd.org/index.aspx?DataSetCode=EO>.

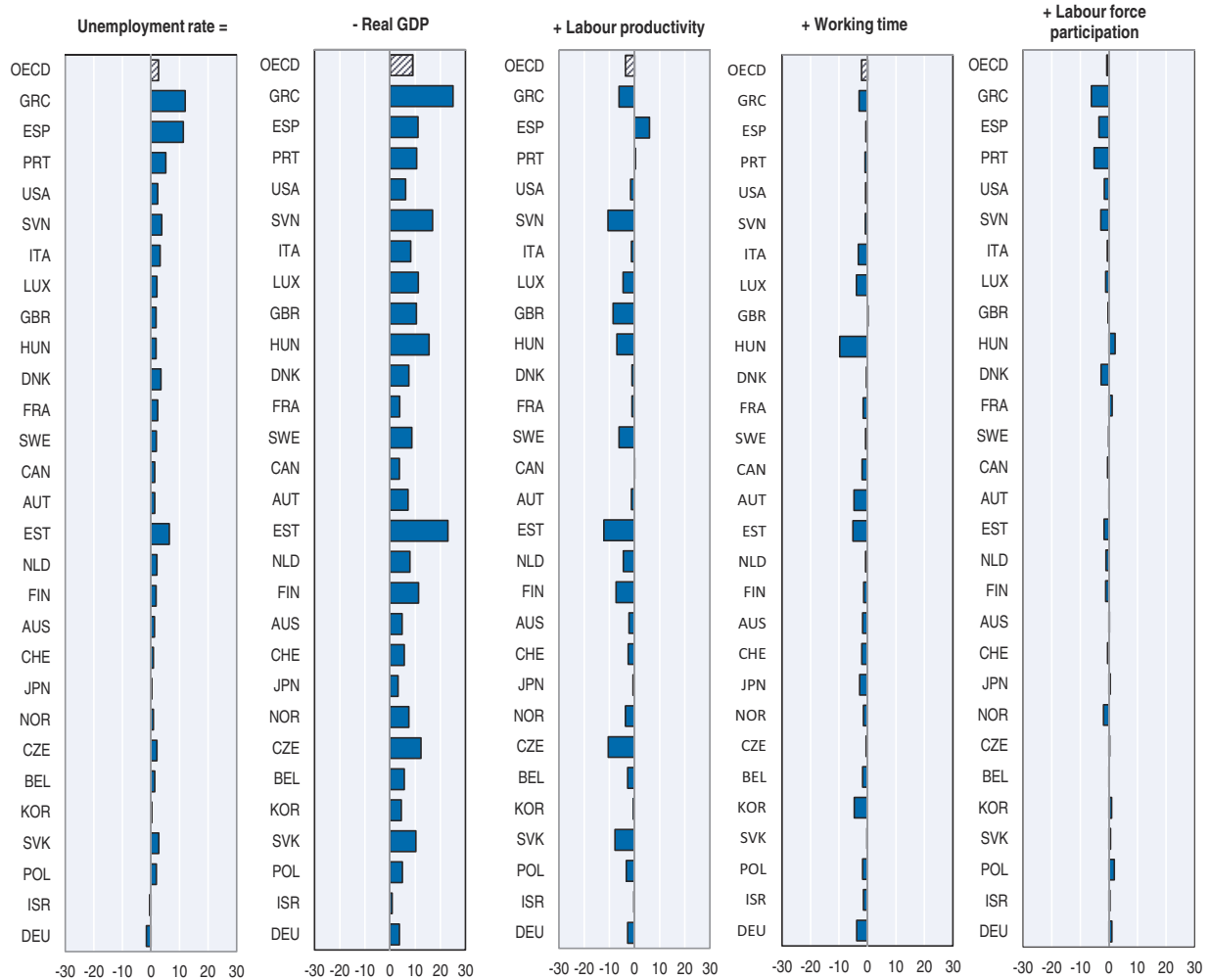
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their counterfactual trends. This decomposition can be used to explain – in an accounting sense – how developments in output were reflected in adjustments along different margins. For example, it reveals that for the OECD as a whole almost 30% of the decline in output was accounted for by an increase in the unemployment rate. It can also be used to show how adjustments in labour productivity, working time and labour force participation




Figure 2.3. **Declines in productivity, working time and participation dampened the impact on unemployment**

Decomposition of the annualised deviation of unemployment from the pre-crisis rate, 2008-15



Note: The decomposition is based on the approximation  $u - u^* \approx [-(y - y^*)] + [(y - y^*) - (n + h - (n^* + h^*))] + [h - h^*] + [lf - n^*]$ , where the right hand-side variables are expressed in logarithms and denote GDP ( $y$ ), the number of employees ( $n$ ), hours worked per employee ( $h$ ) and the labour force ( $lf$ ).  $u - u^*$  is the percentage point deviation of unemployment from the pre-crisis rate; the first right hand-side term in square brackets is the percentage deviation of GDP from the counterfactual trend in Ollivaud and Turner (2015); the second term is the percentage deviation of labour productivity from the pre-crisis trend; the third term is the percentage deviation of hours per worker from the pre-crisis level; and the fourth term is the percentage change in labour force participation in deviation from the counterfactual employment trend. In contrast to Figure 2.2, the reported deviations of unemployment and real GDP from the pre-crisis counterfactual rates and trends are computed relative to actual unemployment and output in Q2 2008 rather than the corresponding unemployment and output gaps. Given that unemployment and output gaps were typically positive in Q2 2008, the deviations in Figure 2.3 are typically larger than those in Figure 2.2.

Source: OECD calculations based on the OECD Economic Outlook No. 100, <https://stats.oecd.org/index.aspx?DataSetCode=EO>.

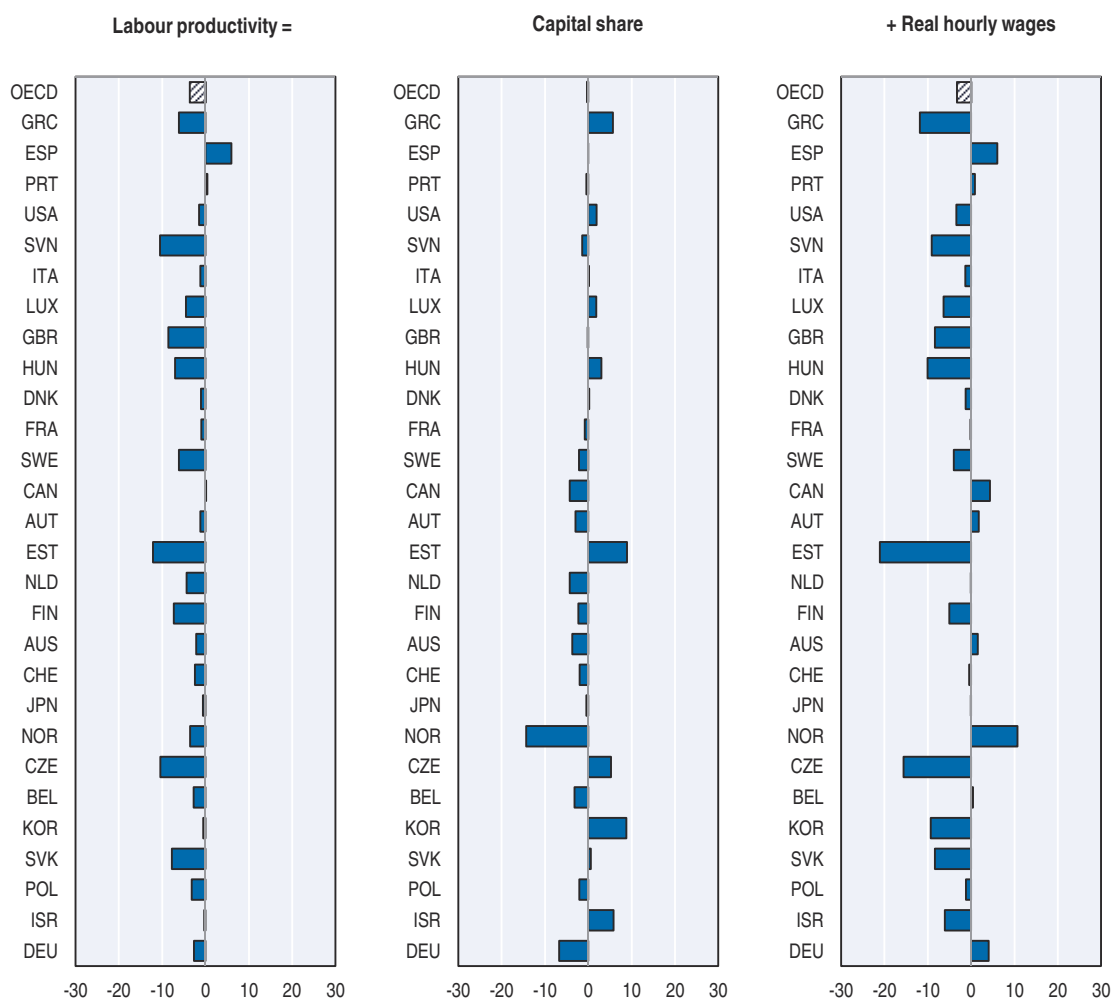
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can account for cross-country differences in the annualised unemployment response to the annualised decline in output. For the OECD as a whole, labour hoarding – which was reflected in lower hourly labour productivity growth – was the main adjustment margin that dampened the impact of the decline in GDP growth on unemployment, accounting for over 40% of the adjustment to the decline in output. Average adjustments in working time and labour force participation were typically more muted, accounting for about 25% and 10% of the decline in output on average across the OECD.

### Adjustments in labour productivity were reflected in lower wages

The slowdown in labour productivity growth was reflected in a slowdown in real wage growth rather than a slowdown in profit growth (Figure 2.4). At constant real wage trends, a slowdown in labour productivity growth would be reflected in a lower capital share in value added. While a number of countries experienced declines in the capital share, typically the brunt of the downward adjustment in labour productivity was borne by workers in terms of lower real wages.<sup>3</sup> In other words, the flip side of the high resilience in terms of unemployment was lower job quality.

Figure 2.4. **Lower labour productivity growth translated into lower real wage growth**  
Decomposition of the annualised deviation of labour productivity from the pre-crisis trend, 2008-15



Note: The decomposition is based on the logarithmic identity:  $(y - y^*) - (n + h - (n^* + h^*)) = [(y - y^*) - (n + h - (n^* + h^*)) - (w - w^*)] + (w - w^*)$ ,  $y$  is GDP,  $n$  is the number of employees,  $h$  is hours worked per employee and  $w$  is the real wage. The left hand side is the deviation of labour productivity from the pre-crisis trend, the first term in square brackets is the change in the capital share and  $(w - w^*)$  is the deviation of real wage growth from the pre-crisis trend.

Source: OECD calculations based on the OECD Economic Outlook No. 100, <https://stats.oecd.org/index.aspx?DataSetCode=EO>.

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To summarise, in the wake of the Great Recession, there were large cross-country differences in labour market resilience when measured in terms of unemployment. This was also the case for long-term and youth unemployment (Box 2.1). To a significant extent,

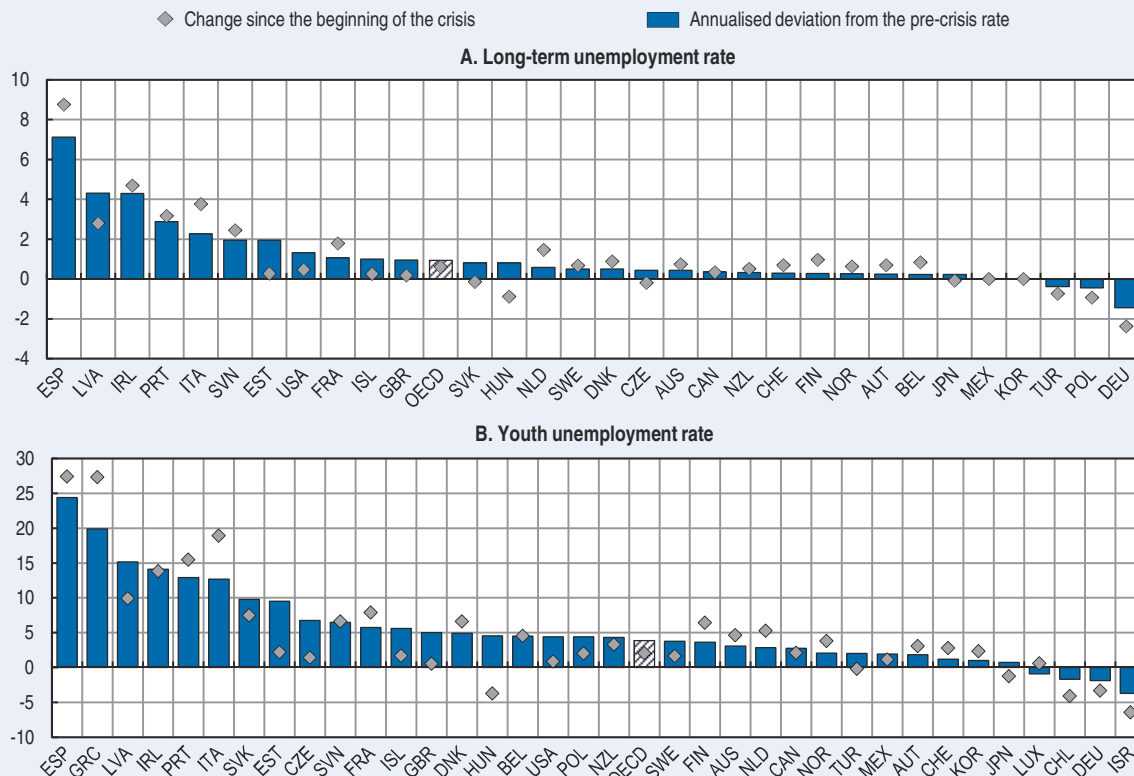
### Box 2.1. The impact of the crisis on long-term and youth unemployment

The Great Recession also had important implications for the structure of unemployment and its composition across vulnerable groups, particularly youth (see Figure 2.5).

- The cost of the crisis in terms of long-term unemployment was substantial, with the long-term unemployment rate remaining well above of its pre-crisis rate in most OECD countries (Figure 2.5, Panel A). The difficulty of finding work for these people is to some extent captured by the NAIRU. However, there is also a risk that some of these people become discouraged, stop searching for a job and leave the labour market altogether, with potentially important consequences for long-term labour supply and potential output.
- Youth have been particularly hard hit by the Great Recession (Figure 2.5, Panel B). The annualised unemployment impact for youth is about three times as large as for the working-age population as a whole. Previous studies have shown that unemployment spells early in the working life can have important scarring effects, resulting in more frequent unemployment spells and weak labour market attachment, with long-lasting consequences for life-time earnings (OECD, 2015).

Figure 2.5. Persistent increases in long-term and youth unemployment

2008-15



Note: The long-term unemployment rate is defined as number of unemployed people for one year or more as a share of the labour force. The youth unemployment rate is defined as the share of labour force participants aged 15-24 in unemployment.

Source: OECD Labour Force Statistics, [www.oecd.org/employment/onlineoecdemploymentdatabase.htm](http://www.oecd.org/employment/onlineoecdemploymentdatabase.htm).

StatLink  <http://dx.doi.org/10.1787/888933477741>

these cross-country differences reflected differences in output developments, which were related to the nature and the size of the initial aggregate shock and the effects of macroeconomic policies. For instance, unemployment typically increased more in

countries with major housing, banking or sovereign debt crises. However, unemployment developments also reflected different margins of labour market adjustment, which in turn partly depended on labour market policies and institutions.

## 2. The policy determinants of labour market resilience

### ***The role of labour market policies and institutions for labour market resilience***

Structural policies and institutions can affect labour market resilience through a number of different channels. First, structural policy settings affect the relative importance of different margins of labour input adjustment. In particular, they determine the degree of labour hoarding and whether adjustment takes place along the intensive margin, in terms of working time and hourly wages, or along the extensive margin, in terms of the number of jobs. Second, structural policy settings can also affect the extent to which any cyclical rises in unemployment translate into higher structural levels of unemployment. For instance, unemployed people may gradually become less employable as their skills deteriorate the longer they stay unemployed. The jobs created in the recovery may also differ from those that were destroyed in the downturn in terms of their location or skill requirements. While such job churn may raise growth in the longer term, for instance by generating better matches between job requirements and individuals' skills or moving labour to higher-productivity firms, it may also persistently raise unemployment if residential mobility is low or skills are not easily adaptable.

Labour market policies and institutions shape the sensitivity of unemployment, earnings per worker and employment to aggregate shocks. The empirical model therefore relates the response of labour market outcomes to changes in GDP to different policy settings across countries (see Box 2.2 for details). It simultaneously considers the following labour market policies and institutions: the stringency of employment protection provisions for regular workers, the average replacement rate of unemployment benefits, the coverage rate of collective bargaining agreements and a measure of the degree of centralisation and co-ordination in wage bargaining ("corporatism"). The results are visualised by focusing on the impulse response function during the first four years following a 1% decline in GDP under different institutional settings. More specifically, it shows impulse response functions for a one standard deviation increase in the policy or institution of interest relative to the impulse response function that is obtained when all policies and institutions are kept at their OECD average. Results are not shown for policies or institutions that have no significant effect on any of the indicators of resilience considered.

#### **Box 2.2. Labour market policies and institutions: The empirical model**

To analyse the short- to medium-term effects of labour market policies and institutions for labour market resilience, impulse response functions are estimated using the local projection method as proposed by Jordà (2005). This method allows for the robust estimation of impulse response functions by estimating their coefficients directly for each time horizon as opposed to deriving them indirectly from the estimates of a specific dynamic model, such as a vector auto-regression (VAR), which are typically more sensitive to misspecification.

The role of labour market policies and institutions for labour market resilience is examined by relating the response of labour market outcomes to output shocks to different policy settings across countries. Since most labour market policies cannot be deployed quickly

**Box 2.2. Labour market policies and institutions: The empirical model (cont.)**

to offset the negative effect of an aggregate shock on the labour market, the labour market policy that is in place at the time of the initial shock determines the labour market response. This means that the labour market response does not take account of reforms that took place in the wake of the crisis, including temporary measures taken in response to the crisis. More specifically, the following empirical model is used:

$$L_{ct+s} - L_{ct-1} = \gamma^s Y_{ct} + \sum_{j=1}^J \beta_j^s (Y_{ct} \cdot Str_{ct-1}^j) + \sum_{i=1}^2 \delta_i^s X_{ct-i} + \zeta_c^s + \xi_t^s + \varepsilon_{ct+s} \quad \forall s = 0, 1, \dots, S,$$

where  $L$  is the labour market outcome variable of interest;  $Y$  is the change in GDP;  $Str$  is the labour market policy setting in the year preceding the initial shock;  $X$  denotes a vector of controls including labour market policy settings to control for the independent effects of policies, GDP growth to control for the state of the business cycle and lags of the dependent variable to reduce serial correlation; and  $\zeta_c^s$  and  $\xi_t^s$  are country- and year-fixed effects.  $\beta_j^s$  denotes the difference in the labour market response  $s$  periods after the initial shock under different labour market policy settings at the time of the initial shock.

The empirical analysis considers the following labour market policies and institutions: the stringency of employment protection provisions related to the dismissal of regular workers; the generosity of unemployment benefits using the average replacement rate which takes account of the level of benefits and their maximum duration; the coverage rate of collective bargaining agreements; and a measure of the degree of centralisation or co-ordination of the collective wage bargaining process.<sup>1</sup> The analysis is based on an unbalanced panel of semi-annual data for the period 1986-2015 for 22 OECD countries.

The analysis updates and extends previous results reported in OECD (2012). One important difference is that the earlier analysis conditioned on contemporaneous developments in output whereas the analysis here only conditions on the size of the initial output shock. The present analysis therefore accounts for both the cyclical response of unemployment to the initial shock and its structural response as a result of hysteresis-type effects. Another difference is that the earlier analysis was limited to the period before the Great Recession while the analysis here includes the crisis and its aftermath.

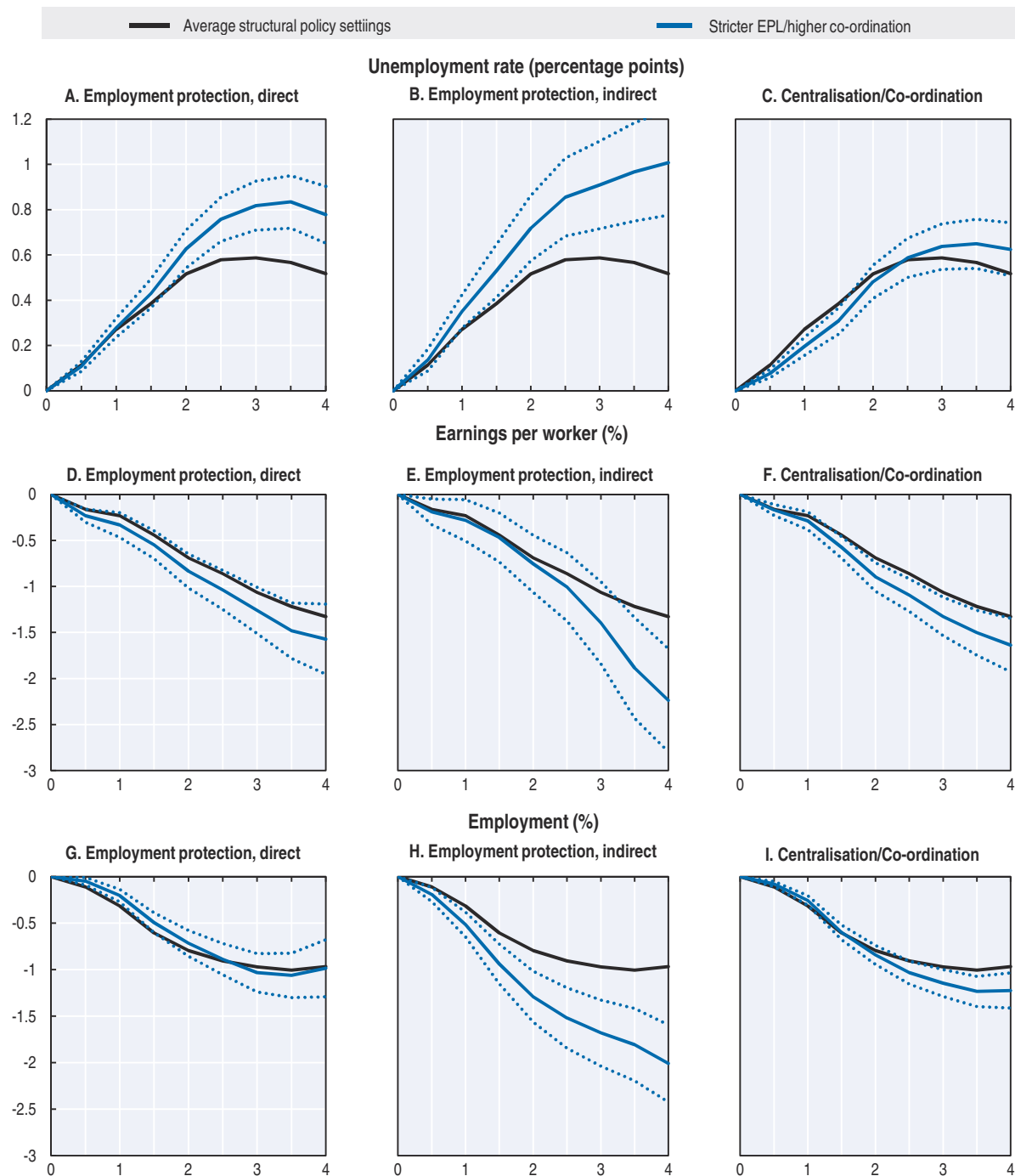
1. This is measured using an indicator which takes values 1 for decentralised and uncoordinated processes, and 2 and 3 for intermediate and high degrees of centralisation/co-ordination, respectively (Bassanini and Duval, 2006; OECD, 2004 and 2006). See Chapter 4 of this publication for an alternative way of classifying collective bargaining systems.

**Labour market policies shape the response of unemployment to aggregate shocks**

Drawing on the experience from economic cycles since the mid-1980s, the empirical analysis finds that, of the various labour market policy settings that might plausibly affect labour market resilience, only employment protection of regular workers and the centralisation/co-ordination of collective wage bargaining are significantly related with labour market resilience (Figure 2.6). The average replacement rate of unemployment benefits and collective bargaining coverage do not significantly dampen or amplify aggregate shocks in the near and medium term.<sup>4</sup>


- *Strict employment protection of regular workers tends to make labour markets less resilient.* The analysis distinguishes between the effect of employment protection for regular workers on labour market resilience through its impact on hiring and firing of regular workers (the direct effect) and through its impact on the use of temporary workers (the

**Figure 2.6. The role of labour market policies and institutions for labour market resilience**  
Impact of a 1-percentage point decline in GDP under alternative labour market policy settings over the following four years



Note: The solid black line denotes the impact of a 1-percentage point decline in GDP on the unemployment rate under average structural policy settings. The solid blue line indicates the point estimate of a 1-percentage point decline in GDP on the unemployment rate when the structural policy setting of interest is increased by one standard deviation, while the dotted blue lines denote the corresponding 90% confidence interval around the blue line relative to the black line.

Source: OECD calculations based on the OECD Economic Outlook No. 100, <https://stats.oecd.org/index.aspx?DataSetCode=EO>.

StatLink  <http://dx.doi.org/10.1787/888933477756>

indirect effect).<sup>5</sup> The direct effect of employment protection tends to dampen the negative effect on employment in the early phase of economic downturns when many jobs are at risk of being destroyed (Panel G). During the subsequent recovery the direct effect lowers the decline in unemployment by weakening incentives for hiring workers on permanent contracts (Panel A). Provisions that protect workers on regular contracts against the risk of job loss also affect labour market resilience indirectly by providing incentives for employers to rely more heavily on workers on temporary contracts. The combination of strict employment protection provisions for regular workers with lenient rules on the use of temporary workers tends to give rise to labour market segmentation. A high incidence of temporary work amplifies the unemployment response to aggregate demand shocks (Panels B and H). Results for employment are consistent with those for unemployment, while the wage response to aggregate shocks does not appear to be significantly associated with employment protection for regular workers (Panel E).<sup>6, 7</sup>

- *Centralised or co-ordinated wage bargaining systems may facilitate labour market adjustment in the short term, although their quantitative impact is rather small.*<sup>8</sup> In countries with highly centralised or co-ordinated wage bargaining systems, the initial adjustment on the employment margin is mitigated relative to countries with intermediate levels of centralisation and co-ordination and countries with decentralised or uncoordinated wage bargaining systems (Panels C and I) by promoting more adjustment on the earnings margin (Panel F).<sup>9</sup> Typically, this takes the form of reductions in working time with corresponding reductions in earnings and labour costs rather than reductions in hourly wages, which are likely to be more demoralising since they represent a devaluation of work. Having centralised or co-ordinated wage bargaining systems can help to make such adjustments more acceptable to workers by ensuring that they are broad-based and hence are more equally shared.<sup>10</sup> In some countries, working-time reductions are uncompensated so that they result in proportional reductions in earning (e.g. Sweden), while in others they may be partially compensated through the use of short-time work schemes (e.g. Germany, Japan). These schemes are typically more important in countries with relatively strict employment protection provisions and often require the involvement of the social partners (Hijzen and Venn, 2011; Hijzen and Martin, 2013).

At the macro level, more co-ordinated or more centralised collective bargaining systems limit the short-term unemployment impact of economic downturns, while the importance of collective bargaining per se, as measured by the share of workers covered, is not associated with resilience. Box 2.3 summarises the results from a micro-level analysis exploring the effects of both the nature and coverage of bargaining arrangements on the adjustment behaviour of firms in response to the Great Recession. These suggest that high coverage by national/sectoral (centralised) or multi-level bargaining arrangements (firm and higher level) promote adjustment in terms of earnings (wages and working time) rather than employment in response to adverse economic shocks. These results are broadly consistent with the macro-level results as they both point to the potential beneficial effects of centralised or co-ordinated collective bargaining systems for labour market resilience. However, further work is needed to better understand how collective bargaining systems can contribute to make labour markets more resilient in the short term but also how they affect labour market performance in the longer term.<sup>11</sup>



### Box 2.3. Collective bargaining arrangements and firm-level adjustments during the Great Recession

This box analyses how collective bargaining arrangements affected the adjustment behaviour of firms during the Great Recession. To this end, information on the nature and reach of collective bargaining by industry is combined with firm-level data from the ORBIS database. The ORBIS database contains information from firms' balance sheets and income statements, including employment and the wage bill. The information on collective bargaining arrangements within countries is obtained from the European Union Structure of Earnings Survey (SES). The information on collective bargaining allows measuring collective bargaining coverage for four different bargaining regimes: i) collective bargaining takes place exclusively at the national or sector level ("centralised bargaining"); ii) collective firm-level bargaining and higher level bargaining coexist ("multi-level bargaining"); iii) collective bargaining takes place exclusively at the firm level ("firm-level bargaining"); and individual-level bargaining ("no collective bargaining"). The information on collective bargaining refers to the situation at the onset of the crisis and is held constant over time to avoid that the endogenous response of collective bargaining to the crisis biases the results. The analysis covers 15 European countries for the period 2000-12.

The role of collective bargaining arrangements and the adjustment behaviour of firms to the Great Recession is analysed in a differences-in-differences setup. This involves relating differences in the average growth rate of employment and firm-level wages in the pre-crisis (2000-08) and post-crisis (2009-12) period to the nature and coverage rate of collective bargaining. More specifically, the following model is estimated:

$$\Delta \ln Y_{ijct} = \sum_l \left( {}^lCB_{cj}^l \cdot d_t^{post} \right) + \gamma \Delta \ln Y_{ijct-1} + \eta_{cj} + \eta_{jt} + \eta_{ct} + \varepsilon_{ijct}$$

where  $Y_{ijct}$  denotes employment or average wages in firm  $i$ , sector  $j$ , country  $c$  and year  $t$ ;  $d_t^{post}$  is a post-crisis dummy that takes value 1 from 2009 onward and 0 otherwise;  $CB_{cj}^l$  is collective bargaining coverage by type  $l$ ;  $\eta_{cj}$ ,  $\eta_{jt}$  and  $\eta_{ct}$  are country-sector, sector-year and country-year fixed effects to control for time-invariant country-sector characteristics, including the average effect of collective bargaining on firm performance, industry-specific trends and macroeconomic developments.<sup>1</sup> A key difference with the macro-level analysis presented in the main text is that the current specification focuses directly on the role of collective bargaining coverage for each collective bargaining regime rather than on the role of different regimes for a given level of collective bargaining coverage.

The results suggest that firms covered by centralised and multi-level collective bargaining agreements experienced higher firm-level employment growth in the wake of the Great Recession relative to firms where bargaining takes place at the firm level or where no collective bargaining takes place (results are expressed in terms of differences relative to the "no collective bargaining" benchmark, Figure 2.7). At the same time, wages in firms covered by centralised and multi-level agreements declined more than in their uncovered counterparts. A 10-percentage point increase in the coverage rate of centralised or multi-level bargaining is associated with a 0.3-0.4 percentage points increase in the growth rate of employment and a 0.6-percentage point reduction in the growth rate of firm-level wages during the first four years of the Great Recession. Firm-level bargaining is not associated with any differences in the adjustment behaviour of firms to aggregate shocks relative to firms that are not covered by any collective agreement.

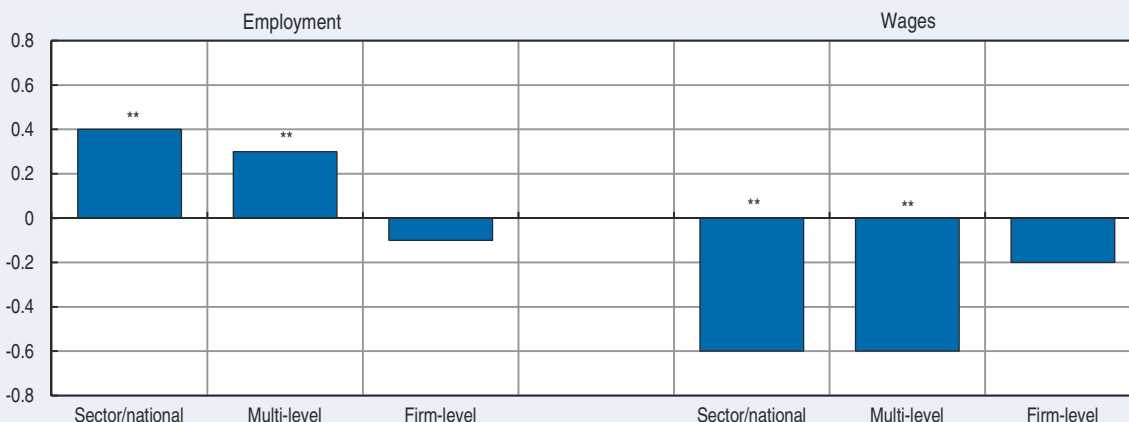
One possible explanation for these results is that in the context of a deep economic downturn it is easier to make temporary wage or working-time concessions when these are broad-based and widely shared. On the one hand, more centralised collective bargaining systems can help to reduce transaction costs involved in the negotiation of temporary wage and working-time reductions and, in the case of public schemes for short-time work, may facilitate their implementation, while on the other hand they may help making wage and working-time concessions more acceptable to workers by ensuring that they are widely shared and avoid free-rider problems.



### Box 2.3. Collective bargaining arrangements and firm-level adjustments during the Great Recession (cont.)

Figure 2.7. **The role of collective bargaining arrangements for firm-level adjustments to the Great Recession**

Percentage point difference between post- and pre-crisis growth due to a 10-percentage point increase in collective bargaining coverage relative to no collective bargaining



Note: \*\*\*, \*\*, \* statistically significant at 1%, 5% and 10% levels respectively, based on standard errors that are clustered by country and industry.

Source: OECD calculations based on ORBIS (2000-12) and the Structure of Earnings Survey (2006).

StatLink  <http://dx.doi.org/10.1787/888933477760>

1. The analysis includes the following countries: Belgium, the Czech Republic, Germany, Estonia, Finland, France, Hungary, Italy, Latvia, Norway, Poland, Portugal, the Slovak Republic, Spain and the United Kingdom.

### **The role of fiscal policy for labour market resilience**

Fiscal policy affects labour market resilience directly by impacting aggregate demand, both through the automatic fiscal stabilisers and through discretionary measures. Automatic fiscal stabilisers reflect adjustments in fiscal revenue and expenditure that are directly related to the business cycle, such as declines in income tax revenues and increases in unemployment benefit expenditure during recessions. Consequently, the effect of automatic fiscal multipliers on aggregate demand and labour market outcomes cannot be estimated econometrically. In order to estimate the effect of fiscal policy on labour market outcomes, the econometric analysis focuses on discretionary fiscal policy changes that are unrelated to the business cycle. In Section 3, the resulting employment multiplier is then applied to actual changes in fiscal balances to approximate the effects of overall fiscal policy, including that of automatic stabilisers, on unemployment.

Discretionary fiscal policy changes that are unrelated to the business cycle are measured using forecast errors obtained by comparing the actual change in discretionary public spending with the corresponding forecast for the change in public spending that was made six months earlier (Box 2.4). Forecasts for public spending are taken from historical vintages of the *OECD Economic Outlook*. The assumption for identifying the causal effect of fiscal policy is thus that the implementation lag of public spending is at least six months. Fiscal shocks are calculated separately for public consumption and investment and are scaled by lagged GDP to allow for the direct interpretation of output and labour market

### Box 2.4. Fiscal policy: The empirical model

Identifying the causal effect of fiscal policy on output and unemployment requires isolating changes in fiscal policy that are exogenous to the business cycle. Existing studies have used either a narrative approach (Romer and Romer, 2010; Ramey, 2011) or an approach based on fiscal forecast errors (Blanchard and Perotti, 2002; Auerbach and Gorodnichenko, 2012). The narrative approach uses detailed background information on the motivation behind legislated policy changes, while the approach based on forecast errors interprets fiscal policy changes that are unanticipated by professional forecasters as exogenous. The interpretation of fiscal policy surprises as exogenous hinges on the assumption that fiscal policy cannot adjust to the business cycle instantaneously because of implementation lags (e.g. a specific measure has to be identified, budgetary approval needs to be obtained and arrangements have to be made for its effective implementation). This assumption requires focusing on government consumption, public investment and active labour market spending, since government transfers and taxes adjust automatically to the business cycle.

The econometric analysis in this chapter adopts the approach based on fiscal forecast errors. The fiscal shock is constructed as the error in forecast public spending changes scaled by lagged GDP. For government consumption and public investment, the forecast error can be constructed from historical vintages of the *OECD Economic Outlook* database as follows:

$$Fis_t = (\Delta G_t - E_{t-1}[\Delta G_t]) / GDP_{t-1},$$

where  $G_t$  denotes the final national account figures for real fiscal expenditure (government consumption or public investment);  $E_{t-1}[\Delta G_t]$  denotes the forecasted change in real fiscal expenditure for period  $t$  from the *OECD Economic Outlook* vintage in period  $t-1$ ; and  $GDP_{t-1}$  denotes the final national account figure for GDP in period  $t-1$ . Scaling the forecast error in public spending by GDP allows interpreting the estimated coefficients on the fiscal shock directly as fiscal multipliers (Hall, 2009).

Forecasts for active labour market spending are not available in the *OECD Economic Outlook Database*. However, it is possible to isolate the discretionary part of active labour market spending by generating a series of out-of-sample forecasts for this spending category for period  $t$  using regression models that use all information in period  $t-1$ , including the forecasts of GDP and unemployment from the *OECD Economic Outlook* vintage for period  $t$ . This is in the spirit of previous work by Darby and Melitz (2008) and Furceri and Zdzienicka (2012).

The response of output and the labour market to exogenous fiscal policy shocks during the business cycle is modelled using the local projection method as follows (see Box 2.2 for details):

$$R_{ct+s} - R_{ct-1} = \overset{L}{g}(z_{ct}) Fis_{ct} + \overset{H}{g}[1 - g(z_{ct})] Fis_{ct} + \sum_{i=1}^2 \delta_i^s X_{ct-i} + \overset{c}{c} + \overset{t}{t} + \varepsilon_{ct+s} \quad \forall s = 0, 1, \dots, S$$

where  $R$  denotes real GDP or labour market outcomes;  $Fis$  is a measure of the fiscal shock;  $g(z)$  is a smooth transition function between states of the business cycle which takes the

form  $g(z_{ct}) = \frac{\exp(-\gamma z_{ct})}{(1 + \exp(\gamma z_{ct}))}$ , with  $\gamma = 1.5$ ;  $z_{ct}$  is the forecast of GDP growth from the *OECD*

*Economic Outlook* vintage released in  $t-1$ ;  $X$  denotes a vector of controls which include lags of the dependent variable, actual GDP growth and actual public spending; and  $\overset{L}{g}$  and  $\overset{H}{g}$  denote the response of the labour market to the discretionary fiscal shock evaluated at the most extreme busts and booms in the sample. As in the case of structural policies and institutions, the analysis is based on an unbalanced panel of semi-annual data for the period 1986-2015 for 22 OECD countries.

effects as fiscal multipliers. The effects of spending on active labour market programmes (ALMPs) are also analysed. While there are no official OECD forecasts for these, forecast errors are constructed *ex post* by comparing actual active spending developments with forecasts for active spending based on the available information in the previous period.

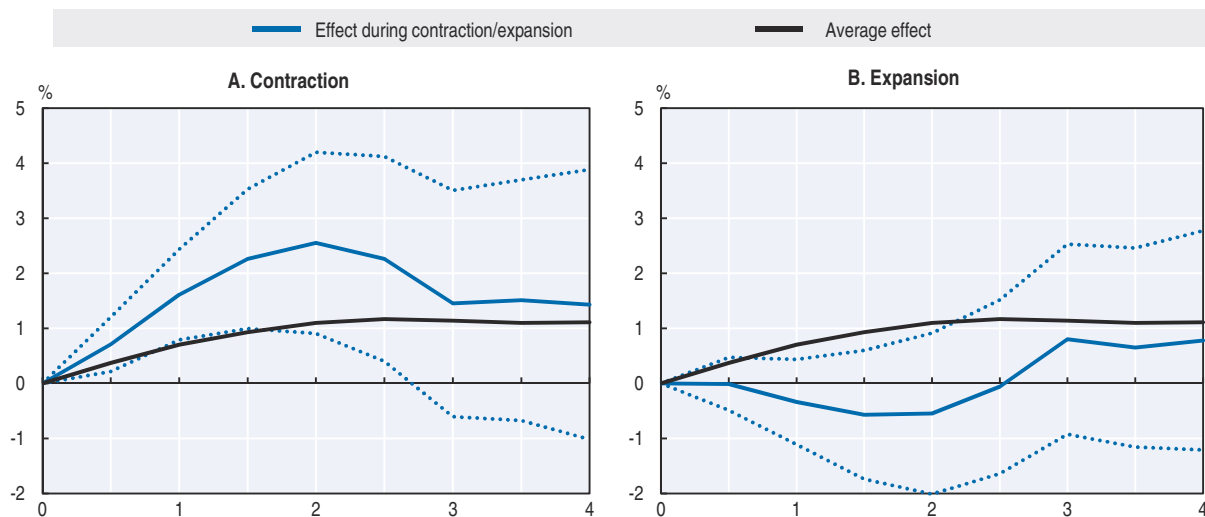
As in the case of structural policies and institutions, the impact of fiscal shocks for labour market resilience is analysed by means of impulse response functions which document the evolution of GDP or unemployment in response to an impulse in public spending during the subsequent four years. Results are reported for the average impact over the business cycle as well as separately for the impact during economic downturns and expansions.

### ***Fiscal stimulus promotes labour market resilience during economic downturns by stabilising aggregate demand***

On average over the business cycle, an increase in discretionary fiscal spending of 1% of GDP increases GDP by about 1% after two years (Figure 2.8).<sup>12</sup> This corresponds to a fiscal multiplier of about 1, which is within the range of typical estimates reported in the literature by Gechert (2015) and Ramey (2016). The estimated short-term impact of fiscal spending on GDP is strong during severe economic downturns (Panel A) but absent during large economic expansions (Panel B), which is consistent with previous evidence (Auerbach and Gorodnichenko, 2012, 2013). While the fiscal multiplier during a severe economic downturn – around 2½ after two years – is in the upper range of previous estimates, a severe economic downturn in the context of the current methodology corresponds to the largest economic downturn across countries over the sample period. During more moderate economic downturns, the fiscal multiplier is closer to the reported average over the business cycle.


The differential impact of fiscal spending shocks over the business cycle reflects the possibility that public spending crowds out private spending to a lesser extent during

**Figure 2.8. Government spending stabilises aggregate demand during economic downturns**  
Impact of a fiscal spending shock of 1% of GDP on GDP over the following four years



Note: The solid blue line indicates the point estimate during economic contractions/expansions, while the dotted lines indicate the corresponding 90% confidence interval. The black line indicates the point estimate on average over the business cycle. Overall public spending is defined for the present purposes by the sum of consumption and investment spending.

Source: OECD calculations based on the OECD Economic Outlook No. 100, <https://stats.oecd.org/index.aspx?DataSetCode=EO>.

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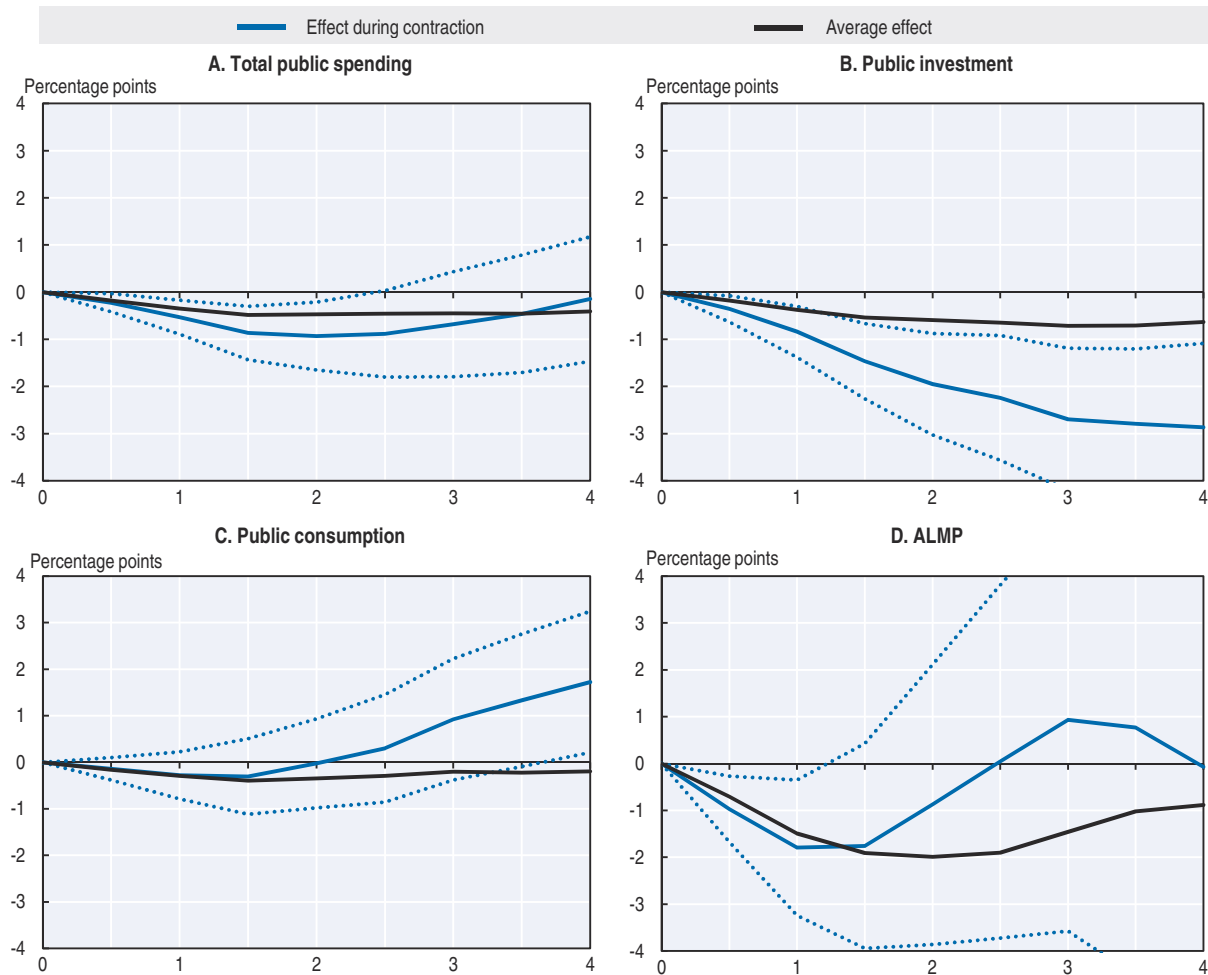
economic downturns than during economic expansions or may even crowd in private spending by raising expectations of future growth. Moreover, monetary policy may not act to offset the fiscal stimulus if the policy interest rate is at the zero lower bound or expected inflation is below the target so that an increase in inflation expectations in response to the fiscal stimulus directly translates into lower real interest rates. All else being equal, the effectiveness of fiscal policy during economic downturns in the short term and its ineffectiveness during expansions suggest a strong case for counter-cyclical discretionary fiscal policy, provided that it can respond quickly enough to have its desired impact on economic activity.

By stabilising aggregate demand, discretionary fiscal spending limits the increase in unemployment in the wake of negative aggregate shocks (Figure 2.9). With regards to the impact of fiscal policy on unemployment the following key findings emerge:

- *On average over the business cycle, a discretionary public spending shock of 1% of GDP reduces the unemployment rate by about half a percentage point (Panel A).* Given a fiscal multiplier of about one, the implicit responsiveness of the unemployment rate to an increase in aggregate demand is about one half. This is consistent with Okun's "law", i.e. the notion that there is a stable empirical relationship between output and unemployment by which a 1% decline in output is associated with a half a percentage point increase in the unemployment rate (Okun, 1962).<sup>13</sup>
- *The timing of public spending shocks matters for its effectiveness in promoting labour market resilience.* An increase in overall fiscal spending reduces the unemployment rate during economic downturns but not during economic expansions (Panel A). The maximum impact during a severe economic downturn is reached after two years at which point a 1% increase in public spending is associated with an almost 1-percentage point reduction in the unemployment rate.
- *The composition of public spending matters (Panels B and C).* The impact of public investment on unemployment tends to be both larger and more persistent than that of public consumption. Moreover, the impact of public investment on unemployment is also more sensitive to the business cycle, with its effect being much larger during severe downturns than in normal times. In principle, this could reflect the crowding in of private investment as firms raise investment in response to higher aggregate demand. However, there is considerable uncertainty about the exact size of the unemployment-reducing effects of public investment as can be seen from the wide confidence bands associated with the estimates.<sup>14</sup>
- *Public spending on active labour market programmes (ALMP) significantly reduces unemployment in the short term (Panel D).* After one year, an increase in active labour market spending of 1% of GDP would reduce the unemployment rate by almost 2 percentage points compared with less than half a percentage point for public spending overall.<sup>15</sup> Given the average share of active labour market spending in GDP in the OECD of around 0.5%, an increase of 1% of GDP is extremely large and may neither be desirable nor feasible (see discussion in Box 2.5). However, the result implies that even modest increases in active labour market spending can make a significant contribution to reducing unemployment in the short term. It also implies that an increase in active labour market spending could partially pay for itself by reducing the overall cost of unemployment benefits.<sup>16</sup>
- *The impact of active labour market spending may increase with the generosity of unemployment benefits (not shown).* This may be because unemployment benefits provide a connection


point between unemployed workers and case workers in the public employment services (Fernandez et al., 2016). Alternatively, this could reflect the role of well-designed activation policies in counteracting the impact of high and long-lasting unemployment benefits on incentives for work (Bassanini and Duval, 2009; OECD, 2006).<sup>17</sup>

Figure 2.9. **Government spending reduces unemployment during economic downturns**  
Impact of a fiscal spending shock of 1% of GDP on the unemployment rate over the following four years



Note: The solid blue line indicates the point estimate during economic contractions, while the dotted lines indicate the corresponding 90% confidence interval. The black line indicates the point estimate on average over the business cycle.

Source: OECD calculations based on the OECD Economic Outlook No. 100, <https://stats.oecd.org/index.aspx?DataSetCode=EO> and OECD Labour Market Programmes Database, <https://stats.oecd.org/Index.aspx?DataSetCode=LMPEXP>.

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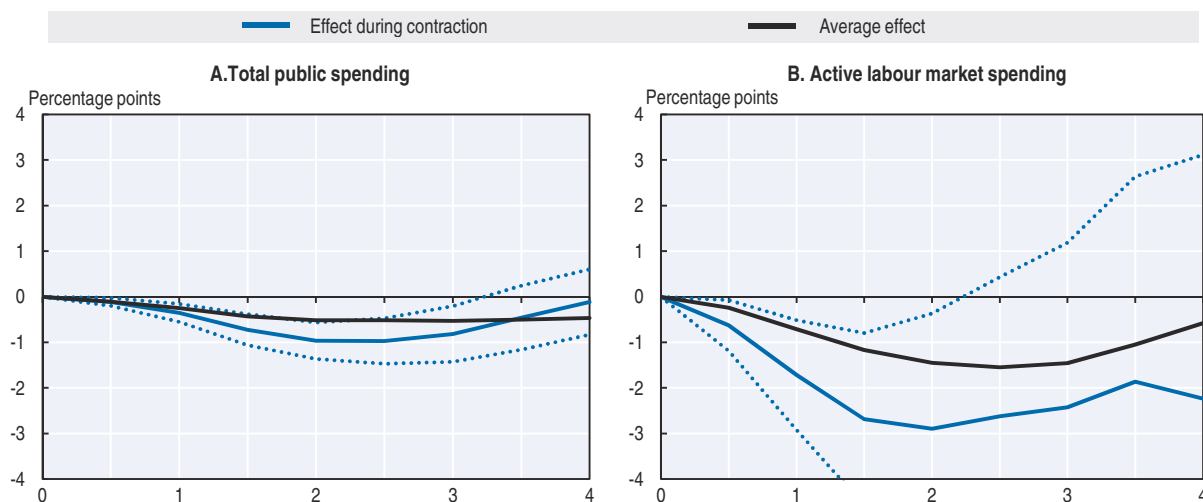
### ***Fiscal expansion during downturns reduces the risk of labour market hysteresis***

By limiting the rise in unemployment during economic downturns, fiscal stimulus not only reduces the social cost of the crisis, but also the risk that the cyclical increase in unemployment becomes structural or translates into a semi-permanent reduction in labour supply. The long-term unemployment rate, i.e. the number of persons who are unemployed for one year or more as a share of the labour force, could signal changes in both the importance of structural barriers to employment and the risk that workers become discouraged searching for a job and drop out of the labour force. Figure 2.10 shows

that total fiscal spending also reduces the long-term unemployment rate. The estimated impact of spending on active labour market programmes (ALMPs) is even larger and more persistent than for unemployment overall. This may reflect the possibility that active labour market programmes disproportionately benefit the long-term unemployed or unemployed persons at risk of long-term unemployment (Andrews and Saia, 2017).<sup>18</sup>


**Figure 2.10. Government spending reduces long-term unemployment during economic downturns**

Impact of a fiscal spending shock of 1% of GDP on the long-term unemployment rate over the following four years



Note: The solid blue line indicates the point estimate during economic contractions, while the dotted lines indicate the corresponding 90% confidence interval. The black line indicates the point estimate on average over the business cycle. The long-term unemployment rate refers to the share of persons who are unemployed for one year or more in the labour force.

Source: OECD calculations based on the OECD Economic Outlook No. 100, <https://stats.oecd.org/index.aspx?DataSetCode=EO>, OECD Labour Market Programmes Database, <https://stats.oecd.org/Index.aspx?DataSetCode=LMPEXP> and OECD Labour Force Statistics Database, [www.oecd.org/employment/onlineoecdemploymentdatabase.htm](http://www.oecd.org/employment/onlineoecdemploymentdatabase.htm).

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### ***The effectiveness of fiscal policy is likely to depend on country-specific factors***

While the above analysis provides an indication of the average effectiveness of fiscal policies across countries, there is likely to be substantial cross-country heterogeneity due to the following factors:

- **The degree of trade openness.** Fiscal multipliers are typically found to be smaller in highly open economies since demand stimulus is more likely to leak abroad through higher imports than in more closed economies (Auerbach and Gorodnichenko, 2013; Barrell et al., 2012).
- **The level of public debt.** Fiscal policy is typically found to be less effective in countries with high public debt as households and businesses anticipate future fiscal tightening by raising saving rates (Favero et al., 2011; Ilzetzi et al., 2013).
- **The exchange rate regime.** Countries with fixed exchange rates tend to have larger fiscal multipliers as changes in aggregate demand relative to trading partners cannot be offset by changes in nominal exchange rates (Ilzetzi et al., 2013).
- **The monetary policy response.** Fiscal multipliers are larger when monetary policy does not respond to the demand stimulus by raising interest rates, which is typically the case at the zero interest lower bound (Alesina et al., 2016; Woodford, 2011).



- *Labour market policies and institutions.* Fiscal policy may be more effective in supporting employment in countries in which labour market policies and institutions generate wage rigidities since the demand stimulus may be passed on to wages to a lesser extent than in countries with more flexible wages (De Ridder and Pfajfar, 2016).

### 3. The effects of labour market and fiscal policies for labour market resilience following the Great Recession

This section builds on estimates in the previous section to simulate the overall effect of structural and fiscal policies on labour market resilience in the aftermath of the Great Recession. In the labour market policy simulations, observed developments in GDP are applied to the coefficients estimated in the previous section under different assumptions on labour market policy settings at the onset of the Great Recession (actual or OECD average). In the fiscal policy simulations, observed developments in GDP are applied to the estimated fiscal multiplier of public expenditure under different assumptions on the evolution of the fiscal balance since the start of the Great Recession (constant versus actual). The fiscal policy simulations account for the fact that the fiscal multiplier is larger during economic downturns than economic expansions. Since the fiscal multiplier has been estimated using exogenous forecast errors, it is not affected by the endogeneity of the fiscal balance to the business cycle. However, since changes in the fiscal balance reflect both automatic fiscal stabilisers and discretionary measures, the overall effect of fiscal policy on unemployment will tend to be larger in countries with large economic downturns.

The simulations implicitly assume that the effects of labour market and fiscal policies are identical in all countries. This means that the analysis abstracts from country characteristics that may influence the *country-specific* impact of labour market and fiscal policies on resilience. Since the scenarios considered in the labour market and fiscal policy simulations are not comparable, they cannot be used to assess their relative importance for labour market resilience.

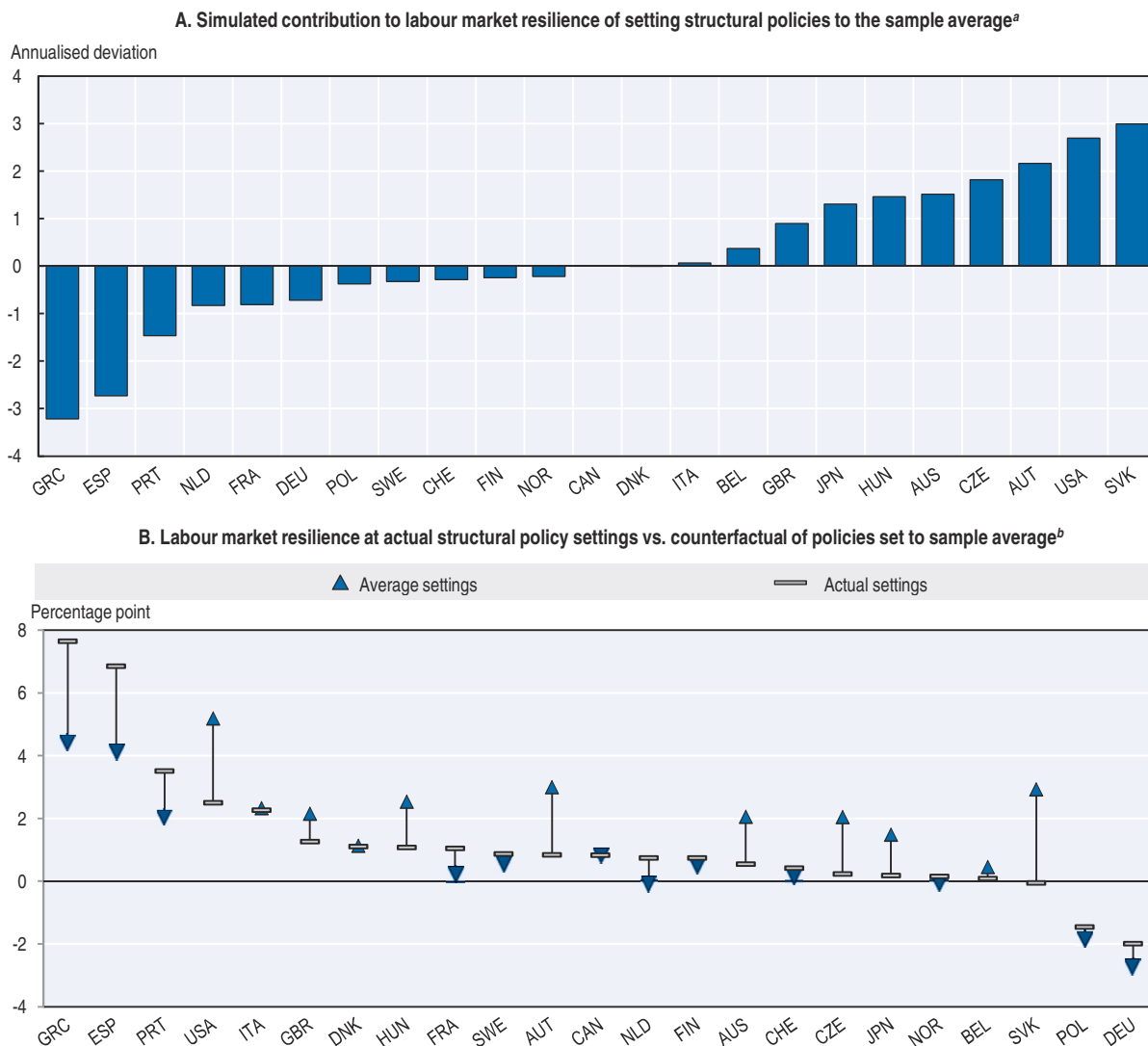
#### **Strict employment protection provisions for regular workers tended to reduce labour market resilience**

Figure 2.11 provides an indication of the role of labour market policies and institutions for labour market resilience by documenting the change in the annualised deviation of unemployment from the pre-crisis rate during the period 2008-15 that would have occurred if labour market policy settings in each country had been equal to their average level in the OECD instead of the actual values.<sup>19</sup> The simulations account only for labour market policies and institutions that were found to play a statistically significant role for labour market resilience in Section 2. These are the stringency of employment protection provisions for regular workers and the nature of collective bargaining systems.

The simulation results suggest that adopting the average structural policy settings in the OECD before the crisis would have significantly reduced the unemployment impact of the Great Recession in Greece, Spain and Portugal, but would have significantly increased the unemployment cost of the crisis in Austria, Australia, the Czech Republic, the Slovak Republic and the United States (Panel A). The bulk of these changes reflect changes in the employment protection provisions of regular workers, both through their direct effect on hiring and firing and their indirect effect on the incidence of temporary work. The degree of co-ordination and centralisation of collective bargaining systems typically played a minor role.

Figure 2.11. **Strict employment protection provisions for regular workers tended to reduce resilience**

Annualised deviation of unemployment from the pre-crisis NAIRU, 2008-15



- a) Bars denote the change to the annualised deviation of unemployment that arises when replacing actual structural policy settings in 2007 by the sample average. The simulations take account of the direct effect of employment protection for regular workers on the hiring and firing of employees and its indirect effect on the incidence of temporary work as well as the role of more co-ordinated and more centralised collective bargaining systems based on estimates reported in Figure 2.6.
- b) “Actual settings” refers to the annualised deviation of unemployment from the pre-crisis NAIRU as reported in Figure 2.2; “Average settings” refers to the counterfactual outcome that would be obtained in the event that structural settings had been equal to the sample average instead. In practical terms, this involves adding the simulated contribution of this policy change as documented in Panel A of this figure to the annualised deviation of unemployment obtained with actual settings.

Source: OECD calculations based on the OECD Economic Outlook No. 100, <https://stats.oecd.org/index.aspx?DataSetCode=EO>.

StatLink <http://dx.doi.org/10.1787/888933477807>

The role of employment protection helps to explain some of the variation in labour market resilience across countries. Actual settings tended to reduce labour market resilience in countries where the unemployment impact of the crisis was very large (e.g. Greece, Spain), while they increased it in countries where the unemployment impact was small (e.g. Australia, the Czech Republic and the Slovak Republic) (Panel B).



### ***In most countries, fiscal policy contributed to labour market resilience***

The fiscal policy simulations take account of both discretionary fiscal policy measures and automatic stabilisers. This is done by using the estimated fiscal multipliers for discretionary spending shocks in combination with actual developments in the headline fiscal balance and the cyclically-adjusted fiscal balance over the period 2008-15. This implicitly assumes that the estimated fiscal multiplier for discretionary spending is similar for other revenue and spending components, including discretionary changes in the tax system and automatic stabilisers. Existing studies typically show that the impact of these other components on aggregate demand tends to be somewhat weaker than that of discretionary fiscal spending (Alesina et al., 2016; Ramey, 2016). Consequently, the simulations in this section may somewhat overstate the impact on unemployment of changes in the headline and cyclically-adjusted fiscal balance. Moreover, the cross-country variation in the role of fiscal policy should only be considered as indicative since the simulations do not account for cross-country differences in the effectiveness of fiscal policy.

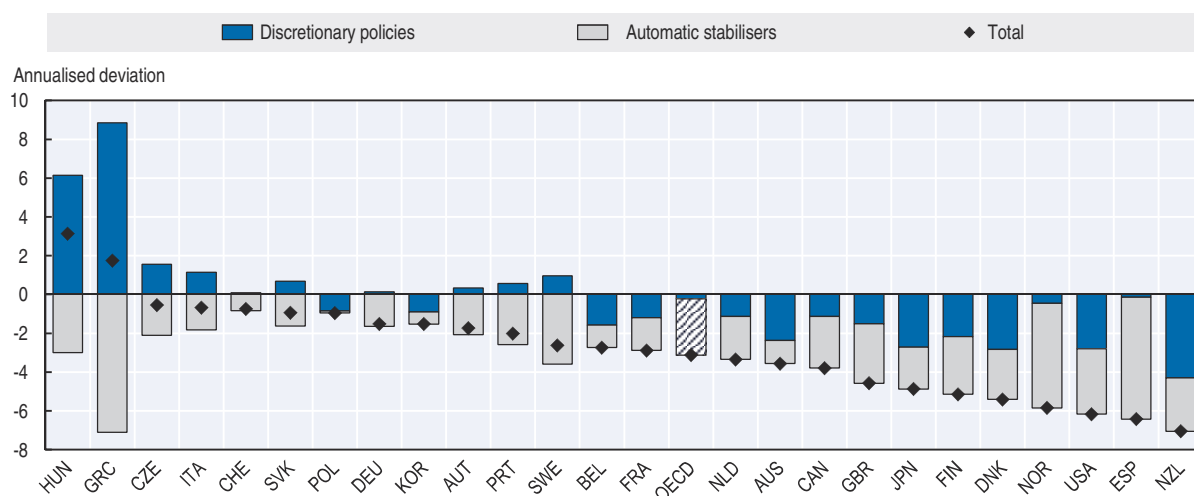
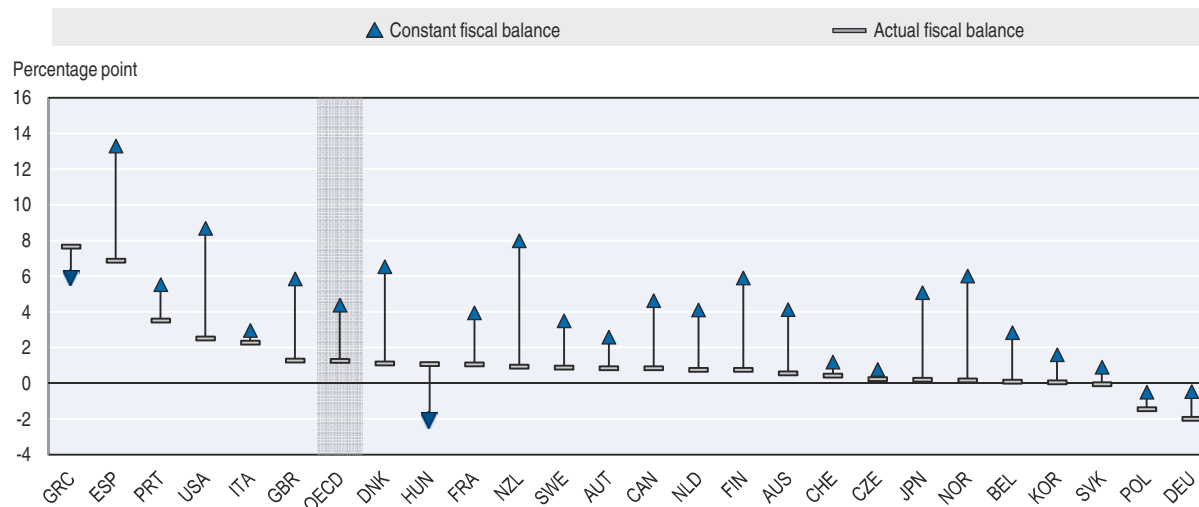
In most countries, the headline fiscal balance was allowed to deteriorate during the Great Recession, thereby supporting aggregate demand and contributing to labour market resilience (Figure 2.12, Panel A). This was largely driven by the automatic stabilisers while discretionary fiscal policy – measured in terms of the cyclically adjusted fiscal balance – either complemented or partially offset them. A number of countries, such as New Zealand and the United States, took discretionary measures to stimulate aggregate demand either by raising public spending or reducing government revenue during the downturn. In these countries, the headline fiscal balance deteriorated by more than implied by the free operation of the automatic stabilisers, which contributed to labour market resilience. In countries with modestly contractionary discretionary fiscal policy during the crisis, such as the Slovak Republic or Portugal, automatic stabilisers more than offset the upward effect of discretionary measures on the unemployment rate. While many euro area countries tightened discretionary fiscal policy over 2011-12, in most of these countries the tightening only partly offset the downward effect on the unemployment rate of fiscal expansions during the downturn. In part, this reflects the fact that the estimated fiscal multiplier during downturns is larger than during recoveries. Only Greece, Hungary and Italy did not allow the automatic stabilisers to operate at all by fully offsetting automatic declines in the headline fiscal balance via discretionary fiscal tightening.

Fiscal policy significantly contributed to labour market resilience on average but was not systematically related to its cross-country pattern (Figure 2.12, Panel B). The simulation results suggest that fiscal policy reduced the annualised deviation of unemployment from the pre-crisis NAIRU during the period 2008-15 from over 4 to about 1 percentage point for the OECD as a whole. In a number of countries that were particularly hard hit by the crisis, including Greece, Italy and Portugal, automatic stabilisers were not allowed to operate fully. However, in a number of other countries that were hard hit by the crisis automatic stabilisers were allowed to operate, which contributed to labour market resilience. Overall, similar levels of labour market resilience despite large differences in fiscal policy suggest that other factors played a larger role than fiscal policy in explaining cross-country patterns in labour market resilience.

While structural and fiscal policies explain some of the cross-country variation in labour market resilience, a considerable part remains unexplained. The most important reason for this is probably that no account is taken of the nature of the shock, i.e. whether

Figure 2.12. **Automatic fiscal stabilisers contributed to labour market resilience**

Annualised deviation of unemployment from the pre-crisis NAIRU, 2008-15

A. Simulated contribution of fiscal policy to the annualised deviation of unemployment, 2008-15<sup>a</sup>B. Labour market resilience at actual and constant headline fiscal balances<sup>b</sup>

a) The diamond denotes the estimated effect of changes in the headline fiscal balance on the annualised deviation of unemployment from the pre-crisis NAIRU. The blue bar denotes the estimated effect of discretionary fiscal policy changes measured in terms of the cyclically adjusted fiscal balance on the annualised deviation of unemployment from the pre-crisis NAIRU. The grey bar denotes the estimated effect of automatic stabilisers on the annualised deviation of unemployment from the pre-crisis NAIRU in the absence of discretionary fiscal policy changes. This is obtained by subtracting the simulated contribution of fiscal policy effect from the total fiscal policy effect. The simulations are based on the estimates reported in Panel A of Figure 2.9.

b) "Actual fiscal balance" refers to the annualised deviation of unemployment from the pre-crisis NAIRU as reported in Figure 2.2; "Constant fiscal balance" refers to the counterfactual outcome that would be obtained in the absence of any changes in the headline fiscal balance since the start of the Great Recession. In practical terms, this involves subtracting the simulated contribution of fiscal policy as documented in Panel A of this figure to the annualised deviation of unemployment obtained with actual fiscal balances.

Source: OECD calculations based on the OECD Economic Outlook No. 100, <https://stats.oecd.org/index.aspx?DataSetCode=EO>.

StatLink <http://dx.doi.org/10.1787/888933477814>

it reflected largely domestic problems related to finance, housing and construction (e.g. Spain and the United States), was compounded with a sovereign debt crisis (e.g. Greece, Portugal and Italy) or originated largely from abroad, with a sharp but short-lived impact on export demand (e.g. Germany and Japan). A second issue is that the simulations do not take account of the composition of public revenue and expenditure, even though this was

shown to be important in Section 3. Box 2.5 provides a detailed discussion of the optimal modulation of public spending on active and passive labour market programmes, unemployment benefits and short-time work schemes over the business cycle. Short-time work schemes have been shown to be particularly important in countries that have weathered the Great Recession rather well such as Germany and Japan (Hijzen and Martin, 2013).<sup>20</sup> Third, the analysis does not take account of all structural policy developments such as the progressive implementation of activation strategies in many OECD countries. Not only is this likely to have contributed to achieving record-low unemployment rates at the onset of the crisis, it also likely to have helped job losers get back into work more quickly during the crisis than otherwise would have been the case (e.g. Germany, Sweden and the United Kingdom).

#### Box 2.5. **The modulation of labour market policies over the business cycle**

This box documents the extent to which spending on labour market and social policies responds to economic downturns and provides a number of considerations in relation to their optimal modulation over the cycle.

Spending on unemployment benefits (UBs) per unemployed person has remained largely stable during the Great Recession, with an elasticity of benefit spending to unemployment close to one. This highlights the importance of UBs as an automatic stabiliser. For the OECD as a whole, the real value of income support per unemployed person even increased slightly in the period following the Great Recession. The more than proportional increase in UB spending is likely to reflect the impact of the crisis on the composition of the unemployed and the importance of specific measures taken by governments in response to the crisis (e.g. measures to promote the use of short-time work schemes or establish new ones, extensions to the maximum duration of benefit payments; the extension of UBs to workers with non-standard contracts). The case for temporarily extending benefit generosity during recessions is strongest in countries where benefit generosity is low. However, it is important that the negative effects of increased benefit generosity on work incentives are contained. This can be done by scaling up active labour market programmes; making use of declining benefit schedules and winding back temporary measures to increase the generosity or coverage of UBs once the labour market recovers (OECD, 2013, 2015).

By contrast, spending on active labour market programmes (ALMPs) has responded only weakly to the rise in unemployment following the Great Recession (Figure 2.13). A 1% increase in the number of unemployed was associated with a 0.4% increase in active labour market spending. While this was almost twice as high as during previous crisis episodes, the less than proportional increase in spending still resulted in a sharp decline in resources per jobseeker. According to OECD (2012), the value of resources per unemployed person declined by 20% between 2007 and 2010 on average across the OECD. A more significant increase is likely to be necessary to preserve the mutual-obligations ethos of activation regimes. This is particularly important in countries with relatively generous unemployment benefits and a strong emphasis on activation policies to maintain work incentives as well as in countries where the generosity of unemployment benefits is low, but has been temporarily extended in response to the increase in needs following the crisis. Linking budgets for spending on labour market programmes to labour market conditions raises a number of practical policy questions about implementation, including whether changes should be adopted on an ad hoc or automatic basis. Automatic rules may provide an effective instrument to make ALMP spending more responsive to the business cycle by allowing for a timelier, more predictable, and more transparent response. However, automatic rules also have their drawbacks. They involve an element of rigidity in the way policy responds to changing circumstances since they are inherently informed by past events and could thus prove to be sub-optimal in new circumstances. An alternative could be semi-automatic mechanisms that trigger a policy adjustment under pre-specified conditions, but that allow for policy discretion in the design of the adjustment. A number of OECD countries already have automatic or quasi-automatic rules to make spending

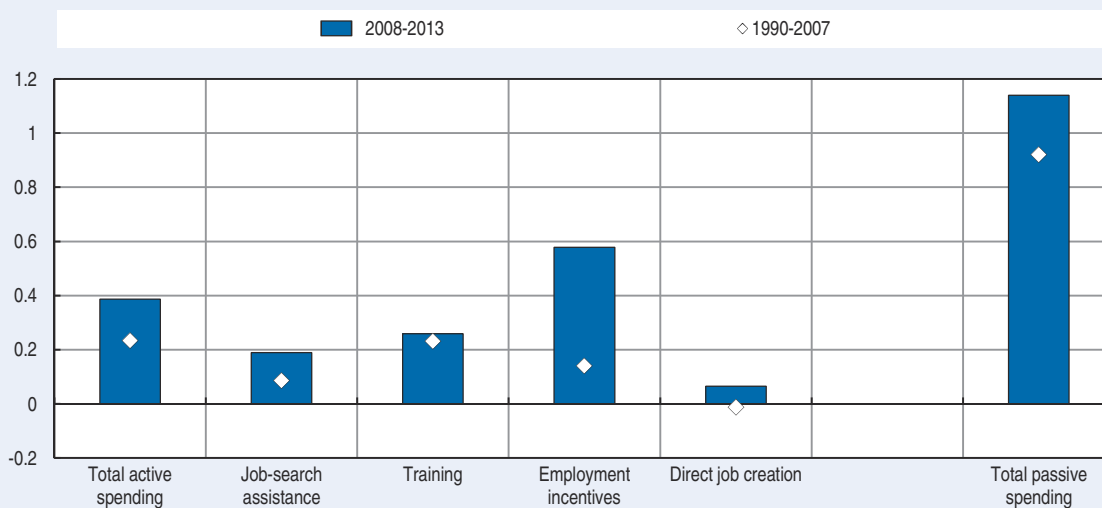
**Box 2.5. The modulation of labour market policies over the business cycle (cont.)**

on labour market spending more responsive to labour market conditions. State-contingent systems for active labour market spending exist in Australia, Denmark and Switzerland, whereas state-contingent UB systems exist in Canada, Chile, Israel and the United States.

A particular difficulty in the context of ALMPs is that it may not be straightforward to translate funding increases into higher capacity in the short run.<sup>1</sup> Countries with more generous benefits, and that rely more heavily on the mutual-obligations approach, probably have the strongest incentives in maintaining resources per unemployed approximately constant during periods of high cyclical unemployment. Moreover, these are more likely to be countries that have the necessary infrastructure in place to translate funding increases into increased capacity quickly, while maintaining service quality. The difficulty of scaling up the capacity for labour market programmes may explain why spending on hiring subsidies (“employment incentives”), which are easy to expand, increased more strongly than spending on other categories of active labour market spending.

**Figure 2.13. The responsiveness of spending on labour market programmes to changes in unemployment**

Elasticity of spending with respect to the number of unemployed, OECD average



Source: OECD calculations based on the OECD Labour Market Programmes Database, <https://stats.oecd.org/Index.aspx?DataSetCode=LMPEXP>.  
StatLink <http://dx.doi.org/10.1787/888933477821>

1. This may explain why the presence of automatic rules for active labour market spending did little to stem the decline in resources available per unemployed jobseeker during the crisis.

Source: This box has been prepared with inputs from Rodrigo Fernandez.

## Conclusions

The analysis presented in this chapter suggests that fiscal policy played an important role in stabilising the labour market and preventing hysteresis following the Great Recession of 2008-09. Fiscal policy appears to be particularly effective during recessions, which implies that allowing automatic fiscal stabilisers to operate and complementing them with additional discretionary measures during deep economic downturns can go some way toward promoting labour market resilience. However, the use of fiscal policy as a stabilisation tool requires that sufficient fiscal space be available during recessions. Lack of fiscal space explains why a number of countries hit particularly hard by the crisis could

not allow automatic stabilisers to operate fully. This highlights the importance of keeping public debt at prudent levels during expansions and building sufficient flexibility into institutional fiscal rules.

Structural policies and institutions also have a role to play in promoting labour market resilience, both by directly sustaining employment during downturns and by supporting aggregate demand. A well-designed social protection system for workers (i.e. one which combines effective protection with effective activation policies) and activation policies that respond strongly to cyclical increases in unemployment can be particularly effective. Not only do they directly reduce the social cost of economic downturns by providing income support to people who have lost their job and facilitating their return to work, but they also strengthen automatic fiscal stabilisers by sustaining the consumption levels of unemployed people. Well-designed short-term work schemes and collective bargaining systems can promote labour market resilience by facilitating adjustments in wages and working time. In particular, better co-ordination of collective bargaining outcomes across sectors and firms can help making collective bargaining systems more responsive to economic conditions. Avoiding large gaps in the degree of employment protection between those on permanent and temporary contracts reduces dualism in the labour market by limiting the overuse of temporary contracts which in turns contributes to labour market resilience.

While structural and fiscal policies play an important role for labour market resilience, they cannot fully offset the effects of large aggregate shocks on employment. For instance, the countries with the largest losses in terms of unemployment in the wake of the Great Recession of 2008-09 were typically hit by severe housing, banking and sovereign debt crises that resulted in large and persistent declines in aggregate demand and employment, whereas the countries with the smallest losses typically experienced transitory shocks in external demand. This demonstrates that structural policies that are not directly related to the labour market, especially regulations that reduce the risk of financial crises, can have large effects on labour market resilience.

Structural and fiscal policies that promote labour market resilience also have beneficial effects for long-run growth, employment performance as well as inclusiveness. Stabilising labour market outcomes during large economic downturns not only reduces the social cost of such downturns, but also reduces the risk that transitory increases in unemployment translate into semi-permanent increases in unemployment and decreases in labour force participation. Moreover, the benefits of higher labour market resilience are likely to accrue disproportionately to the most vulnerable workers, including young people, the long-term unemployed and workers on temporary contracts.

## Notes

1. The timing and duration of the Great Recession differed across OECD countries and a number of countries did not experience a technical recession defined as at least two consecutive quarters of output contraction (e.g. Korea, Poland and Australia).
2. The figure is based on annualised rather than cumulative deviations to facilitate their interpretation. Since the reference period is 2008-15 for all countries, this does not affect the relative cost of the crisis across countries.
3. Note that since hours and wages in the above decomposition cover dependent employees only, the capital share is implicitly defined as  $1 -$  the share of wages of dependent employees in GDP so that it includes mixed income. An increase in the capital share may therefore partly reflect an increase in the number of self-employed rather than an increase in profits.

4. These findings are broadly consistent with those reported in OECD (2012).
5. To this end, it exploits the well-known stylised fact in the literature that the average incidence of temporary work is closely related to the stringency of employment protection for regular workers across countries, but that they are not systematically related over time (Boeri and Van Ours, 2013). Consequently, a country's average strictness of employment protection (the "between component") is used as an instrument for the average incidence of temporary work to give an indication of the indirect impact of employment protection on labour market resilience through its impact on labour market segmentation. The time-varying component of employment protection (the "within component") is used to capture the direct effect of employment protection on labour market resilience through its impact on hiring and firing.
6. The results are robust to the exclusion of countries with dual labour markets that were hit particularly hard by the crisis (e.g. Spain).
7. The fact that in countries with strict employment protection of regular workers the employment and unemployment responses do not converge to those in countries with average strictness over a horizon of four years suggests that employment protection may give rise to labour market hysteresis in the wake of aggregate shocks.
8. Centralised or co-ordinated wage bargaining systems may be considered functional equivalents since co-ordination across bargaining units is likely to yield broad-based bargaining outcomes that allow taking account of the macroeconomic situation. The combination of centralisation bargaining and co-ordination is sometimes referred to as the degree of corporatism. See Chapter 4 of this publication for a more in-depth discussion of centralisation and co-ordination and Blanchard and Wolfers (2000), OECD (2006) and Traxler and Brandl (2012) for analyses of their role for macroeconomic flexibility.
9. Decentralised and uncoordinated wage bargaining systems do not appear more or less resilient in terms of unemployment than countries with intermediate levels of centralisation or co-ordination.
10. See Smith (2015) for a discussion of the welfare effects of individual versus broad-based reductions in earnings.
11. Including by analysing how the degree of centralisation affects the efficiency of labour reallocation in the medium term.
12. For the present purposes, an overall public spending shock is defined as the sum of the shocks in public consumption and investment and hence excludes social transfers. Shocks in activation spending are not included in the overall measure of fiscal spending since these are obtained from a separate dataset and the construction of the forecast errors is different. However, this should not make much of a difference in practice since the economic importance of active spending compared with public consumption and investment is very small.
13. There is an ongoing debate whether Okun's law has remained stable during the global financial crisis. Despite claims that the relationship between unemployment and output had changed in the United States, recent estimates suggest that GDP and unemployment followed a fairly typical pattern (Daly et al., 2014).
14. These findings are qualitatively consistent with results in Abiad et al. (2016).
15. While the short-term impact of ALMP spending on the unemployment rate is statistically different from zero it is not statistically different from that of overall spending as there is considerable uncertainty about the exact size of the estimated effect of ALMP spending.
16. Total spending on unemployment benefits as a share of GDP amounted to 0.9% for the OECD as a whole in 2009. Taking account of the actual OECD unemployment rate at the time (8%), it can be shown that a 1% increase in active labour market spending of GDP leads to a 0.2% reduction in the share of unemployment benefit spending in GDP. This implies a marginal cost of active labour market spending of 0.8. The marginal cost of active labour market spending is considerably smaller in countries with more comprehensive and generous unemployment benefits system such as Austria and the Netherlands where it is about 0.5.
17. This typically takes the form of a "mutual-obligations approach" where jobseekers receive unemployment benefits in exchange of active job search and participation in active labour market programmes (e.g. counselling, training, work-experience programmes). This approach can be enforced through the threat of benefit sanctions, whose effect on incentives is stronger the more generous is the benefit system.

18. Similar results were found for the rate of labour force participation. This suggests that the positive impact of active labour market spending does not reflect the role of stricter activation systems for pushing unemployed workers out of the labour force and into inactivity.
19. This choice of counterfactual necessarily implies that structural policies and institutions increased labour market resilience in about half of the countries and reduced it in the other half.
20. Moreover, as in the case of fiscal policy more generally, the role of short-time work schemes is considerably more positive when their use is limited to economic downturns. In order to limit the use of short-time work policies to economic downturns, its use has to be very responsive to changes in economic conditions. Factors that may help to ensure that take-up does not persist for too long in a recovery are to require firms to participate in the cost of short-time work, to limit the maximum duration of short-time work schemes and to require workers to search for a job whilst on short-time work (Hijzen and Venn, 2011).

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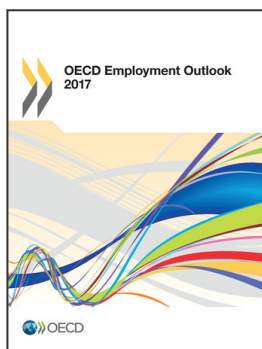
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