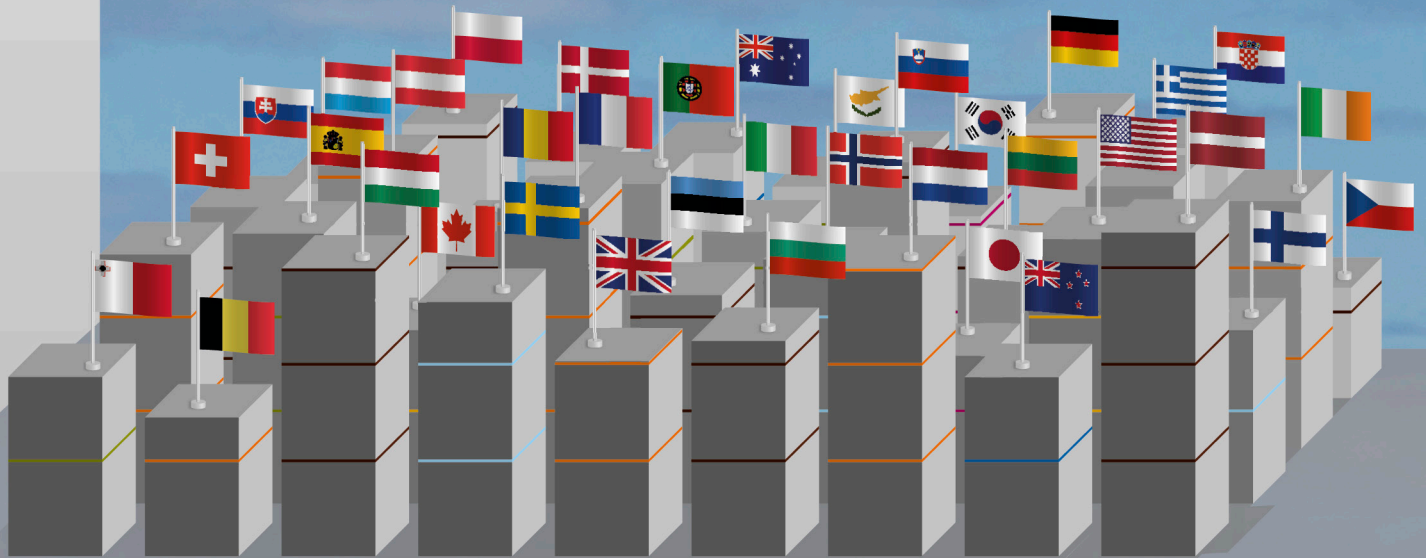




The Netherlands Institute  
for Social Research

# Public sector achievement in 36 countries



A comparative assessment of inputs,  
outputs and outcomes

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outputs and outcomes

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- a to carry out research designed to produce a coherent picture of the state of social and cultural welfare in the Netherlands and likely developments in this area;
- b to contribute to the appropriate selection of policy objectives and to provide an assessment of the advantages and disadvantages of the various means of achieving those ends;
- c to seek information on the way in which interdepartmental policy on social and cultural welfare is implemented with a view to assessing its implementation.

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# Foreword

Many Western societies are currently faced with the pressure of population ageing and increased take-up of expensive public sector provisions such as pensions, health care and long-term care. As a result, governments are increasingly having to prioritise or find ways to make their public sector more efficient. At the same time, countries differ greatly in the way they have organised their public sectors. Against this background, it is useful to compare the performance of countries across the various parts of the public sector and to assess how this performance has changed in recent years. That is what this report aims to do.

More specifically, the report examines inputs, outputs and outcomes of the public sector in 36 countries: all current 28 EU Member States plus Australia, Canada, Japan, the Republic of Korea, New Zealand, Norway, Switzerland and the United States. It covers the period from 1995 to 2012 inclusive and includes separate chapters on education, health, social safety, housing, social security and public administration, and a combined chapter in which three additional sectors are studied more generally.

This report is the third edition in a series, following earlier reports in 2004 and 2012. It has been compiled in collaboration with the Dutch Ministry of the Interior and Kingdom Relations and we would like to express our thanks to Herma Kuperus and Frans van Dongen for their support. We are also grateful to the other members of the Supervisory Committee – Dr Arjan Lejour, Prof. Jaap Dronkers, Prof. Jos Blank and Prof. Steven Van de Walle – for their constructive comments on the draft versions of the report. In addition, thanks are due to experts from various government ministries (in particular Marcel Einerhand, Michael van den Berg and Peter Achterberg) for their useful comments, and to Dr Marietta Haffner (TU Delft) who co-authored the chapter on housing.

This report could not have been written without the availability of international comparative data. Wide use has been made of databases compiled by international organisations, especially Eurostat, the EU Statistics on Income and Living Conditions (EU-SILC), the Organisation for Economic Co-operation and Development (OECD), the United Nations Office on Drugs and Crime (UNODC) and the World Bank.

The results of this report are intended to serve as input for the Dutch Presidency of the European Union in the first half of 2016. However, I also hope the report will be of interest to policymakers and to the public more generally.

Professor Kim Putters  
Director, The Netherlands Institute for Social Research | SCP





# Summary

Benedikt Goderis



## A brief history of this series

During the Dutch Presidency of the European Union in 2004, the Netherlands Institute for Social Research | SCP conducted a major international comparative study of the performance of the public sector in various countries (Kuhry 2004). A second edition in this series was published in 2012 (Jonker 2012). The present 2015 report constitutes the third edition and is intended for use as input for the Dutch Presidency of the European Union in the first half of 2016. The report partly updates the previous edition, but also broadens and deepens the approach by expanding the number of countries studied, extending the number of sectors that are studied in detail, and devoting more attention to explaining differences across countries and over time.

## Motivation for this study

A comparison of modern welfare states reveals similarities but also vast differences in terms of objectives, coverage, depth and institutional design (Esping-Andersen 1990, Vrooman 2009). These differences make it particularly interesting to compare public sector outcomes between countries and over time. How much have countries achieved relative to their peers? Has their performance improved or worsened in recent years? Addressing these questions is important, and even more so given the concerns about the sustainability of welfare states in the light of ageing populations and a larger take-up of welfare state programmes such as pensions, health and long-term care. The recent global financial crisis has, if anything, further added to these concerns.

## Framework and scope

Inputs, outputs and outcomes of the public sector form the core of this study. The public sector provides *inputs*, such as spending on schools, that are used to produce *outputs*, such as the enrolment of children in schools. More output should then result in better *outcomes*, such as improved cognitive skills of children, as reflected in better test scores.

This study examines inputs, outputs and outcomes of the public sector in 36 countries: all current 28 EU Member States plus Australia, Canada, Japan, Korea, New Zealand, Norway, Switzerland and the United States.<sup>1</sup>

<sup>1</sup> Throughout this study, the country name 'Korea' refers to the Republic of Korea (as opposed to the Democratic People's Republic of Korea).



These 36 countries are classified into seven geographical regions: Western Europe, Northern Europe, Southern Europe, Central and Eastern Europe, Oceania, Northern America and Eastern Asia.<sup>2</sup> We study the period from 1995 to 2012 inclusive, and look at nine sectors within the public sector. Of these nine sectors, six are studied in detail in separate chapters: education (Chapter 2), health (Chapter 3), social safety (Chapter 4), housing (Chapter 5), social security (Chapter 6) and public administration (Chapter 7). The other three are studied more generally in one combined chapter; they are economic affairs and infrastructure, environmental protection, and sport, culture and participation (Chapter 8).

### The challenging task of measuring public sector performance

Measuring public sector performance poses a number of methodological challenges. One challenge is that public sector outcomes indicate differences in performance but not necessarily differences in the performance of the public sector. Test scores of children in education may for example depend not only on the quality of education but also on social conditions (Dronkers 2011). As a consequence, outcome differences should be interpreted as differences in the performance of countries in terms of the goals that their public policies aim to achieve. It is important to keep this in mind when interpreting differences in outcome indicators reported in this and other studies of the public sector.

### Central research questions

We pose the following five central research questions:

- 1 How do countries perform in terms of the outcome indicators, that is, in terms of the goals that their public policies aim to achieve? Which countries/regions perform best? Which countries/regions do worst? Which countries have shown the biggest improvements since 1995?
- 2 How much do countries invest in terms of inputs and how much do they produce in terms of outputs?
- 3 How do differences in outcomes between countries and over time relate to differences in inputs and outputs?
- 4 Do citizens of countries that perform better in terms of outcomes also perceive the quality of the corresponding sector as better?
- 5 Which factors explain differences in the outcome indicators between countries and over time?

The last question is addressed only in the chapters on education and health, which constitute the core of this study. Hence, for these two sectors we aim to identify the causal effects of a range of explanatory variables on the outcome variables.

<sup>2</sup> Western Europe: AT, BE, FR, DE, LU, NL, CH, IE, GB; Northern Europe: DK, FI, NO, SE; Southern Europe: GR, IT, MT, PT, ES, CY; Central and Eastern Europe: BG, CZ, HU, PL, RO, EE, LV, LT, SK, SI, HR; Oceania: AU, NZ; Northern America: CA, US; Eastern Asia: JP, KR.

## The structure of this study

This study consists of five parts. Part I contains the introduction to the study. Part II consists of Chapters 2 (education) and 3 (health) and constitutes the core of this study. Part III comprises Chapters 4 (social safety), 5 (housing), 6 (social security) and 7 (public administration) and contains more basic analyses in which we address research questions 1 to 4 but not 5. Part IV consists of Chapter 8 which contains a preliminary description of the three remaining sectors. Finally, Part V consists of Chapter 9, which provides a synthesis of results presented in earlier chapters by graphically illustrating the performance of regions and countries in terms of the outcome indicators. However, it also goes further than earlier chapters by looking at sectors simultaneously and identifying cross-sectoral patterns in the performance of regions and countries.

## 1 Education

### Why it matters

The various tasks of education (Chapter 2) can be captured within one general goal: to develop the individual skills needed for a person's economic and social participation in society. In our analysis, we focus on the following four core tasks of education (Van de Werfhorst and Mijs 2010): (1) to provide the skills needed to find a job; (2) to promote equal opportunity; (3) to prepare students for active citizenship; and (4) to efficiently select and sort students on their abilities and interests.

### How to measure human capital

Mincer (1970, 1974) defined human capital in terms of educational *attainment*. The problem with this measure is that it captures only the quantity of education and ignores the quality: a year of schooling is assumed to deliver the same increase in skills regardless of the quality of teachers, materials or class size, for example (Hanushek and Woessmann 2010). Many countries recognized this problem and began measuring human capital directly by testing the cognitive skills of students (rather than assessing how long they have spent at school). A number of cross-national testing programmes are currently documenting student performance in mathematics, reading and science on a regular basis. The cognitive skills obtained through studying these traditional subjects enable people to find employment and become active citizens. However, active citizenship may also be promoted by distinctly different cognitive skills obtained through studying non-traditional subjects such as those devoted to knowledge of politics and society (Van de Werfhorst and Mijs 2010). Fortunately, cross-national testing programmes also incorporate these different cognitive skills.



## Outcome indicators

As outcome indicators, we use the *mean test scores of 15 year-olds in maths and reading* from the OECD's Programme for International Student Assessment (PISA) to measure cognitive skills. We also use the *proportion of variation in PISA test scores that is explained by parental socio-economic status*, which captures the extent to which socio-economically disadvantaged students are less likely to fulfil their potential. This is used as an indicator for inequality of educational opportunity. And finally, to capture cognitive skills that specifically promote active citizenship, we use four indicators of *civic knowledge, value beliefs and attitudes* among 14 year-olds from the International Civic and Citizenship Education Study (ICCS).

### How do countries perform in terms of the outcome indicators?

*1 Average performance in maths and reading in 2012* was by far the strongest in Eastern Asia (Korea and Japan) and weakest in Southern Europe and Central and Eastern Europe. The scores of Western Europe, Northern Europe, Oceania and Northern America came in the middle, with mutually comparable performance. Intraregional differences were largest in Central and Eastern Europe, with scores ranging from very low in relative terms in Bulgaria and Romania to quite high in Poland and Estonia. Poland (maths and reading), Romania (maths only), and Latvia (reading only) achieved the biggest improvements in test scores after 2000/2003, while Sweden and Finland witnessed the largest declines.

*2 Inequality of educational opportunity in 2012* was lowest on average in Eastern Asia, followed by Northern Europe and Northern America. Inequality was higher in Central and Eastern Europe, Western Europe, Oceania and Southern Europe. Yet these regional averages mask considerable intraregional variation. The differences were largest in Central and Eastern Europe, with very low inequality in Estonia and very high inequality in relative terms in the Slovak Republic, Hungary and Bulgaria. Western European countries also showed substantial variation, with inequality being low in the Netherlands, the United Kingdom and Switzerland, but high in France and Belgium. Germany, the Netherlands and Switzerland achieved the largest declines in inequality between 2003 and 2012, while Spain, Latvia and France witnessed the largest increases.

*3 Countries that perform well on average do not always achieve equal opportunity.* The association between average maths performance and inequality of educational opportunity is negative but fairly weak. This suggests that policies aimed at improving average educational performance only go some way towards achieving equal opportunity for students from disadvantaged social backgrounds.



4 *Average civic knowledge* in 2009 was highest in Eastern Asia and Northern Europe. It was considerably lower and mutually comparable in Western Europe, Central and Eastern Europe and Oceania. Civic knowledge was lowest in Southern Europe (though there were intraregional differences, with Cyprus and Greece scoring low and Italy scoring relatively high). No data were available for Northern America.

5 *Average support for equal gender rights* in 2009 was highest in Northern Europe, followed by Western Europe, Oceania, Southern Europe, Eastern Asia and Central and Eastern Europe. No data were available for Northern America.

6 *Average support for equal rights for ethnic groups* in 2009 was highest in Oceania, followed by Northern Europe, Western Europe, Eastern Asia, Southern Europe, and Central and Eastern Europe. However, the differences (especially between the four European regions) were small. No data were available for Northern America.

7 *Support for basic democratic values* in 2009 was generally high. Nearly all students endorsed these values, with support ranging from 88 percent in Malta to 96 percent in Korea.

*Synthesis:* How do the seven geographical regions perform in terms of educational outcomes? *Eastern Asia* performs best when it comes to the cognitive skills as reflected in maths and reading test scores, offering equal opportunity to disadvantaged students and civic knowledge. It does relatively *less* well in supporting equal gender rights and equal rights for ethnic groups. *Northern Europe* scores in the middle for maths and reading, but is among the best performing regions in terms of equal opportunity, civic knowledge and equal rights. *Northern America* performs similarly to Northern Europe in terms of maths and reading and equal opportunity, but there is a lack of the data needed to measure civic knowledge and equal rights. *Western Europe* and *Oceania* also score in the middle for maths and reading and are among the best performers on equal rights, but do less well than Northern Europe in terms of equal opportunity and civic knowledge. *Southern Europe* and *Central and Eastern Europe* achieve the lowest scores in maths and reading and are also among the worst performing regions when it comes to equal opportunity, civic knowledge and equal rights. However, there are substantial differences within regions, especially within Central and Eastern Europe.

How much do countries invest in terms of educational inputs?

1 *Total spending on educational institutions as a percentage of GDP* in 2011 was between 5 and 7 percent in most countries (the oecd average was 6 percent). The countries that spent more than 7 percent were Cyprus, Malta,





Denmark, Korea, New Zealand and Norway. The countries that spent less than 5 percent were Romania, Bulgaria, Slovak Republic, Hungary, Italy and Croatia.

*2 Private spending as a percentage of total spending on educational institutions* in 2011 averaged 16 percent across oecd member states, but varies considerably between countries. Private spending accounted for more than 30 percent of all spending in Korea, the United States and Japan, but less than 3 percent in Norway, Finland and Sweden.

How much do countries produce in terms of educational outputs?

*1 The percentage of 15 to 19 year-olds who were enrolled in education* in 2012 was 85 percent on average in the countries studied in this volume. Countries where enrolment exceeded 90 percent were Lithuania, Latvia, Ireland, the Netherlands, Belgium, Poland, Slovenia and the Czech Republic. Countries with enrolment rates below 80 percent were Cyprus, Malta, Luxembourg, the United Kingdom, Bulgaria and Austria.<sup>3</sup>

Which factors explain differences in the main outcome across countries and over time?

What determines educational outcomes? Is it mostly individual student characteristics or family background that matter? Are school inputs important? And what is the role of institutional factors, such as the degree of school autonomy? The answers to such questions are essential to policy-makers. We addressed these questions by studying the determinants of our main outcome variable: cognitive skills (identified by student test scores). This was done by first reviewing the empirical economic literature and then conducting an exploratory statistical analysis.

Hanushek and Woessmann (2010) review the economic literature on the determinants of international differences in student test scores and discuss three groups of determinants: (i) student and family background; (ii) school inputs; and (iii) institutional features of schools and education systems. Our discussion of these determinants draws heavily from Hanushek and Woessmann (2010), Hanushek and Woessmann (2014), and Hanushek, Piopiunik and Wiederhold (2014).

The results indicate that *student and family background* are important determinants of student performance. By contrast, evidence on the effects of *school inputs* is mixed. The quality of teachers and instructional material seems to matter, while quantitative measures such as expenditure per student and class size seem to be less relevant. This suggests that policymakers wishing

<sup>3</sup> Differences in the coverage of the population data and the enrolment data imply that the enrolment rates may be underestimated for countries such as Luxembourg which are net exporters of students, and may be overestimated for those that are net importers.



to boost the cognitive skills of 15 year-olds should invest in the quality of teachers and instructional material (rather than in smaller classes).

*Institutional features of schools and education systems* also seem to be important in explaining test scores. Three distinct types have been shown to be positively associated with student test scores: (a) accountability; (b) the autonomy of schools and (c) the degree to which state schools face competition from private schools. In short, the results in the literature suggest that policy-makers wishing to boost the cognitive skills of 15 year-olds should:

- ensure that authorities external to the school have responsibility for the content of examinations. This ensures that the performance of students can be compared across classes and schools and thus facilitates the monitoring of the performance of students, teachers and schools.
- ensure that teacher lessons are monitored by school staff or external inspectors;
- ensure that schools use assessments of student achievement to compare themselves to district or national performance;
- ensure that schools use assessments of student achievement to decide on a student's promotion to the next grade;
- grant schools autonomy in process and personnel decisions (especially in the presence of accountability mechanisms such as external responsibility for the content of examinations) but not in setting the budget and choosing the subject matter to be taught in class. More autonomy could improve performance because schools have superior local information (particularly with respect to process and personnel decisions) but could also instigate opportunistic behaviour (especially when it comes to setting the budget and choosing the subject matter) (Hanushek and Woessmann 2014).
- ensure that a high proportion of schools are *privately* operated while a large share of school funding is *public*. According to Hanushek and Woessmann (2014), public funding may be an important precondition for the competitive effects of privately operated schools to kick in, as poor parents may otherwise not have the financial means to send their children to private school.

### Exploratory statistical analysis: main findings

In addition to a literature review, we also performed an exploratory statistical analysis to study the determinants of test scores. Our main findings are set out below.

Average test scores across countries converge over time: countries with an initially weaker performance tend to improve their performance faster than countries with an initially stronger performance (and thus catch up). If this process continues in the future, differences in average test scores across the 36 countries studied in this volume will gradually disappear.



The time-varying factors studied in the economic literature explain only a small part of the cross-country differences in average test scores. The vast majority of differences are explained by structural factors such as structural differences in the quality of teachers. Hence, if one wishes to predict a child's performance in maths or reading, it is more important to know the country in which the child lives than the age cohort to which he or she belongs.

### Citizens' perception of the quality of the education sector

The outcome indicators discussed above reflect the performance of countries in terms of the variables that are targeted by public policies. But how do citizens *perceive* the performance of the education sector? And is this perception more positive in countries with relatively more favourable outcome scores? To address these questions, we use an indicator of the perceived quality of the education system from the European Quality of Life Survey (Eurofound 2012) and plot this indicator against a composite index of educational outcomes. We find that citizens of countries that perform better in terms of educational outcomes also perceive the quality of the education sector as better.

## 2 Health

### Why it matters

Good health (Chapter 3) enables citizens to live longer and enjoy life to the fullest. It also generates economic benefits such as increased labour market participation, higher productivity and higher levels of education (European Commission 2007).

### Outcome indicators

As outcome indicators, we use (i) *life expectancy at birth*; (ii) *infant mortality*; and (iii) *self-perceived health*, all taken from Eurostat and the OECD.

### How do countries perform in terms of the outcome indicators?

<sup>1</sup> *Life expectancy at birth* in 2012 was highest in Japan (83.2 years). Within Europe, it was highest in Spain (82.5 years), closely followed by Italy and France. The lowest life expectancies were found in Latvia and Lithuania, at 74.1 years, followed by the other Central and Eastern European countries. The average annual increase in life expectancy between 1995 and 2012 was greatest in Estonia, Latvia and Korea, where the populations gained an



extra six months of life expectancy every year. At the other end of the scale, Sweden, Greece, Canada and the United States achieved an increase in life expectancy of two months every year. For most countries, the recent trend indicates a flattening of the growth in life expectancy. Life expectancy is higher for women than for men; across the 28 EU Member States, the mean gender gap is 6.1 years. The life expectancy gap both across countries and between men and women has narrowed in recent years.

2 *Infant mortality* (deaths of infants below the age of one per 1,000 live births) in the European regions in 2012 was lowest in Northern Europe (around 2.7) and highest in the Central and Eastern European countries, especially Romania (9.0) and to a lesser extent Bulgaria, Latvia and the Slovak Republic. Infant mortality in the EU-28 fell from 7.5 to 3.8 between 1995 and 2012. The biggest decline was achieved by Latvia and Romania (a reduction of around 12 deaths per 1,000 live births). Other Central and Eastern European countries also saw relatively large declines. Northern Europe showed the smallest fall in infant mortality rates, again pointing to a narrowing of the gap between countries over time.

3 As regards *self-perceived health*, the percentage of citizens who report that their health is good, very good or excellent was highest in Western and Northern Europe, especially in Ireland (83%), Switzerland (82%) and Sweden (81%). It was lowest in Central and Eastern Europe (58% on average) with particularly low figures for Lithuania (45%), Latvia (47%) and Croatia (48%). The percentages have been fairly stable since 2005, except in most Central and Eastern European countries, where they have increased (especially in the Slovak Republic, Hungary and Latvia).

### How much do countries invest in terms of health inputs?

With respect to health *inputs*, we observe that countries in 2012 spent an average of 9 percent of their GDP on health (public and private spending). The United States was by far the biggest spender, followed by France and the Netherlands. The smallest spenders were Estonia, Latvia, Romania and Cyprus.

### How much do countries produce in terms of health outputs?

With respect to *outputs*, the number of doctors' consultations per capita in 2012 ranged from two in Cyprus to 14 in Korea. The number of hospital discharges per 100 people in 2012 varied between eight in Canada, Malta and Cyprus, and 27 in Austria and Bulgaria. Finally, the number of long-term care recipients as a percentage of the population over 65 ranged from one in Portugal to 21 in Switzerland.



Which factors explain differences in our main outcome indicators across countries and over time?

We also address the additional question of which factors explain differences in the outcome indicators across countries and over time. Following Or (2000), we consider factors relating to (i) a country's socioeconomic environment; (ii) the lifestyle of its citizens; and (iii) its health system. An exploratory statistical analysis shows that per capita income is positively associated with health. This is in line with the results of Mackenbach and McKee (2013), who find that better financial circumstances lead to more consumption of food, housing and schooling (all items that could improve health). As regards lifestyle, our results show that higher alcohol consumption is negatively related to health. We find no significant country-level associations for the percentages of daily smokers and citizens who are overweight. This latter finding does not imply that smoking and overweight do not affect the health of individuals (in fact, studies conducted at the level of individuals – rather than countries – indicate that they do, see for example Merkur et al. 2013). As for the health system, we find that total health expenditure as a percentage of GDP is positively associated with health. To summarise, therefore, our results indicate that differences in health can be partly explained by differences in per capita income, lifestyle and health spending as a share of GDP. But we also find that the factors accounted for in our statistical analysis explain only 35 percent of the variation in health. Most variation is explained by unmeasured country-specific effects, such as attitudes and culture.

Finally, additional results of our statistical analysis are consistent with the notion of convergence in health outcomes. In other words, the health of citizens of countries with initially lower levels of health tends to improve faster than in countries with initially higher levels of health (and thus catches up).

Citizens' perceptions of the quality of the health care sector

The health outcomes reflect the performance of countries in terms of the variables that public policies are aimed at. But how do citizens *perceive* the performance of the health care sector? And is this perception more positive in countries with relatively more favourable outcome scores? To address these questions, we plot an indicator of the perceived quality of health services from the European Quality of Life Survey (Eurofound 2012) against a composite index of health outcomes. We find that citizens of countries that perform better in terms of health outcomes also perceive the quality of the health care sector as better.



### 3 Social safety

Comparing crime rates across countries (Chapter 4) is extremely challenging. Internationally standardised victim surveys are typically the most reliable source of comparable information, but unfortunately these are not available for recent years. As a consequence, the only international data available to us are police registrations (recorded crime). As discussed in detail in Chapter 4, the comparability of nationally recorded crime rates is subject to various measurement problems. Probably the most important of these derives from the vast cross-country differences in reporting by citizens and registration by the police, which lead to artificial differences in recorded crime rates. High levels of *recorded* crime may reflect high levels of *actual* crime (unfavourable), but could equally well indicate high reporting and registration rates (favourable). This ‘safety paradox’ is explained further in Chapter 4.

With this caveat in mind, we briefly report our findings for the social safety *outcome* index, which is based on a weighted average of recorded serious crimes (violence, robbery, burglary, motor vehicle theft and drugs offences). Among European regions, Central and Eastern Europe showed by far the fewest recorded serious crimes in 2012 on average. Northern European and Western European countries had the most recorded crimes, with the countries in Southern Europe in the middle.

To what extent did outcomes change between 1995 and 2012? The weighted level of total recorded crime (including both serious and less serious crimes) remained fairly constant in most countries over this period. Exceptions include Bulgaria, Estonia and the United Kingdom, which witnessed a sharp reduction in crime, and Slovenia, Portugal and Sweden, which experienced a substantial increase.

With respect to *inputs*, we observe that countries spent between 1 and 2.5 percent of their GDP on public order and safety in 2012. On average, Northern European countries spent the least, while Central and Eastern European countries spent the most. In general, most of this spending was allocated to the police (65 percent), followed by the courts (23 percent) and prisons (12 percent). No association was found between national recorded crime rates and the level of expenditure.

With respect to *outputs*, we find that countries with a higher probability of arresting offenders have lower recorded serious crime rates. The probability that offenders will actually be punished once arrested does not seem to make a difference. However, if the chances are higher that this punishment will involve imprisonment, the nationally recorded crime rate again tends to be lower. Impact evaluations are positive about the deterrent effect of the probability of arrest, especially where the deterrent is visible, but less so about the value of imprisonment itself. Detention serves to



restore the legal order (retribution), but can also serve as an instrument for prevention. Three transmission mechanisms can be distinguished: (i) the direct incapacitating effect of temporarily stopping convicts from offending; (ii) the deterrence of potential perpetrators who have not yet offended; and (iii) reducing recidivism by prisoners. Existing evidence suggests that (i) and (ii) are indeed effective in suppressing crime, while the effectiveness of (iii) is highly doubtful. Detention alone does not reduce recidivism and may even be counterproductive. By contrast, detention combined with specific interventions, such as cognitive behavioural therapy or social learning or skills training, may reduce recidivism.

A final finding is that citizens of countries with higher levels of recorded serious crime are more likely to trust their police and their legal system. In our view, this seemingly counterintuitive result favours the argument that high levels of recorded crime may primarily indicate a high national tendency to report and register offences rather than high actual crime rates.

#### 4 Housing

For housing (Chapter 5) our *outcome* index combines indicators that capture (i) the quality of dwellings; (ii) the extent to which dwellings provide sufficient space; and (iii) the affordability of dwellings. We find that Northern Europe outperformed the other three European regions on average in 2012, although the difference compared with Western Europe was not large. Southern Europe, and especially Central and Eastern Europe, achieved substantially lower scores and also showed larger differences between countries. At the level of individual countries, the performance was strongest in Sweden, Norway, Ireland and Luxembourg, and weakest in Bulgaria, Latvia, Romania, Portugal and Lithuania.

On average, Northern and Western Europe also recorded the highest scores on the three separate dimensions of the outcome index: quality, sufficient space and affordability. This holds not just for 2012, but also for 2007. We also observe that outcome scores improved for the most part between 2007 and 2012, and that average differences between European regions diminished.

With respect to housing *inputs*, governments spent on average between 0.5 and 3.0 percent of GDP on housing (2007-2011). France and Cyprus spent the most, Estonia and Lithuania the least.

As *outputs* we use the separate indicators of quality, sufficient space and affordability. We observe that the share of households without housing problems was smallest in Central and Eastern Europe, mainly due to a relatively high incidence of insufficient space, lack of bath or toilet, and problems keeping the dwelling warm or cool. Southern European countries faced a relatively large number of problems of quality and affordability, but few



space problems. Western Europe scored around the average on quality but experienced few space and affordability problems. Finally, Northern Europe performed best on quality and affordability and close to the best on having sufficient space.

Furthermore, we find that government expenditure on housing (input) is not correlated with housing outcomes. By contrast, average household income is strongly and positively associated with housing outcomes.

Finally, we find that citizens of countries which perform better in terms of housing outcomes also perceive the quality of social and municipal housing as better.

## 5 Social security

For social security (Chapter 6), our *outcome* index includes poverty, non-employment of young people, long-term unemployment and pension replacement rates for average male earners.<sup>4</sup> Overall, we find that the countries in Northern Europe obtained the highest average scores for social security, followed by the countries in Western Europe. The countries in Southern Europe and Central and Eastern Europe obtained the lowest scores. At the level of individual countries, outcomes were most favourable in the Netherlands, Austria, Luxembourg and Denmark, and least favourable in Greece, Spain and Romania.

Over recent years, no clear overall increase or decrease is observed in the social security outcome indicators. For poverty, around half the countries in Western Europe, Northern Europe and Southern Europe experienced an increase over the period 2005-2011, and the other half a decrease. By contrast, most countries in Central and Eastern Europe witnessed sharp reductions in poverty. The trend over time is also mixed for non-employment in youth. Between 2005 and 2013, substantial decreases occurred in Germany and the Czech Republic, while large increases were found in Ireland, Italy, Portugal, Spain and Greece. Looking at long-term unemployment, most countries have seen an increase in recent years. This increase was most marked in some Southern European and Central and Eastern European countries, and in Ireland. Increases in youth non-employment and long-term unemployment partly reflect the impact of the financial crisis, as countries that suffered most from the crisis also saw the largest increases.

With respect to social security *inputs*, we observe that public spending on social security in 2012 was highest in Northern Europe (22 percent of GDP on average), followed by Western Europe (19 percent), Southern Europe (18 percent) and Central and Eastern Europe (14 percent). Spending was lowest in Eastern Asia (10 percent), Northern America (11 percent)

<sup>4</sup> The pension replacement rate corresponds to earnings from pensions relative to earnings when working.





and Oceania (12 percent).<sup>5</sup> At the level of individual countries, Denmark, Finland and France spent most, while Korea, Canada, the United States and Latvia spent the least.

To obtain a more complete picture of social security inputs, we need to look at the extent to which public spending is supplemented by *private* spending. We observe that, in 2011, around 15 percent of social spending on average was private. At the level of individual countries, this percentage ranged from close to zero in Estonia and Poland to almost 50 percent in the United States.

With respect to social security *outputs*, we consider (i) the percentage of pension beneficiaries within the population above retirement age, i.e. the ‘pension coverage’; and (ii) the percentage of unemployed people in receipt of unemployment benefit. We find that in 2010 almost all men who reached the retirement age received a pension. In several countries, the pension coverage among women was lower than among men, presumably because historically they have most often been the ones who interrupt their careers to look after others. We also observe that the coverage of unemployment benefits in the period 2011-2013 was highest on average in Western Europe. In many of these countries, more than 60 percent of unemployed persons received benefits. In Austria, Germany, Malta, Ireland, and Belgium, it was no less than 80 percent or more.<sup>6</sup>

Finally, we find no significant correlation between public spending on social security as a percentage of GDP and the social security outcome index.

## 6 Public administration

For public administration (Chapter 7), our *outcome* index captures ‘good governance’, which includes the six elements ‘voice and accountability’, ‘control of corruption’, ‘rule of law’, ‘government effectiveness’, ‘political stability and absence of violence’ and ‘regulatory quality’. Northern Europe scores especially well on good governance in 2013, followed by Oceania, Western Europe, Northern America and Eastern Asia. Central and Eastern Europe and Southern Europe obtained the lowest scores for the public administration outcome index. The best-scoring countries were Finland, Norway, New Zealand, Sweden, and Denmark, while the worst-scoring countries were Bulgaria, Romania and Greece.

Between 1996 and 2013, public administration performance declined in Southern Europe (except for Malta), Western Europe (except for Switzerland) and Northern America. In contrast, Central and Eastern Europe (except for Hungary and Slovenia) along with Eastern Asia experienced an increase in good governance scores. Northern Europe and

<sup>5</sup> We should note that there are issues with the cross-country comparability of these levels of expenditure, as data for non-European countries originate from different sources and relate to 2011 instead of 2012.

<sup>6</sup> A coverage of 100 percent does not occur because unemployment benefit schemes typically cover a limited time period, are mostly restricted to employees in formal employment, and do not cover new entrants to the labour market.



Oceania had stable high scores. Since 1996, Greece, Portugal and Italy have shown the largest decreases, while Croatia, Latvia and Estonia have seen the largest increases in the public administration outcome index.

As regards public administration *inputs*, we observe that government expenditure on public administration was roughly between 6 and 18 percent of GDP on average in Europe. Most Southern European countries had relatively high levels of expenditure, but no clear regional pattern could be discerned. The biggest spenders were Cyprus, Greece, Denmark, Portugal, Poland and Italy (all above 10% of GDP). The lowest spenders were Norway, Hungary, Estonia and Bulgaria (all around 6% of GDP). Another indicator for inputs is the share of general government personnel in the total labour force. This was highest in Norway, the Czech Republic, Denmark, the Slovak Republic and Sweden (all above 30%), and lowest in New Zealand, Spain, Switzerland and Australia (all 10 to 15 percent).

For public administration, *output* is an elusive concept. Therefore, system characteristics related to the civil service task of public administration are measured and correlated with the outcome index. These characteristics are 'economic performance', 'freedom of the press', 'structure of civil service salaries', 'quality of the public administration', 'spending on public administration and tax administration', 'level of decentralisation', 'intensity of ICT expenditure' and 'traditional versus modern bureaucracy'. Economic performance, professionalism (as a dimension of the quality of the public administration), freedom of the press, degree of decentralization and intensity of ICT expenditure were significantly positively correlated with the public administration outcome index. The share of the tax administration, on the other hand, was significantly negatively correlated with the outcome index.

As regards the input indicators, no clear correlation with the outcome index was found, either for governmental spending on public administration as a percentage of GDP or for the share of general government personnel in the total labour force.

Finally, we find that citizens of countries that perform better in terms of public administration outcomes also put more trust in the civil service.

## 7 Three other public sectors

Chapter 8 contains a preliminary description of the three remaining public sectors: 1) economic affairs and infrastructure; 2) environmental protection and 3) sport, culture and participation. In particular, we focus on the most recent available data and present data for outcomes and inputs only.



## Economic affairs and infrastructure

For economic affairs, we use a measure of global competitiveness as outcome indicator. For infrastructure, two outcomes are presented. The first captures the quality of a country's infrastructure, while the second measures the number of fatal traffic accidents. We find that Western and Northern European countries, and especially Switzerland, Finland and the Netherlands, score well on all three indicators. Japan, Germany, Austria, Sweden, Denmark and France also do well. By contrast, the Central and Eastern European and Southern European countries perform less well.

With respect to inputs, EU governments spend on average around 4 percent of GDP on economic affairs and infrastructure. Spain and Belgium spend most, while the United Kingdom and Portugal spend the least. The transport sector accounts for the largest share of spending.

## Environmental protection

For environmental protection, we use indicators for land and ecosystems, water, air quality, climate and energy resources as outcomes. We find no clear pattern in performance across outcomes. For instance, urban exposure to ozone (air pollution) is highest in Finland and the Southern European countries, whereas energy consumption is highest in Western and Northern Europe.

With respect to inputs, public spending on environmental protection is modest, ranging from 0.3 percent to 1.7 percent of GDP across countries. However, this does not include policies to reduce and prevent climate change, which play an important role in environmental protection and typically transcend national policies and legislation.

## Sport, culture and participation

Sport, culture and participation constitute a heterogeneous mix of activities in which the public sector plays only a limited role. Outcome indicators for sport and culture focus on being physically active, membership of a sports club and cultural participation. The most active citizens in terms of sport and culture are found in the Northern and Western European regions. In particular, Sweden, Denmark and the Netherlands score well above average with regard to public involvement in sport and culture. The Central and Eastern European and Southern European countries score relatively low.<sup>7</sup>

With respect to inputs, public spending on sport, culture and participation is generally low, ranging between 0.3 percent and 2.7 percent of GDP.

<sup>7</sup> We do not use outcomes for 'participation' due to limited data availability and issues of cross-country comparability.



## 8 The impact of the global financial crisis

We conclude this summary with a brief account of the impact of the recent global financial crisis. This crisis began in 2008 and caused an economic recession in all EU Member States except for Poland and the Slovak Republic, and triggered several sovereign debt crises throughout the Eurozone. How did the crisis affect public sector outcomes in Europe? And is the impact of the crisis reflected in our findings?

### Impact of crisis mainly reflected in social security outcomes

The impact of the global financial crisis seems to be most clearly visible in the outcomes for social security. Both non-employment in youth and long-term unemployment increased sharply in countries that suffered severely from the crisis. Examples include Greece, Spain, Cyprus, Portugal, Italy and Ireland, most of which, in addition to the global crisis, also suffered from a subsequent sovereign debt crisis. In addition to social security, the outcome for public administration also reveals a possible crisis effect. In particular, Greece, Spain and Portugal all saw a clear deterioration in the quality of their governance. For education, health, social safety and housing, any impact of the crisis is (as yet) hardly visible. As more data become available, future research will be able to discern whether the crisis has any long-term consequences in these sectors, or whether their outcomes were indeed barely affected.

### Convergence reversed in Europe?

In a recent report, the European Commission (2015) concludes that: *“The convergence in terms of economic and social performance that had been under way across the EU over the past two decades came to a halt with the crisis, and reversed strongly in the case of employment, and unemployment rates. This particularly reflected the adverse impact of the crisis on Southern and peripheral EU-15 Member States, while convergence did continue for most of the member states that joined the EU in 2004 or later.”* Some of the results in this study are in line with these conclusions. First, our analysis for the sectors education and health yields results that are consistent with the notion of convergence, or in other words the idea that countries with initially lower levels of performance will tend to improve their performance faster than countries with initially higher levels of performance (and thus catch up). Second, our results for non-employment in youth and long-term unemployment (the chapter on social security) confirm the adverse impact of the crisis in the countries in Southern and peripheral EU-15 Member States (Greece, Ireland, Portugal, Spain, Italy), as identified by the European Commission (2015).



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Part I  
Introduction





# Framework, scope and structure of this report

Benedikt Goderis

During the Dutch Presidency of the European Union in 2004, the Netherlands Institute for Social Research | SCP conducted a major international comparative study of the performance of the public sector in various countries (Kuhry 2004). This was followed by an abridged study in 2007 (SCP 2007) and an integral follow-up in 2012 (Jonker 2012). The present report is therefore the second integral follow-up to the 2004 study. Its results are intended for use as input for the Dutch Presidency of the European Union in the first half of 2016. The report partly replicates and updates the research in Jonker (2012), but it also widens and deepens the approach by expanding the number of countries studied, extending the number of sectors that are studied in detail, and devoting more attention to explaining differences across countries and over time.

## *The origin of Western welfare states*

Public sector provisions vary greatly between countries and over time. The history of the Western welfare state can be traced back to the second half of the nineteenth century. The Industrial Revolution led to urbanisation, stronger population growth and a shift from labour to capital as the main factor of production. Along with increased productivity came a large class of urban factory workers whose social and economic deprivation could not be adequately addressed by existing social safety nets such as family or churches. At the same time, the productivity gains increased the tax base and, consequently, the potential for state-led social policies (Castles et al. 2010).

The development of the Western welfare state only really took off in the twentieth century, in part due to the desire for peace and security following two world wars. Progress was most pronounced during the period 1945-1974, and slowed down in the 1970s and early 1980s in response to less favourable economic conditions and a more negative view of the desirability of state intervention (Castles et al. 2010).

While the evolution of Western welfare states has to a large extent been driven by global events such as the Industrial Revolution and the First and Second World Wars, countries differ vastly in terms of the objectives, coverage, depth and institutional design of their welfare state regimes (see e.g. Esping-Andersen 1990, Vrooman 2009 and Chapter 6 of this volume). At the same time, there are also surprisingly widespread similarities. In most Western countries, for example, social security and health are the largest public sectors.



*Current trends and the sustainability of the welfare state*

The sustainability of Western welfare states as we have come to know them has recently been called into question. First and foremost, higher life expectancy and lower fertility rates are leading to population ageing, and, consequently, a greater take-up of expensive welfare state provisions such as pensions, health and long-term care. Second, but to a much smaller extent, the influx of – on average relatively poor – migrant workers and refugees since the 1960s has also led to an increase in social spending, although it may also help to mitigate the effects of an ageing population (Castles et al. 2010). And finally, the recent global financial crisis has, at least temporarily, further added to the concerns about the financial sustainability of the welfare state.<sup>1</sup>

In 2014, general government expenditure amounted to 48% of GDP in the EU-28. The highest levels of government expenditure are found in Finland, Denmark and France (between 57 and 59% of GDP), while the lowest levels are found in Romania, Lithuania and Latvia (between 35 and 36% of GDP). Social security is currently the largest sector in terms of spending (20% of GDP in 2013). Together with health, it accounts for half of public spending (Eurostat 2015a, b).

*Rationale and scope of study*

Both the large differences between welfare state regimes and the concerns about the sustainability of those regimes make it particularly interesting to compare public sector outcomes between countries and over time. How do countries perform relative to their peers? Has their performance improved or worsened in recent years? Can countries learn from one another in this respect?

This study examines the inputs, outputs and outcomes of the public sector in 36 countries (including the EU-28) over the period 1995-2012.<sup>2</sup> We look at education, health, social safety, housing, social security, public administration, economic affairs and infrastructure, environmental protection, and sport, culture and participation.

*Structure of the chapter*

Section 1.1 of this chapter presents the conceptual framework used in this study. Section 1.2 documents the central research questions addressed in the study. Section 1.3 explains our choice of sectors, countries and indicators. Finally, Section 1.4 describes the structure of the remainder of this report.

<sup>1</sup> For a more detailed perspective on the (un)sustainability of Western welfare states, see e.g. Glennerster (2010).

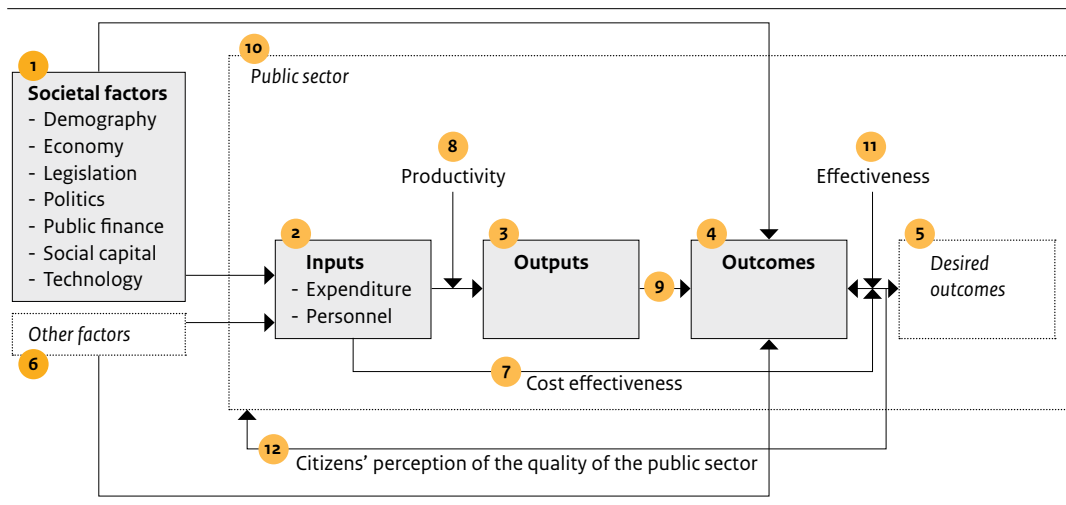
<sup>2</sup> Where data were available at the time of writing, we also included 2013 in our analysis.

## 1.1 Conceptual framework<sup>3</sup>

### *The heuristic framework used in this study*

We adopt a simplified heuristic framework, partly based on Jonker (2012), to analyse the public sector. The framework is presented in Figure 1.1 and describes the various components used in this study, including the inputs, outputs and outcomes of the public sector.

Figure 1.1 Heuristic model



Source: Jonker (2012).

### *Inputs, outputs and outcomes*

Inputs, outputs and outcomes of the public sector are the core focus of this study. The public sector (item 10 in Figure 1.1) provides *inputs* (2), such as spending on schools, that are used to produce *outputs* (3), such as the enrolment of children in schools. More output should then result in better *outcomes* (4), such as better test scores for children in mathematics. While test scores identify cognitive skills that have been shown to boost long-term economic growth (Hanushek and Woessmann 2011), it is typically the cognitive skills that policymakers care most about, not the maths test scores per se. To clarify this difference, Figure 1.1 distinguishes between outcomes, such as maths scores, and *desired outcomes* (5), such as cognitive skills.

Inputs are mostly measured in monetary terms, but we also consider the number of personnel employed in a sector. In selecting our output measures, we aim to stay as close as possible to the production process, but this is more straightforward for some sectors (education, health) than for others (social safety, public administration).

<sup>3</sup> This section draws partly on Jonker (2012).



The ratio of outputs to inputs used is referred to as *productivity* (8). A sector is considered *effective* (11) if its desired outcomes (5) are achieved. *Cost-effectiveness* (7) captures the relationship between the level of expenditure and the (desired) outcomes. Achieving outcomes may be easier when spending is higher.

It is difficult to formulate quantifiable outcomes for some parts of the public sector. The most obvious example is the defence sector. Outcomes for this sector can only be formulated in broad and general terms ('peace and stability, at home and abroad'), which are difficult to operationalise in concrete indicators. We therefore exclude the defence sector from this study.

#### *Societal and other factors*

The current size and composition of the public sector is affected by a number of *societal factors*, such as demography, economy, legislation, politics, public finance, social capital and technology (see item 1 in Figure 1.1).

*Demography* influences the type of public provisions that are needed: for example, an ageing population will demand more health care whereas a younger population has a greater need for education. The *economy* also affects the public provisions that are needed, such as unemployment benefits. At the same time, the economy, as well as the state of *public finance*, also sets the boundaries for the extent of public spending. *Legislation* is of importance because it imposes both restrictions and requirements on the public sector. Examples include laws that govern the prohibition of arbitrary arrest and detention, and citizens' right of access to the courts. *Politics* affects both the size of the public sector and the choice of public policies. Examples of relevant political factors include the political ideology of citizens and the incumbent government, the influence of trade unions and employers' organisations, and the influence of special interest groups. *Social capital* matters too, because social networks can fulfil tasks that would otherwise have to be performed by the public sector, such as the care for elderly family members. And finally, *technology* is important because it makes it easier for governments to communicate with citizens, reduces the cost of public policies, and increases the scope for public initiatives. The public sector is also affected by *other factors*, such as global economic and political developments, or natural disasters (see item 6 in Figure 1.1).

#### *Citizens' perception of the quality of the public sector*

The extent to which outcomes are achieved may affect *citizens' perception of the quality of the public sector* (see item 12 in Figure 1.1). This in turn can have feedback effects on the size and composition of the public sector. In this study we briefly address how citizens perceive the performance of the public sector. Is this perception more positive in countries with relatively more favourable outcome scores? Unfortunately, the number of available (internationally comparable) measures of citizens' perception of the quality of (or satisfaction with) specific public sectors is limited. We therefore



use proxies in some cases, such as the confidence or trust of citizens in the relevant public sector. The assumption is that confidence or trust provide an indication of the perceived quality of the relevant public sector, or are strongly correlated with that perceived quality. A caveat is in order. While we examine the correlation between outcomes and citizens' perception of performance, we cannot make any causal claims. The relationship could operate in either direction: a favourable outcome could lead to a more positive perception of the public sector or, conversely, a more positive perception of the public sector could raise its effectiveness.

#### *Measuring the performance of the public sector*

Measuring public sector performance is a difficult task that is subject to a range of methodological challenges. It is nevertheless an important task, and this study aims to contribute to this ongoing research agenda. One of the challenges that researchers face is that the outcome indicators in Figure 1.1 indicate differences in performance but not necessarily differences in the performance of the public sector. Take for example the performance of a country's education sector. One approach is to argue that education aims to develop the individual skills (or 'human capital') needed for a person's economic and social participation in society. One could then look for example at the achievement of students in cognitive tests. But obviously this depends not just on the quality of the education sector, but also on other (often unobserved) factors, such as social conditions (Dronkers 2011). Test scores thus reflect a country's performance in terms of cognitive skills and human capital, but not necessarily the quality of its education. This distinction is particularly relevant in cross-country research, as differences in unobserved factors are likely to be considerable. The same problem potentially applies to sectors other than education: outcome indicators are also *directly* influenced by factors outside the public domain, including the societal and other factors in Figure 1.1 (as illustrated by the corresponding arrows). As a result, outcome differences cannot necessarily be interpreted as differences in public sector performance. Instead, they should be interpreted as differences in the performance of countries in terms of the goals that public policies aim to achieve. It is important to keep this in mind when assessing differences in the outcome indicators used in this and other studies of the public sector.

To conclude this section, it is important to point out that the conceptual framework illustrated in Figure 1.1 is highly stylised. It is mainly presented to provide an insight into the various elements used, such as inputs, outputs and outcomes. A rigorous empirical analysis of all the elements and relationships in Figure 1.1 goes beyond the scope of this study.



## 1.2 Central research questions

In this study we pose the following four central research questions:

- 1 How do countries perform in terms of the outcome indicators, that is, in terms of the goals that their public policies aim to achieve? Which countries/regions perform best? Which countries/regions do worst? Which countries have shown the biggest improvements since 1995?
- 2 How much do countries invest in terms of inputs and how much do they produce in terms of outputs?
- 3 How do differences in outcomes between countries and over time relate to differences in inputs and outputs?
- 4 Do citizens of countries that perform better in terms of outcomes also *perceive* the quality of the corresponding sector as better?

These four research questions were also addressed in the previous edition (Jonker 2012). We deepen the approach here by also addressing the following additional research question, albeit only in the chapters on education and health (chapters 2 and 3):

- 5 Which factors explain differences in the outcome indicators between countries and over time?

The last question is a causal one. Hence, for education and health, we aim to identify the *causal* effects of a range of explanatory variables on the outcome variables. This includes policy variables but also societal and other factors. Identifying causal effects is not straightforward, and we will therefore rely not only on an econometric analysis but also on a review of relevant literature.

## 1.3 Our selection of sectors, countries and indicators

This study is a follow-up to earlier editions by Jonker (2012) and Kuhry (2004). It partly replicates the research in Jonker (2012) and updates the data used to the period 1995-2012 (previously 1995-2009). However, it also widens and deepens the approach in Jonker (2012) in three distinct ways. First, we have expanded the number of countries from 28 to 36 (adding Bulgaria, Croatia, Cyprus, Latvia, Lithuania, Luxembourg, Malta and Romania). In particular, we now include *all* current 28 EU Member States plus the 8 non-EU countries included in the previous edition. Second, we have increased the number of sectors that we study in detail. In particular, while the public administration and social security sectors were previously included in a joint chapter with three other sectors, they are now studied in two separate chapters. Third, we devote more attention to explaining differences across countries and over time. This corresponds to the additional research question 5 for the chapters on education and health, as explained in the previous section. Below we elaborate on our selection of sectors, countries and indicators.



*Selection of sectors*

The public sector can be divided into ten sectors, based on the OECD's 'Classification of the Functions of Government' (COFOG). COFOG classifies government expenditure data from the System of National Accounts according to the purpose for which the funds are used (OECD 2011: Annex B, p. 1). One advantage of COFOG is that it provides a general framework, allowing for a comparison of public expenditures between countries. Table 1.1 presents a (slightly adjusted) list of the ten COFOG sectors.

Table 1.1 Classification of functions of government

Sector
1 – Education
2 – Health
3 – Social safety
4 – Housing
5 – Social security
6 – Economic affairs and infrastructure
7 – Environmental protection
8 – Sport, culture and participation
9 – Defence
10 – Public administration

Note: The classification is largely based on COFOG, but the names of some sectors have been adjusted to match the operationalisation in this study (OECD 2011: Annex B, p. 1).

This study includes nine of the ten sectors above. Defence is not included as it is very difficult to define and measure outcomes and outputs for this sector. The goals or objectives of defence are more often expressed on an international stage in the form of specific missions in certain countries, often in coalitions with other countries. Of the nine other sectors, Jonker (2012) examined four in detail in separate chapters (education, health, social safety and housing) and the other five more globally in one joint chapter. This study deepens the approach by raising the number of sectors that we study in detail in separate chapters from four to six (adding social security and public administration). The joint chapter consequently discusses the remaining three sectors (economic affairs and infrastructure, environmental protection, and sport, culture and participation).

*Selection of countries*

The results of this study will be used as input for the Dutch Presidency of the European Union in the first half of 2016. The starting point is therefore to look at the 28 EU Member States. For comparison, we add the



eight non-EU countries that were included in the previous edition of this study by Jonker (2012).<sup>4</sup> This yields a total of 36 countries studied in this volume.<sup>5</sup> Although results will be presented for individual countries, in the discussion it is not always practical to consider each country separately. We therefore classify them into seven geographical regions.<sup>6</sup> A list of the 36 countries, the corresponding country abbreviations and the seven geographical regions can be found in Table 1.2 on the next page.

#### *Selection of indicators*

The input, output and outcome indicators have been selected based on information from policy documents and international literature and are subject to data availability constraints.

### 1.4 Structure of the remainder of this study

The remainder of this study consists of four parts (in addition to part I, which contains this introductory chapter). Part II (Detailed analyses) comprises Chapters 2 (education) and 3 (health). Part III (Basic analyses) consists of Chapters 4 (social safety), 5 (housing), 6 (social security) and 7 (public administration). Part IV (Preliminary analysis) comprises Chapter 8 (a first inventory of three other sectors), and part V (Synthesis) consists of Chapter 9 (some general patterns in outcomes).

Parts II, III and IV contain our analysis of the various public sectors. The parts differ in their depth.

Part II (education and health) constitutes the core of this study and contains the most extensive analyses. In this part we address all five research questions set out in Section 1.2. This includes an attempt to identify the factors that explain differences in education and health outcomes between countries and over time (research question 5).

Part III (social safety, housing, social security and public administration) contains more basic analyses in which we address research questions 1 to 4 but not question 5.

Part IV (a first inventory of three other sectors) contains a preliminary description of the three remaining sectors and should be viewed as merely a first step towards a more in-depth analysis.

Finally, part V (some general patterns in outcomes) provides a graphic overview of the performance of regions and countries in terms of the outcome indicators. It illustrates how well regions and countries are doing in terms of the goals that public policies aim to achieve. In particular, we compare (i) *regions* in terms of their performance across five public sectors (education, health, housing, social security and public administration) and (ii)

<sup>4</sup> The eight non-EU members are Australia, Canada, Japan, Korea, New Zealand, Norway, Switzerland and the United States.

<sup>5</sup> Data are not always available for all 36 countries.

<sup>6</sup> This classification partly overlaps with the classification by the United Nations, with some exceptions (for reasons of comparability): (i) Estonia, Latvia and Lithuania are included in Central and Eastern Europe (rather than Northern Europe); (ii) Ireland and the United Kingdom are included in Western Europe (rather than Northern Europe); (iii) Croatia and Slovenia are included in Central and Eastern Europe (rather than Southern Europe); and (iv) Cyprus is included in Southern Europe (rather than Western Asia).



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Table 1.2 Countries included in this study

Region	Country	EU Member State	Country abbreviation
Western Europe	Austria	yes	AT
	Belgium	yes	BE
	France	yes	FR
	Germany	yes	DE
	Ireland	yes	IE
	Luxembourg	yes	LU
	Netherlands	yes	NL
	Switzerland	no	CH
	United Kingdom	yes	GB
Northern Europe	Denmark	yes	DK
	Finland	yes	FI
	Norway	no	NO
	Sweden	yes	SE
Southern Europe	Cyprus	yes	CY
	Greece	yes	GR
	Italy	yes	IT
	Malta	yes	MT
	Portugal	yes	PT
	Spain	yes	ES
Central and Eastern Europe	Bulgaria	yes	BG
	Croatia	yes	HR
	Czech Republic	yes	CZ
	Estonia	yes	EE
	Hungary	yes	HU
	Latvia	yes	LV
	Lithuania	yes	LT
	Poland	yes	PL
	Romania	yes	RO
	Slovak Republic	yes	SK
	Slovenia	yes	SI
Oceania	Australia	no	AU
	New Zealand	no	NZ
Northern America	Canada	no	CA
	United States	no	US
Eastern Asia	Japan	no	JP
	Korea	no	KR

Note: The country name 'Korea' throughout this study refers to the Republic of Korea (as opposed to the Democratic People's Republic of Korea). Following the iso list of country codes, we use the abbreviation 'GB' for the United Kingdom of Great Britain and Northern Ireland (in short: United Kingdom).





*countries within each region* in terms of their performance across the same five public sectors. This part should be viewed as an illustration of some of the results for public sector outcomes documented in earlier chapters. But it also goes beyond these chapters by looking at five sectors simultaneously. This allows us to identify cross-sectoral patterns in the performance of regions and countries.

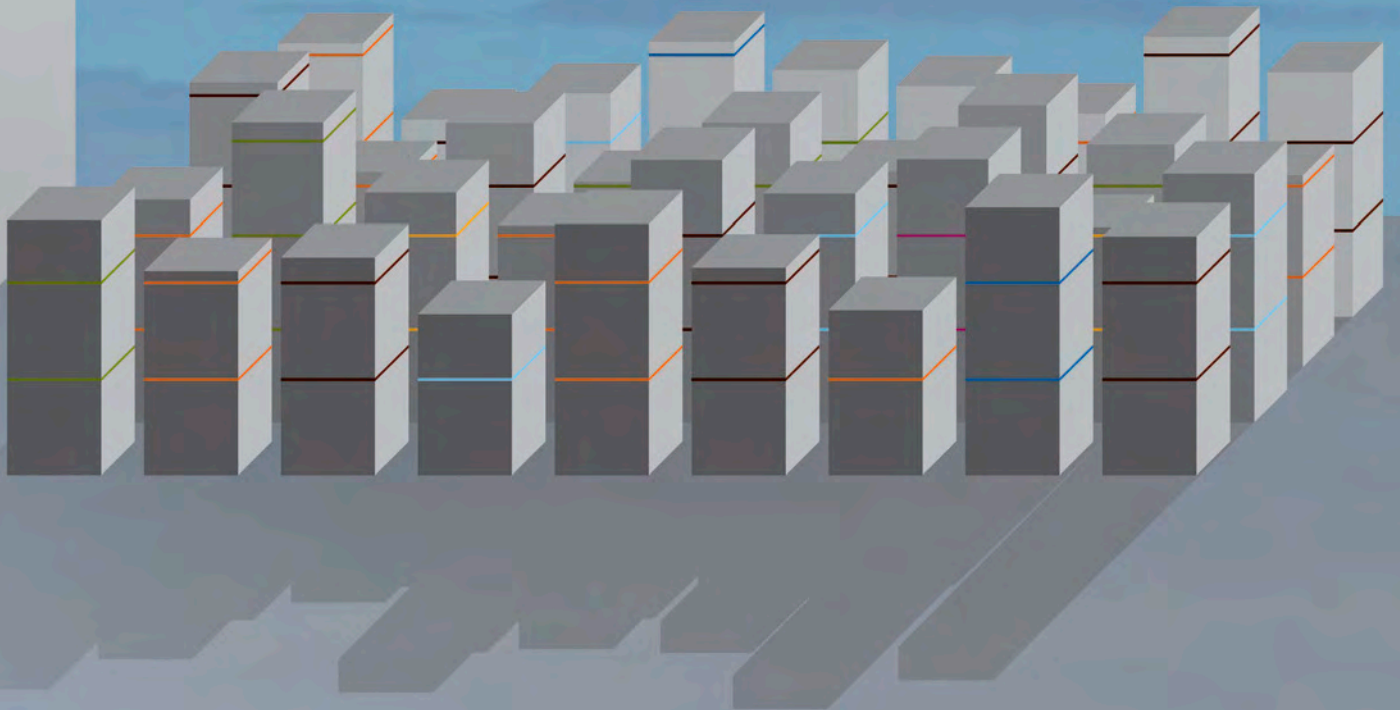
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Part II

# Detailed analyses





# Education<sup>1</sup>

Benedikt Goderis (in collaboration with Isolde Woittiez)

*Education was important after WWII...*

While the importance of human capital and education was recognised much earlier, the subject received renewed interest in the aftermath of World War II. Most democratic and capitalist societies saw the need to use available skills and develop an educated labour force in order to address the challenges of post-war reconstruction. The process of global trade liberalisation in subsequent decades increased competition between countries and further incentivised them to invest in an educated workforce. At the same time, the notion that the government plays a central role in fostering education became generally accepted (Dronkers 2011).

*... continues to be important today...*

Education continues to be important for the economic competitiveness of Europe today. Post-crisis recovery is slow, unemployment remains high and education seems to be one of the key sectors when it comes to restoring long-term and inclusive economic growth (OECD 2015). In addition, economic activities that require unskilled workers have largely moved to other parts of the world and many European economies are increasingly focusing on activities that require skilled labour. This reallocation further enhances the need for a well-educated labour force.

*... and matters beyond the economy*

Education also matters beyond its economic effects. First, and perhaps foremost, it teaches children the norms, values, and skills they need to function in society (socialisation). Second, it facilitates the social integration of immigrants (Ballantine and Hammack 2012). Third, it plays a central role in the formation of the identity of students (Bernstein 1990, 1996). Fourth, it reduces illiteracy and innumeracy, which are deprivations in themselves. Fifth, it enhances peoples' ability to invoke their legal rights and voice their demands in politics. Sixth, it improves health and empowers women. And finally, it promotes friendship and loyalty and can safeguard the commitment to freedom and peace (Sen 2003). Hence, generating economic returns is definitely not education's only task, and perhaps not even its most important one. As an in-depth discussion of all tasks is beyond the scope of this chapter, we focus on the following four core tasks of education (Van de Werfhorst and Mijs 2010): (1) to provide the skills needed to find a job; (2) to promote equal opportunity; (3) to prepare students for active citizenship; and (4) to efficiently select and sort students on their abilities and interests.

<sup>1</sup> The exploratory statistical analysis in Section 2.4.2 was conducted in collaboration with Isolde Woittiez.

## EDUCATION

Table 2.1 Outcome, output, input and trust indicators used in this chapter and corresponding data sources

Level	Indicators	Sources
Outcome	Mean PISA test score in mathematics, reading or science	OECD (PSA)
	Percentage of variation in PISA scores explained by socioeconomic status	OECD (PSA)
	Mean iccs civic knowledge test score	IEA (ICCS)
	Mean iccs scores for attitudes toward equal gender rights	IEA (ICCS)
	Mean iccs scores for attitudes toward equal rights for ethnic groups	IEA (ICCS)
	Percentage of students supporting democratic values	IEA (ICCS)
	Percentage of 25-34 year-olds that has obtained basic qualification	Eurostat / OECD
	Percentage of 25-34 year-olds that has attained tertiary education	Eurostat / OECD
Output	Enrolment rate for 15-19 year-olds	Eurostat / OECD
	Entry rate in tertiary type A education	OECD
	Upper secondary graduation rate	OECD
	Tertiary graduation rate (type A)	OECD
Input	Total expenditure on educational institutions (% of GDP)	Eurostat / OECD
	Private expenditure on educational institutions (% of total spending)	Eurostat / OECD
	Annual expenditure per student in primary, secondary and tertiary education	Eurostat / OECD
	Employment in education as a percentage of the potential labour force	Eurostat / US Census Bureau
Trust	Perceived quality of education system	European Quality of Life Survey

While the view that education is beneficial seems to be generally accepted, it is not self-evident that schools always fulfil these tasks. Bernstein (1990), for example, points out that the pedagogic practice in schools may reproduce or strengthen – rather than mitigate – social inequalities. Bourdieu and Passeron (1990) focus on the unequal distribution of power between classes in society and relate this to social, economic and cultural capital. They argue that cultural capital is particularly important for children in schools. Children from upper-class families are more familiar with the culture in schools, which makes it easier for them to satisfy the expectations of teachers and results in better performance. In this way, education may reproduce existing power differentials in society.

### *Indicators for inputs, outputs and outcomes*

In line with the heuristic model described in Chapter 1, we use separate indicators for inputs, outputs and outcomes. The public sector provides educational *inputs*, such as spending on schools, that are used to produce educational *outputs*, such as the enrolment of children in schools. More output should then result in better *outcomes*, such as a better performance by children in mathematics. In addition, we examine how citizens *perceive* the quality of the education system. Is this perception more positive in countries with more favourable outcome scores? Table 2.1 lists the indicators used in this chapter. The rationale for the choice of indicators and a description are provided in the next sections.

*What is the goal of this chapter?*

The goal of this chapter is fourfold. Our first objective is to document and compare the performance of countries in terms of the outcome indicators. Which countries perform best? Which countries do worst? Which countries have made most progress over the last two decades? Our second objective is to document how much countries invest in terms of educational inputs and how much the education sector produces in terms of outputs. Which countries are the biggest spenders on education? Which countries spend the least? And how do countries compare in terms of enrolment and graduation rates? While the *outcome* indicators capture various dimensions of human capital, such as cognitive skills or the social competence needed for active citizenship, differences in outcomes are not necessarily attributable to the education system or policies. In the same way, a casual comparison of inputs and outcomes does not necessarily imply a causal link either. This brings us to our third objective, which is to study the determinants of our main outcome measure (test scores in reading, maths or science). What explains the performance of students? Do the individual characteristics or family background of students matter? Are school inputs (such as instruction time and expenditure per student) important? And what is the role of institutional features of school systems, such as legally prescribed external examinations and the degree of school autonomy? We address these questions by briefly reviewing some of the economic literature and conducting an exploratory statistical analysis.<sup>2</sup> Finally, our fourth objective is to examine whether, in countries that perform better in terms of outcomes, citizens also *perceive* the quality of the education system as better.

*Structure of the chapter*

This chapter consists of two main parts. The first documents and compares countries in terms of educational inputs, outputs and outcomes (Sections 2.1, 2.2 and 2.3). In Section 2.1 we introduce the outcome indicators and compare countries' performance. Section 2.2 introduces the input measures and documents how much countries spend on education. In Section 2.3 we introduce the output measures and describe how much output countries produce. The second main part of this chapter looks at possible explanations for outcome differences across countries (Section 2.4). In addition to the two main parts, Section 2.5 examines whether citizens' perceptions of the quality of the education system are related to student performance. Section 2.6 presents a number of conclusions.

## 2.1 Outcomes

*What is the goal of education?*

The various tasks of education as described in the foregoing section can be grouped together under the heading of one general goal: to develop the individual skills needed for a person's economic and social participation

2

While a literature review is included in all chapters of this study, a statistical analysis is conducted only in this chapter and the chapter on health.



in society. Although these skills have many different dimensions, they are often captured under the generic term ‘human capital’ (Schultz 1961, Becker 1964).

#### *How to measure human capital*

One of the main challenges in assessing the performance of a country’s education sector is to find suitable measures of human capital. Mincer (1970, 1974) proposed that human capital be defined in terms of educational attainment, a factor that can be measured easily and is almost certainly related to skill development and human capital. The problem with this measure is that it captures only the quantity of education and ignores the quality: a year of schooling is assumed to deliver the same increase in skills regardless of the quality of teachers, materials, or class size, for example (Hanushek and Woessmann 2010). Many countries recognised this problem and began measuring human capital directly by testing the cognitive skills of students (rather than assessing how long they had spent in school). As part of this effort, three major comparative cross-national testing programmes are currently documenting student performance on a regular basis: the Programme for International Student Assessment (PISA), which has been conducting reading, mathematics and science tests among 15 year-olds since 2000; the Trends in International Mathematics and Science Study (TIMSS), which has been carrying out mathematics and science tests among 13-14 year-olds since 1995; and the Progress in International Reading Literacy Study (PIRLS), which has been conducting primary-school reading tests since 2001 (Hanushek and Woessmann 2010). In their extensive review of the economics of international differences in educational achievement, Hanushek and Woessmann (2010) conclude that cognitive skills, identified by test scores, are good measures of relevant skills for human capital and have large effects on long-term economic growth.

#### *Cognitive skills that promote active citizenship*

The PISA, TIMSS and PIRLS tests focus exclusively on reading, mathematics and science. The general cognitive skills obtained through studying these traditional subjects enable people to find employment and become active citizens. However, active citizenship may also be promoted by distinctly different cognitive skills obtained through studying non-traditional subjects such as those devoted to knowledge of politics and society (Van de Werfhorst and Mijs 2010). The 2009 International Civic and Citizenship Education Study (ICCS) (Schulz et al. 2010), building on earlier studies in 1971 and 1999, assessed these different cognitive skills by testing students’ knowledge of civics and citizenship as well as their attitudes, perceptions and activities related to civics and citizenship.<sup>3</sup>

<sup>3</sup> Non-cognitive skills may also matter for economic performance (see Hanushek and Woessmann 2010, and the studies cited therein). Unfortunately, such skills are difficult to measure and consistent international data are not available.



*Our choice of outcome indicators*

As explained above, we focus on the four core tasks of education identified by Van de Werfhorst and Mijs (2010): (1) to provide the skills needed to find a job; (2) to promote equal opportunity; (3) to prepare students for active citizenship; and (4) to efficiently select and sort students on their abilities and interests. We choose our outcome indicators accordingly (see also Table 2.1). First, in line with arguments favouring the use of cognitive test scores to measure human capital and educational achievement, we use two indicators from the OECD's Programme for International Student Assessment (PISA).<sup>4</sup> The *mean PISA test score in maths, reading or science* captures a country's average level of general cognitive skills and hence indicates the average ability of 15 year-olds to find employment and become active citizens (first and third tasks of education). The *proportion of variation in PISA test scores that is explained by socioeconomic status*, on the other hand, captures the extent to which socioeconomically disadvantaged students are less likely to fulfil their potential. This is used as an indicator of inequality of educational opportunity (second task of education). In addition, and to capture cognitive skills that specifically promote active citizenship, we also use four ICCS variables as outcome indicators (third task of education). Finally, our last two outcome indicators are measures of educational attainment, which also capture cognitive skills and are used as proxies for the ability of citizens to get a job and become active citizens (first and third tasks of education).<sup>5</sup> In the next three sections, we document and compare the performance of countries in terms of these outcome indicators. In the subsequent section, we combine the outcome indicators in a single outcome index. The caveat needs to be applied here that, although we have attempted to err on the side of caution, the outcome measures we use are not without problems and we cannot exclude the possibility of measurement error and issues of cross-country comparability. The same holds for the input and output measures. In the notes that accompany the tables and figures, we have attempted to include all available information on possible problems with the reported data.

## 2.1.1 Pisa indicators of educational achievement

PISA conducts internationally standardized and nationally representative tests to measure the performance of 15 year-olds in reading, maths and science.<sup>6</sup> It has carried out surveys every three years since 2000 and now has 70 participating countries. Performance is mapped on a scale with a mean of 500 test-score points and a standard deviation of 100 points across the OECD countries. As explained by the OECD (2014a), not all PISA results can be compared over time due to differences in scaling, sampling and testing conditions.<sup>7</sup> As an important example, while the reading test has been uniformly scaled since 2000, the maths and science tests have had uniform scales only since 2003 and 2006, respectively. Following the OECD (2014a), we include only those countries with valid data to compare

4 We use the OECD's PISA data – rather than the IEA's TIMSS or PIRLS data, or the OECD's PIAAC data – due to its larger coverage. Hanushek and Woessmann (2010) find that PISA and TIMSS scores are highly correlated, suggesting that they measure a common dimension of skills.

5 We do not use outcome indicators that specifically correspond to the fourth core task of education (selecting and sorting students on their abilities and interests) due to a lack of data.

6 In 2012, PISA also conducted tests in problem-solving and financial literacy.

7 See OECD (2014a), Box 1.2.2 on pp. 52–53.





between assessments. This implies among other things that we use all five available waves for reading (2000, 2003, 2006, 2009 and 2012) and exclude wave 2000 for maths and waves 2000 and 2003 for science.<sup>8</sup>

#### *Mean PISA test scores*

Our first outcome indicator is the mean PISA test score in maths, reading or science. Table 2.2 shows maths scores in 2003 and 2012 for each of the countries studied in this volume. Table 2.3 shows reading scores in 2000 and 2012 (OECD 2014a). Countries are grouped per region and ranked according to their 2012 score. Both tables also document the changes in intermediate years. The bar chart on the righthand side of each table visually demonstrates the performance of countries in 2003 (or 2000) and 2012 (for more information on how to read the tables in this report, see page 49).<sup>9</sup> As can be seen, test scores vary substantially across the seven regions and 36 countries. To gauge the magnitude of the differences, a difference of 41 score points corresponds to approximately one year of formal schooling (OECD 2014a). A few results stand out in both tables and hence hold for both maths and reading:

- 1 The countries in Eastern Asia (Korea and Japan) outperformed all European countries in 2012 (as well as all others).
- 2 Bulgaria, Cyprus and Romania achieved the lowest 2012 scores.
- 3 Southern European scores in 2012 were considerably lower on average than those of Western and Northern Europe.
- 4 Western European countries did not perform differently on average from their peers in Northern Europe, Northern America and Oceania in 2012.
- 5 Intraregional differences in 2012 were largest in Central and Eastern Europe, with scores ranging from around 440 in Bulgaria and Romania to around 520 in Estonia and Poland.
- 6 Countries with low scores in the first year for which data are available in most cases had improved their scores by 2012, while countries with high initial scores in most cases had seen their scores deteriorate by 2012. This suggests that countries' test scores converge over time.<sup>10</sup>
- 7 Romania, Poland and Bulgaria (maths) and Poland, Latvia and Germany (reading) achieved the largest improvements in test scores, while Sweden, Finland and New Zealand (both maths and reading) witnessed the largest declines.

We should note that the quality of education, while important, is not the only determinant of test scores. This carries the danger that score differences are attributed to education while in some cases they may stem from different social conditions (Dronkers 2011). Merry (2013), for example, demonstrates that the U.S. deficit in reading relative to Canada already existed at ages 4-5, before formal schooling had a chance to matter. Hence, while the test scores reported here reflect a country's performance in terms of cognitive skills and human capital, they do not necessarily reflect the quality of its education.

<sup>8</sup> Results of the 2015 PISA assessment were not yet available at the time of writing.

<sup>9</sup> Table A2.1 in the appendix to this chapter ([www.scp.nl](http://www.scp.nl)) reports maths and reading scores for all available years (OECD 2014a). Table A2.2 reports regional averages.

<sup>10</sup> In Section 2.4.2 we test the convergence hypothesis more formally as part of our statistical analysis of the factors that drive educational outcomes.



How to read the tables in this report

Region	Country	2003	2006	2009	2012	2012	2012 vs 2003
Western Europe	Switzerland	527	▲ +3	▲ +4	▼ -3	531	
	Netherlands	538	▼ -7	▼ -5	▼ -3	523	
	Belgium	529	▼ -9	▼ -5	0	515	
Northern Europe	Finland	544	▲ +4	▼ -7	▼ -22	519	
	Denmark	514	▼ -1	▼ -10	▼ -3	500	
	Norway	495	▼ -5	▲ +8	▼ -9	489	

This study compares 36 countries in seven regions. The different regions and countries each have their own colour, which will be used in all tables and figures throughout this book. In Chapter 9 we make an exception by presenting a separate figure for each region and comparing only the countries within each region.

We use data for the period from 1995 up to the most recent available year. If data for 1995 are not available, we use the first available year after 1995 (in this example 2003). If this score is not available for 2003, the first available score is instead reported in the column of the relevant subsequent year (in this example 2006, 2009 or 2012).

▲ largest increase  
▼ largest decrease

We computed the net increase or decrease in a country's maths score over the period from the first available to the last available year. The three countries with the largest net increase (or the largest net decrease) are highlighted by using distinct colours for their arrows. In cases where multiple countries have the same net increase or decrease, we highlight more than three countries.

Increase or decrease compared to previous score.

This column reports data for the most recent available year. In cases where these data are not available, the last available data (if any) are instead reported in the column for the relevant previous year.



EDUCATION

Table 2.2 Mean PISA maths scores

For reading instructions see page 49

Region	Country	2003	2006	2009	2012	2012	2012 vs 2003
Western Europe	Switzerland	527	▲ +3	▲ +4	▼ -3	531	
	Netherlands	538	▼ -7	▼ -5	▼ -3	523	
	Belgium	529	▼ -9	▼ -5	0	515	
	Germany	503	▲ +1	▲ +9	▲ +1	514	
	Austria	506	▼ -1	.	506	506	
	Ireland	503	▼ -2	▼ -14	▲ +14	501	
	France	511	▼ -15	▲ +1	▼ -2	495	
	United Kingdom	.	495	▼ -3	▲ +2	494	
	Luxembourg	493	▼ -3	▼ -1	▲ +1	490	
Northern Europe	Finland	544	▲ +4	▼ -7	▼ -22	519	
	Denmark	514	▼ -1	▼ -10	▼ -3	500	
	Norway	495	▼ -5	▲ +8	▼ -9	489	
	Sweden	509	▼ -7	▼ -8	▼ -16	478	
Southern Europe	Portugal	466	0	▲ +21	0	487	
	Italy	466	▼ -4	▲ +21	▲ +2	485	
	Spain	485	▼ -5	▲ +3	▲ +1	484	
	Greece	445	▲ +14	▲ +7	▼ -13	453	
	Cyprus	.	.	.	440	440	
	Malta	.	.	.	.	.	
Central and Eastern Europe	Estonia	.	515	▼ -3	▲ +9	521	
	Poland	490	▲ +5	0	▲ +23	518	
	Slovenia	.	504	▼ -3	0	501	
	Czech Republic	516	▼ -6	▼ -17	▲ +6	499	
	Latvia	483	▲ +3	▼ -4	▲ +9	491	
	Slovak Republic	498	▼ -6	▲ +5	▼ -15	482	
	Lithuania	.	486	▼ -9	▲ +2	479	
	Hungary	490	▲ +1	▼ -1	▼ -13	477	
	Croatia	.	467	▼ -7	▲ +11	471	
	Romania	.	415	▲ +12	▲ +18	445	
Bulgaria	.	413	▲ +15	▲ +11	439		
Oceania	Australia	524	▼ -4	▼ -6	▼ -10	504	
	New Zealand	523	▼ -1	▼ -3	▼ -19	500	
Northern America	Canada	532	▼ -5	0	▼ -9	518	
	United States	483	▼ -9	▲ +13	▼ -6	481	
Eastern Asia	Korea	542	▲ +5	▼ -1	▲ +8	554	
	Japan	534	▼ -11	▲ +6	▲ +7	536	

Source: OECD (2014a).

▲ largest increase  
▼ largest decrease

2012  
 2003



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Table 2.3 Mean PISA reading scores

For reading instructions see page 49

Region	Country	2000	2003	2006	2009	2012	2012	2012 vs 2000
Western Europe	Ireland	527	▼ -12	▲ +2	▼ -21	▲ +27	523	
	Netherlands	.	513	▼ -6	▲ +1	▲ +3	511	
	Switzerland	494	▲ +5	0	▲ +2	▲ +8	509	
	Belgium	507	0	▼ -6	▲ +5	▲ +3	509	
	Germany	484	▲ +7	▲ +4	▲ +2	▲ +11	508	
	France	505	▼ -9	▼ -8	▲ +8	▲ +9	505	
	United Kingdom	.	.	495	▼ -1	▲ +5	499	
	Austria	492	▼ -1	▼ -1	.	490	490	
	Luxembourg	.	479	0	▼ -7	▲ +16	488	
Northern Europe	Finland	546	▼ -3	▲ +4	▼ -11	▼ -12	524	
	Norway	505	▼ -5	▼ -16	▲ +19	▲ +1	504	
	Denmark	497	▼ -5	▲ +2	▲ +1	▲ +1	496	
	Sweden	516	▼ -2	▼ -7	▼ -10	▼ -14	483	
Southern Europe	Italy	487	▼ -11	▼ -7	▲ +17	▲ +4	490	
	Spain	493	▼ -12	▼ -20	▲ +20	▲ +7	488	
	Portugal	470	▲ +8	▼ -6	▲ +17	▼ -1	488	
	Greece	474	▼ -2	▼ -12	▲ +23	▼ -6	477	
	Cyprus	.	.	.	.	449	449	
	Malta	.	.	.	.	.	.	
Central and Eastern Europe	Poland	479	▲ +18	▲ +11	▼ -8	▲ +18	518	
	Estonia	.	.	501	0	▲ +15	516	
	Czech Republic	492	▼ -3	▼ -6	▼ -5	▲ +15	493	
	Latvia	458	▲ +33	▼ -12	▲ +5	▲ +5	489	
	Hungary	480	▲ +2	0	▲ +12	▼ -6	488	
	Croatia	.	.	477	▼ -1	▲ +9	485	
	Slovenia	.	.	494	▼ -11	▼ -2	481	
	Lithuania	.	.	470	▼ -2	▲ +9	477	
	Slovak Republic	.	469	▼ -3	▲ +11	▼ -14	463	
	Romania	428	.	396	▲ +28	▲ +14	438	
Bulgaria	430	.	402	▲ +27	▲ +7	436		
Oceania	New Zealand	529	▼ -7	▼ -1	0	▼ -9	512	
	Australia	528	▼ -3	▼ -12	▲ +2	▼ -3	512	
Northern America	Canada	534	▼ -6	▼ -1	▼ -3	▼ -1	523	
	United States	504	▼ -9	.	500	▼ -2	498	
Eastern Asia	Japan	522	▼ -24	0	▲ +22	▲ +18	538	
	Korea	525	▲ +9	▲ +22	▼ -17	▼ -3	536	

Source: OECD (2014a).

▲ largest increase  
▼ largest decrease

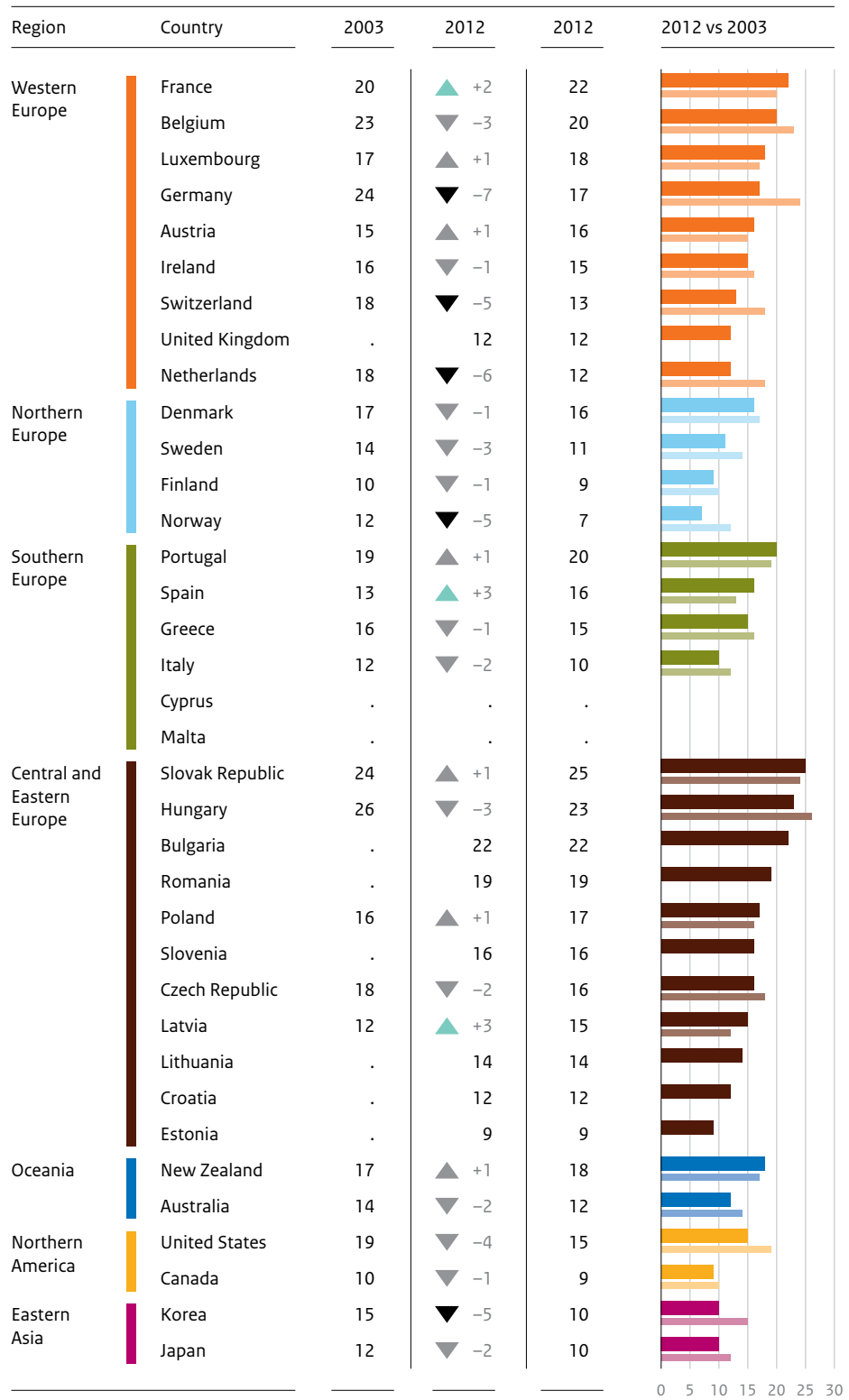
2012  
2000



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Table 2.4 Inequality based on parental socioeconomic status

For reading instructions see page 49



Notes: For comparability over time, PISA 2003 values on the PISA index of economic, social and cultural status have been rescaled to the PISA 2012 scale of the index. Source: OECD (2014b).

▲ largest increase      2012  
▼ largest decrease      2003



The descriptive analysis above is confined to maths and reading because PISA science scores are available only since 2006. One may ask whether the analysis above would have produced different results for science if the data had been available. A more general question is to what extent countries' maths, reading and science scores move together. In other words, if a country does well in maths, for example, is it likely also to do well in reading and science? We addressed this question by computing correlations between the mean 2012 maths, reading and science scores and found these to be very high, indicating that countries' average scores across the different subjects do indeed converge to a large extent.<sup>11</sup> Table A2.3 in the appendix to this chapter reports the mean science scores for all available years (OECD 2014a).

*The proportion of variation in PISA test scores explained by socioeconomic status*  
Our second outcome indicator is the proportion of variation in PISA test scores that is explained by parental socioeconomic status. According to the OECD (2014b), equal opportunity in education does not imply that all students will have the same outcomes from education, but it does mean that students' socioeconomic status has little or no impact on their performance. In line with this definition, the OECD (2014b) constructs an indicator of inequality of educational opportunity by assessing statistically, and for each country separately, how much of the variation in students' PISA maths scores can be explained by their socioeconomic status.<sup>12</sup> Table 2.4 shows the 2003 and 2012 values of this indicator for each of the countries studied in this volume. It also documents the changes in inequality between 2003 and 2012. Countries are grouped per region and ranked according to their 2012 level of inequality. The bar chart on the righthand side of the figure visually demonstrates the levels of inequality in 2003 and 2012. A few results stand out in Table 2.4:

- 1 The Eastern Asian countries not only achieved the highest average 2012 performance in maths (Table 2.2) but were also among the countries with the lowest inequality, the others being the Northern European countries (except Denmark), Estonia, Canada and Italy.
- 2 2012 inequality was highest in the Slovak Republic, Hungary, France and Bulgaria.
- 3 Western European countries performed worse on average in 2012 than their peers in Eastern Asia, Northern Europe and Northern America, but not very different from their peers in Oceania and Southern Europe.
- 4 Intraregional differences in 2012 were largest in Central and Eastern Europe, with inequality levels ranging from around 9% in Estonia to around 25% in the Slovak Republic and Hungary.
- 5 Intraregional differences were also fairly large in Western Europe, with inequality being relatively low in the Netherlands, the United Kingdom and Switzerland, but high in France and Belgium.
- 6 Inequality based on parental socioeconomic status reduced in most countries between 2003 and 2012.

<sup>11</sup> The correlations were 0.90 for maths and reading, 0.92 for maths and science, and 0.93 for reading and science (N = 35).

<sup>12</sup> More precisely, this indicator corresponds to the R-squared of separate bivariate regressions of a student's maths score on his/her parental socioeconomic status (PISA). It is available only for maths and only for the years 2003 and 2012.



- 7 Germany, the Netherlands and Switzerland achieved the largest reductions in inequality, while Spain, Latvia and France witnessed the largest increases.

*Countries that perform well on average do not always achieve equal opportunity*  
To assess how inequality based on socioeconomic status is related to average performance, we plotted inequality against countries' mean PISA maths scores in 2012 (see Figure A2.1 in the appendix to this chapter). It turns out that countries which perform better in terms of average maths performance also seem to do better in providing equal opportunity to students from disadvantaged backgrounds. However, this association is fairly weak.<sup>13</sup> This is in line with the observation that some countries with similar average performances have distinctly different levels of inequality. Examples include the Slovak Republic and Italy, Luxemburg and Norway, France and the United Kingdom, and Belgium and Finland. These results appear to be consistent with the notion that policies aimed at improving average educational performance only go some way towards achieving equal opportunity for students from disadvantaged social backgrounds.<sup>14</sup>

### 2.1.2 ICCS indicators of civic knowledge, value beliefs and attitudes

The general cognitive skills obtained through studying the traditional subjects discussed above enable people to find a job and become active citizens. However, active citizenship may also be promoted by distinctly different cognitive skills obtained through studying non-traditional subjects such as those devoted to politics and society. The 2009 International Civic and Citizenship Education Study (ICCS) assessed these different cognitive skills by testing students' civic knowledge, value beliefs, attitudes and activities. ICCS was targeted at Grade 8 students (i.e. students aged approximately 14 years) and had 38 participating countries, 25 of which are in the list of countries studied in this volume. To capture cognitive skills that specifically promote active citizenship, we use a selection of ICCS variables as outcome indicators, following Dronkers (2014) and Van de Werfhorst (2014). First, to assess knowledge, we simply use the civic knowledge measure. Second, to assess value beliefs and attitudes, we use measures of (i) attitudes toward equal gender rights; (ii) attitudes towards equal rights for ethnic groups; and (iii) support for basic democratic values.<sup>15</sup> Again, it should be noted that the test scores reported here do not necessarily reflect the quality of a country's education, as test scores also depend on other factors.

#### *Mean ICCS civic knowledge scores*

Our first ICCS outcome indicator is the mean civic knowledge test score. The civic knowledge test covered content concerned with civic society and systems, civic principles, civic participation and civic identities. The test

<sup>13</sup> The linear bivariate model of Figure A2.1 accounts for only 21% of the sample variance in inequality.

<sup>14</sup> See Van de Werfhorst and Mijs (2010) and OECD (2010a) for a more extensive analysis of inequality based on parental socioeconomic status as well as inequality in terms of the general dispersion of test scores.

<sup>15</sup> Documenting civic activities is beyond the scope of this chapter.



contained both items involving reasoning and analysis (75%) and items involving just knowledge (25%). Performance was mapped on a scale where the international mean was set to a score of 500 points, with a standard deviation of 100 points. The scale is divided into three proficiency levels (Schulz et al. 2010).<sup>16</sup> Figure 2.1 shows 2009 mean civic knowledge scores (Schulz et al. 2010).

A few results stand out:

- 1 Civic knowledge scores of 14 year-olds were highest in Denmark, Finland and Korea.
- 2 Civic knowledge scores of 14 year-olds were lowest in Cyprus, Bulgaria, Luxembourg and Greece.
- 3 Civic knowledge scores in Northern Europe were considerably higher on average than those in Western Europe, Central and Eastern Europe and Southern Europe.
- 4 Average civic knowledge in Central and Eastern Europe was comparable to average civic knowledge in Western Europe.
- 5 Southern Europe performed worst on average in terms of civic knowledge, but intraregional differences were substantial.

*Mean iccs scores for attitudes toward equal rights*

Our second and third iccs outcome indicators measure attitudes towards equal gender rights and equal rights for ethnic groups. These indicators were constructed using a questionnaire in which students were asked to 'strongly agree', 'agree', 'disagree', or 'strongly disagree' with various statements. Attitudes were mapped on a scale with a mean of 50 and a standard deviation of 10. Figure 2.2 shows the mean scores in 2009 (Schulz et al. 2010). A few results stand out:

- 1 Support for equal gender rights was highest in Sweden, Denmark, Ireland, Norway and Spain, and lowest in Bulgaria and Latvia.
- 2 Average support for equal gender rights in Central and Eastern Europe is lower than in other parts of Europe, despite being relatively high in Slovenia.
- 3 Support for equal rights for ethnic groups was highest in Luxembourg, New Zealand, Norway and Sweden and lowest in the Czech Republic, Latvia and Malta.
- 4 The four European regions have similar levels of average support for equal rights for ethnic groups.

*Percentage of students agreeing with statements reflecting democratic values*

Our fourth iccs outcome indicator measures support for basic democratic values. This indicator was constructed using results from a questionnaire in which students were asked to 'strongly agree', 'agree', 'disagree', or 'strongly disagree' with five statements reflecting democracy.<sup>17</sup> Figure A2.2 in the appendix to this chapter shows the percentages of students agreeing or strongly agreeing, expressed as an average over the five statements.

<sup>16</sup> Proficiency level 1 (395 to 478 points) is "characterised by engagement with the fundamental principles and broad concepts that underpin civic and citizenship and by a mechanistic working knowledge of the operation of civic, civil, and political institutions." Proficiency level 2 (479 to 562 points) is "characterised by knowledge and understanding of the main civic and citizenship institutions, systems, and concepts as well as an understanding of the interconnectedness of civic and civil institutions and relevant operational processes." Proficiency level 3 (563 points and above) is "characterised by the application of knowledge and understanding to evaluate or justify policies, practices, and behaviours based on students' understanding of civics and citizenship." Scores below 395 points indicate proficiency below the level targeted by the assessment instrument (Schulz et al. 2010).

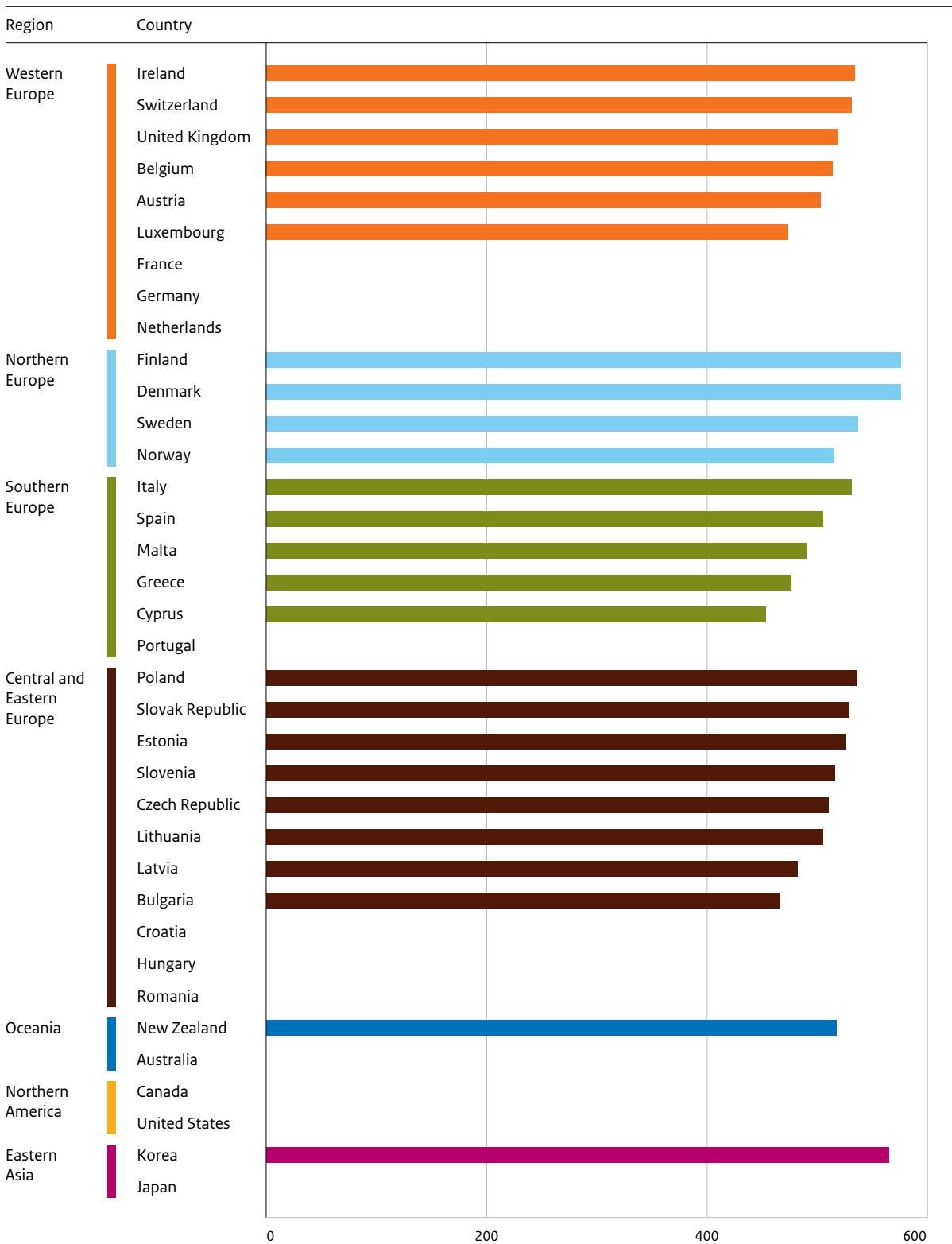
<sup>17</sup> Following Brese et al. (2014), we use the following five statements: (i) Everyone should always have the right to express their opinions freely; (ii) All people should have their social and political rights respected; (iii) People should always be free to criticise the government publicly; (iv) All citizens should have the right to elect their leaders freely; and (v) People should be able to protest if they believe a law is unfair.





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Figure 2.1 Mean iccs civic knowledge scores (2009)

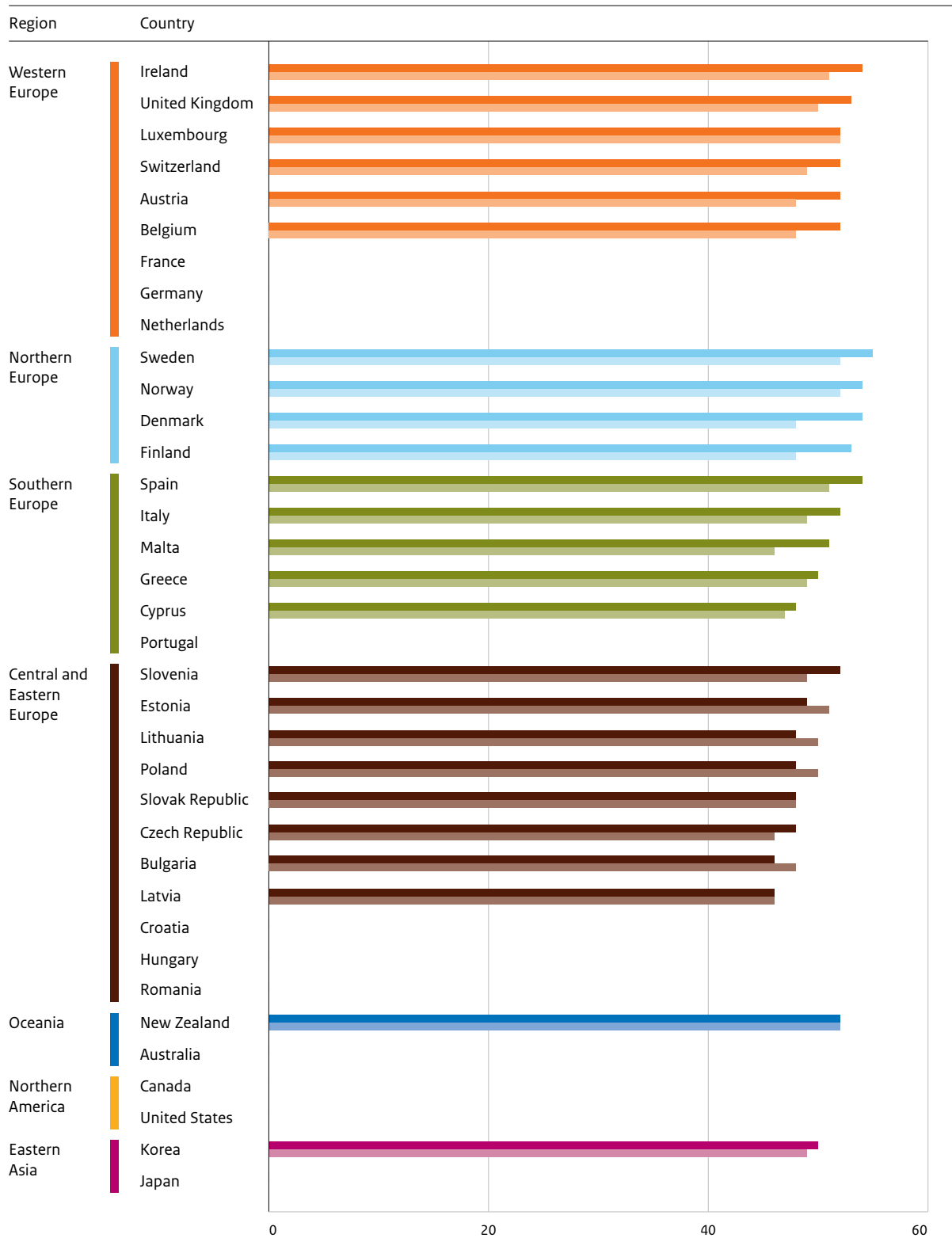


Notes: Data for the United Kingdom and Belgium relate to England and Flanders, respectively. Denmark, Switzerland, the United Kingdom (nearly), New Zealand, Norway, Belgium, and the Czech Republic met the guidelines for sampling participation rates only after replacement schools were included. In Korea, the same cohort was surveyed but the survey took place later. Source: Schulz et al. (2010).



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Figure 2.2 Mean iccs scores for attitudes towards equal rights (2009)



Notes: Data for the United Kingdom and Belgium relate to England and Flanders, respectively. Denmark, Switzerland, the United Kingdom (nearly), New Zealand, Norway, Belgium, and the Czech Republic met the guidelines for sampling participation rates only after replacement schools were included. In Korea, the same cohort was surveyed but the survey took place later. Source: Schulz et al. (2010).



As can be seen, nearly all students endorsed these democratic values, with support ranging from 88% in Malta to 96% in Korea.

### 2.1.3 Educational attainment

Our last two outcome indicators are measures of educational attainment, which are used as proxies for cognitive skills.<sup>18</sup> Figure 2.3 shows the percentage of the population of 25 to 34 year-olds with a *basic qualification* in 2013.<sup>19</sup> Figure 2.4 shows the percentage of the population of 25 to 34 year-olds who have attained *tertiary education* (Eurostat and OECD online databases).<sup>20</sup> We focus on the 25 to 34 age group because it is the most representative for people who have recently completed their education and hence best reflects the outcomes of current education (a substantial proportion of people below the age of 25 are still in education).<sup>21</sup> The main results in the two figures can be summarised as follows:

- 1 The 2013 share of 25 to 34 year-olds with a basic qualification was around 80% or more, except in four Southern European countries. It was highest in Korea and five Central and Eastern European countries.
- 2 Tertiary attainment averaged 40% in 2013. It was highest in Korea, Japan and Canada and lowest in Italy, Romania and Austria.

### 2.1.4 Educational outcome index

Having compared the performance of countries in terms of the individual outcome indicators, we next combine these indicators in a composite educational outcome *index*. The outcome index combines the following three outcome indicators: (i) the mean PISA maths score; (ii) the mean PISA reading score; and (iii) the (negative of the) percentage of the variation in PISA maths scores explained by socioeconomic status.<sup>22</sup> The index scores are presented in Figure 2.5, while the construction of the index is explained in the notes below the figure. As can be seen:

- 1 The countries in Eastern Asia (Korea and Japan) outperformed all European countries in 2012 (as well as all others). Their average scores lay around two standard deviations above the mean of the reference group.
- 2 Korea and Japan were followed by Finland, Canada and Estonia, all of which had average scores that lay around 1.4 standard deviations above the reference mean.
- 3 Performance was weakest in Bulgaria, Romania, and the Slovak Republic, with average scores that lay around one to two standard deviations below the reference mean.
- 4 Western European countries did not perform very differently on average from their peers in Northern Europe and Oceania, with scores that lay around half a standard deviation above the reference mean.

18

Although often used as proxies for cognitive skills (Mincer 1970, 1974), the two indicators discussed here could also be seen as measures of output rather than outcome.

19

Having a basic qualification corresponds to having attained at least upper secondary education (ISCED 1997 Level 3). For the Netherlands, this means having completed at least 'havo' (senior general secondary education), 'vwo' (pre-university education) or 'mbo (senior secondary vocational education) level 2,3 or 4'.

20

Having attained tertiary education corresponds to having completed ISCED 1997 levels 5a, 5b or 6. For the Netherlands, this means having completed for example a university Bachelor (5a), Masters (5a), or PhD (6) programme, an 'hbo' (higher professional) programme (5a) or a shortened hvo (5b) programme.

21

We report data for 2013 only because the figures for earlier years are in many cases not comparable with the 2013 figures.

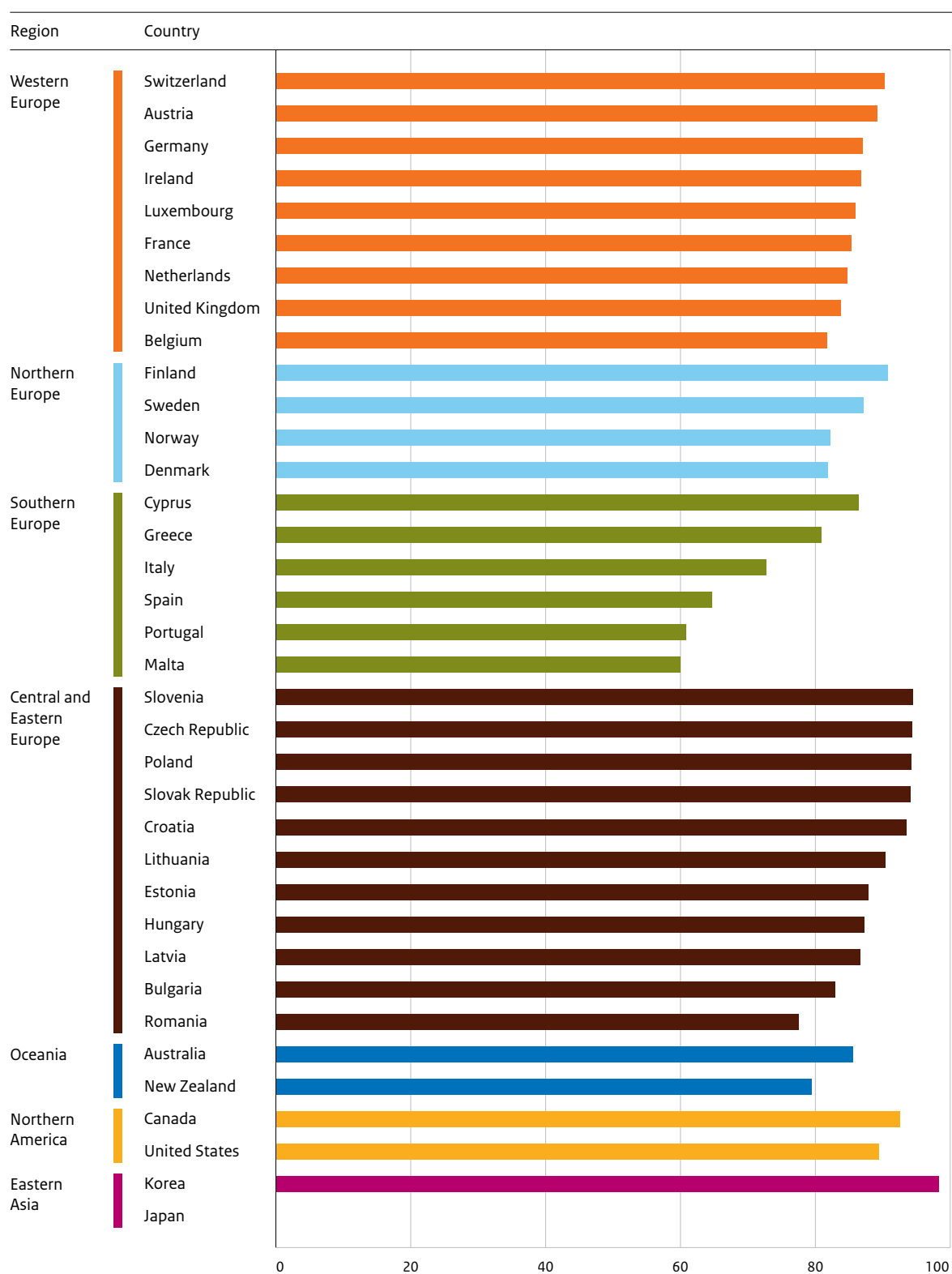
22

To ensure that the index is reasonably up to date, we include only outcome indicators that are available for 2012 and thus exclude the iccs measures. We also exclude attainment levels because they capture the quantity but not the quality of education.



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Figure 2.3 Percentage of the population of 25 to 34 year-olds with a basic qualification, 2013

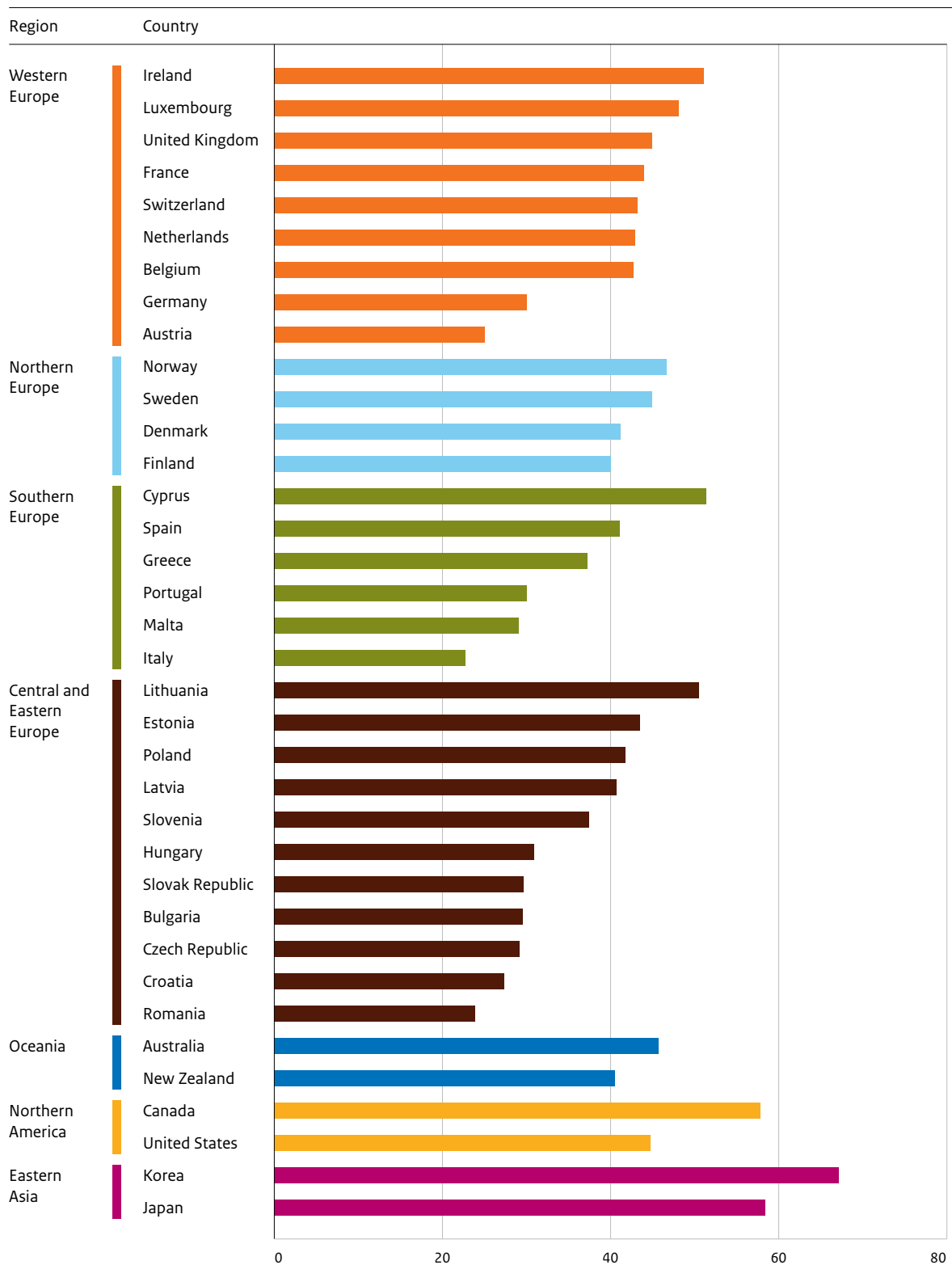


Notes: Having a basic qualification corresponds to having attained at least upper secondary education (ISCED 1997 Level 3). Source: Eurostat and OECD online databases.



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Figure 2.4 Percentage of the population of 25 to 34 year-olds attaining tertiary education, 2013

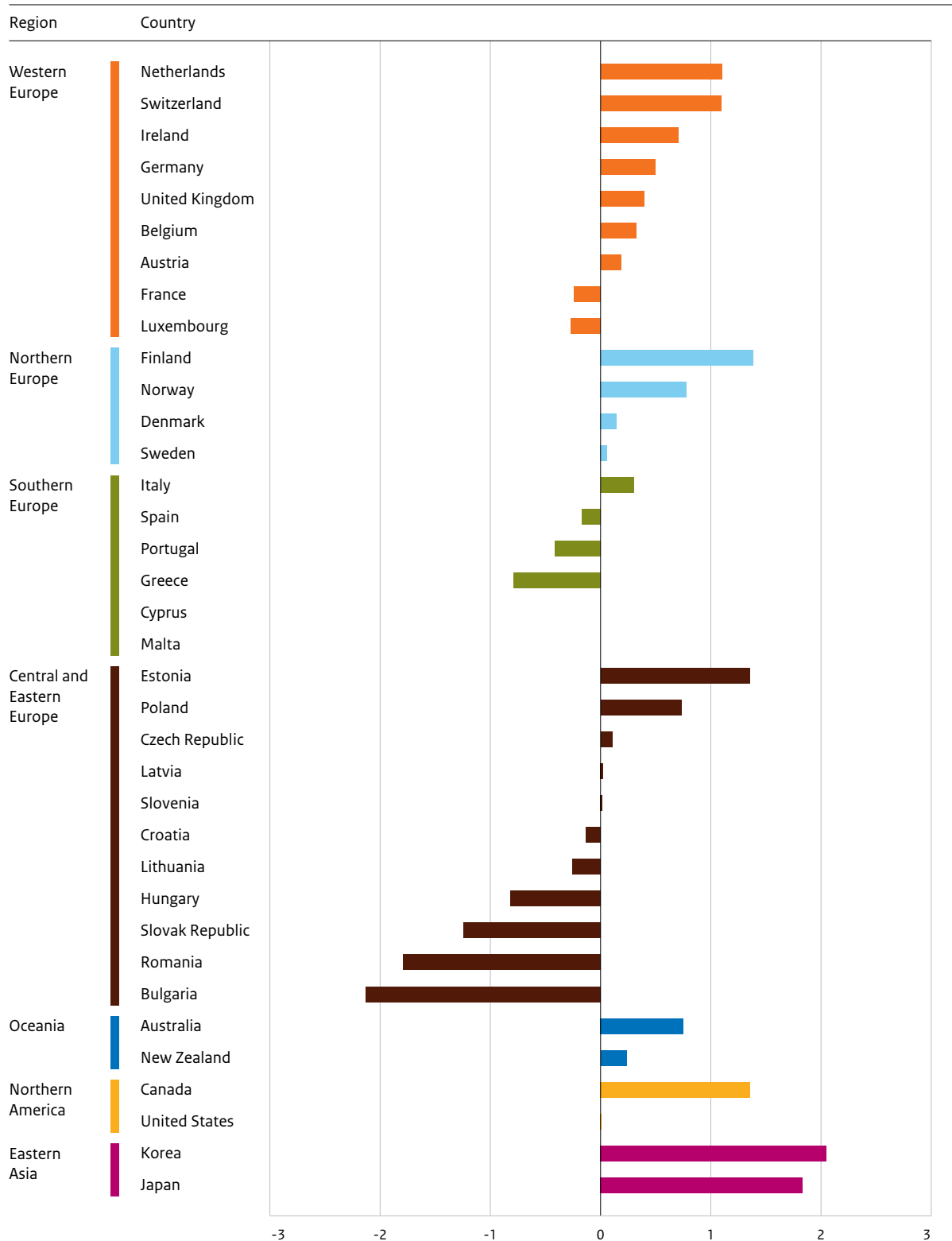


Notes: Having attained tertiary education corresponds to having completed ISCED 1997 levels 5a, 5b or 6. Source: Eurostat and oecd online databases.



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Figure 2.5 Educational outcome index, 2012 (in index scores)



The outcome index is constructed as follows. First, we identify the 24 countries with available outcome data for all sectors: AT, BE, DE, FR, GB, IE, LU, NL, DK, FI, SE, ES, IT, PT, BG, CZ, EE, HU, LT, LV, PL, RO, SI, and SK. We calculate the 2012 means and standard deviations of the three educational outcome indicators for this reference group of 24. We then compute standardised 2012 scores for each of these three indicators by subtracting the mean and dividing by the standard deviation. The educational outcome index corresponds to the average of these three standardised scores. Source: OECD (2014a, 2014b) (SCP treatment).



- 5 Central and Eastern European countries and Southern European countries performed worst on average, with scores that lay around a quarter to half a standard deviation below the reference mean.
- 6 The performance in Central and Eastern Europe was mixed, with a strong performance in Estonia and Poland but a weak performance in Bulgaria and Romania.

## 2.2 Inputs

Having compared the performance of countries in terms of the various outcome indicators, we now document how much countries invest in terms of educational *inputs*, such as spending on schools. Which countries are the biggest spenders on education and which countries spend the least, for example? Three comments are in order here. First, at this stage our analysis is purely descriptive and we do not address the possible causal impact of educational inputs on outcomes (we do this in Section 2.4 as part of our analysis of the determinants of our main outcome measure). Second, a casual inspection of the data revealed that the level of inputs in a country typically does not vary much over time. We therefore limit our presentation of the input indicators to the most recent year for which we have data. And third, we should point out that there are issues with the cross-country comparability of the input data (see the notes to Figures 2.6 to 2.9).

### *Investment in education relative to national wealth*

A straightforward way to assess how much countries invest is to look at total spending on education as a share of national wealth. Figure 2.6 reveals that:

- 1 Most countries spent between 5% and 7% of their GDP on educational institutions in 2011 (the OECD average was 6%, OECD 2014b).
- 2 The countries that spent more than 7% are Cyprus, Malta, Denmark, Korea, New Zealand and Norway. The countries that spent less than 5% are Romania, Bulgaria, the Slovak Republic, Hungary, Italy and Croatia.

### *Private spending as a share of total expenditure*

It is sometimes argued that private spending (as opposed to public spending) increases accountability and introduces incentives for efficient behaviour in schools (Woessmann et al. 2007).<sup>23</sup> In 2011, private spending accounted for 16% of all spending on educational institutions on average across OECD members (OECD 2014b).<sup>24</sup> Figure 2.7 shows the percentages for the individual countries studied in this volume and reveals a substantial degree of variation:

- 1 Private spending constituted more than 30% of all spending in Korea, the United States and Japan, but less than 3% in Norway, Finland and Sweden.

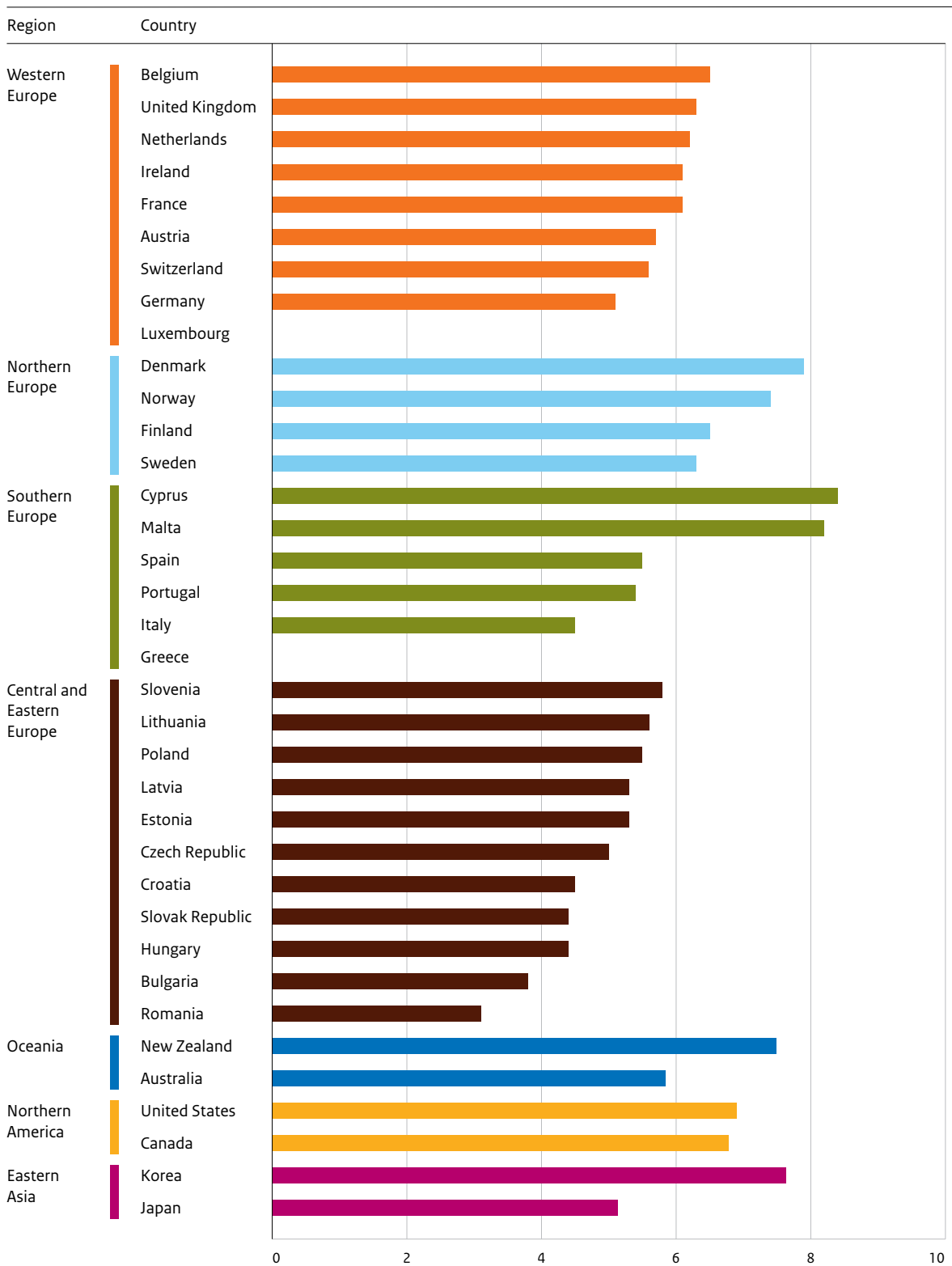
<sup>23</sup> Parents who pay tuition for their children, for example, may be more inclined to hold schools and teachers accountable than public funding bodies. In addition to private *funding*, the private *operation* of schools is also often mentioned (see Section 2.4).

<sup>24</sup> Tertiary institutions were most reliant on private funds (31% of all funds), while primary, secondary and post-secondary institutions were less reliant (8% of all funds).



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Figure 2.6 Total expenditure on educational institutions as a percentage of GDP, 2011



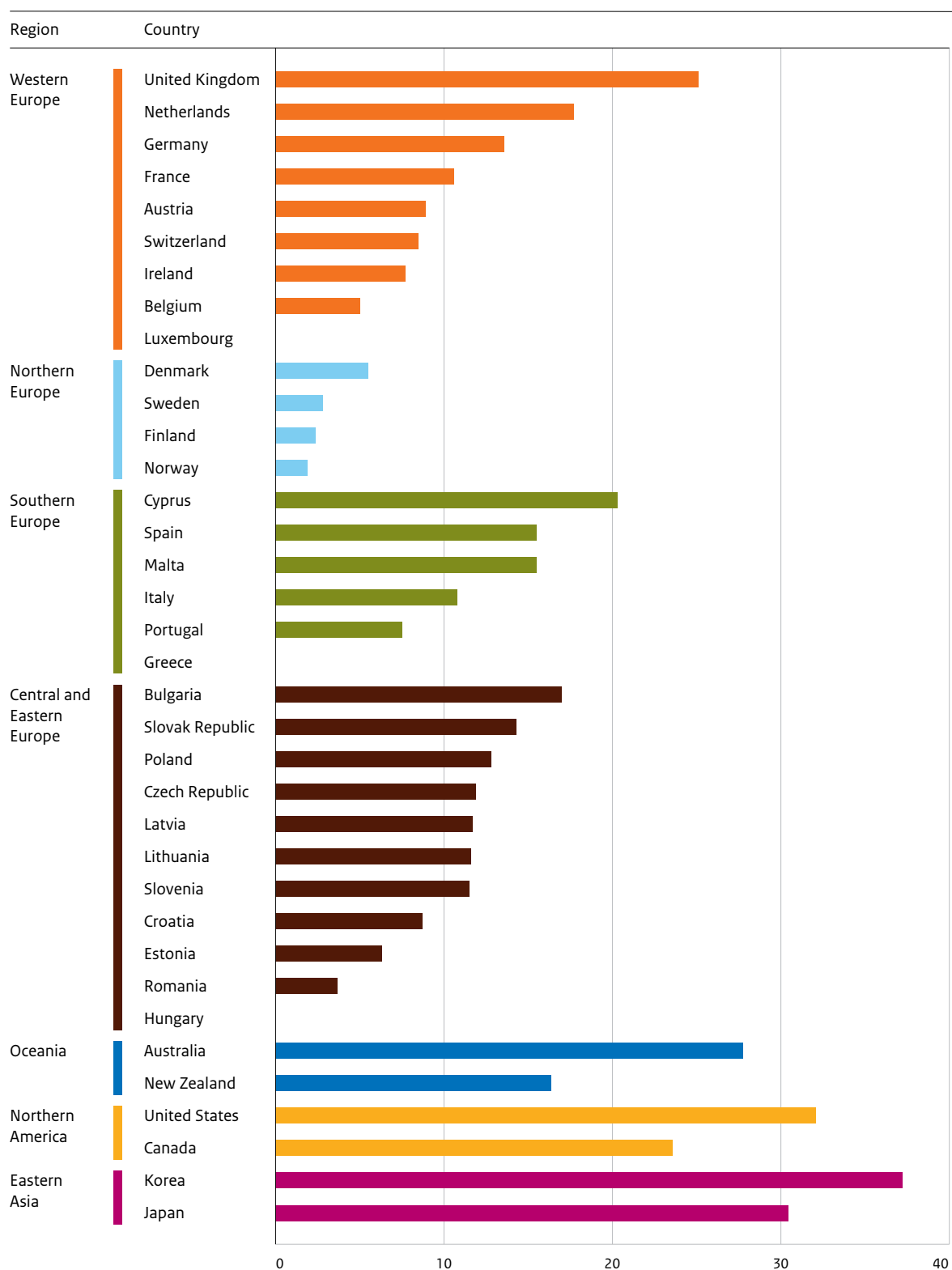
Notes: For Hungary, Norway (in primary, secondary and post-secondary non-tertiary education only) and Switzerland (tertiary education only), the data refer to public expenditures only. For Canada, the reference year is 2010. For Belgium, Denmark, Estonia, Ireland, Poland, Portugal, and the Slovak Republic, the definition differs from that used by other countries. Source: Eurostat and oecd online databases.





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Figure 2.7 Private expenditure on educational institutions as a percentage of total spending, 2011



Notes: For Canada, the reference year is 2010. For Belgium, Denmark, Norway, Poland, Portugal, the Slovak Republic and the United States, the definition differs from that used by other countries. Source: Eurostat and oecd online databases.



*How much is spent per student?*

An alternative way of assessing how much countries invest is to look at how much is spent per student. OECD members spent an average of around USD 9,500 per student per year in 2011 (OECD 2014b). Tertiary students receive most (around USD 14,000), followed by secondary students (USD 9,300) and primary students (USD 8,300). Figure 2.8 shows the numbers for the individual countries studied in this volume and reveals considerable variation:

- 1 Annual spending per student in all three types of education was lowest in Romania and Bulgaria. The countries that spent most were Switzerland and Norway (primary education), Malta, Switzerland (again) and Luxembourg (secondary education) and the United States and Canada (tertiary education).

*Employment in education as a share of the labour force*

In addition to spending, the level of investment can also be assessed by looking at the share of the potential labour force that is employed in education (Figure 2.9).

- 1 In 2013, that share was on average 5% for the countries studied in this volume. In most countries, between 3.5% and 6.5% of the potential labour force was employed in education. The only exceptions were Sweden, the United Kingdom and Denmark (> 6.5%) and Romania, Croatia and Cyprus (< 3.5%).

## 2.3 Outputs

According to the heuristic model in Chapter 1, inputs are used to produce outputs, which should then result in better outcomes. Having looked at inputs and outcomes, we now turn to educational outputs. We use four indicators for this: the enrolment rate for 15 to 19 year-olds; the entry rate into tertiary education; the upper secondary graduation rate; and the tertiary graduation rate. Since the level of outputs in a country typically does not vary much over time, our presentation of the output indicators is limited to the most recent year for which we have data. We should point out that there are issues with the cross-country comparability of the output data (see the notes to Figures 2.10 to 2.12 and A2.3).

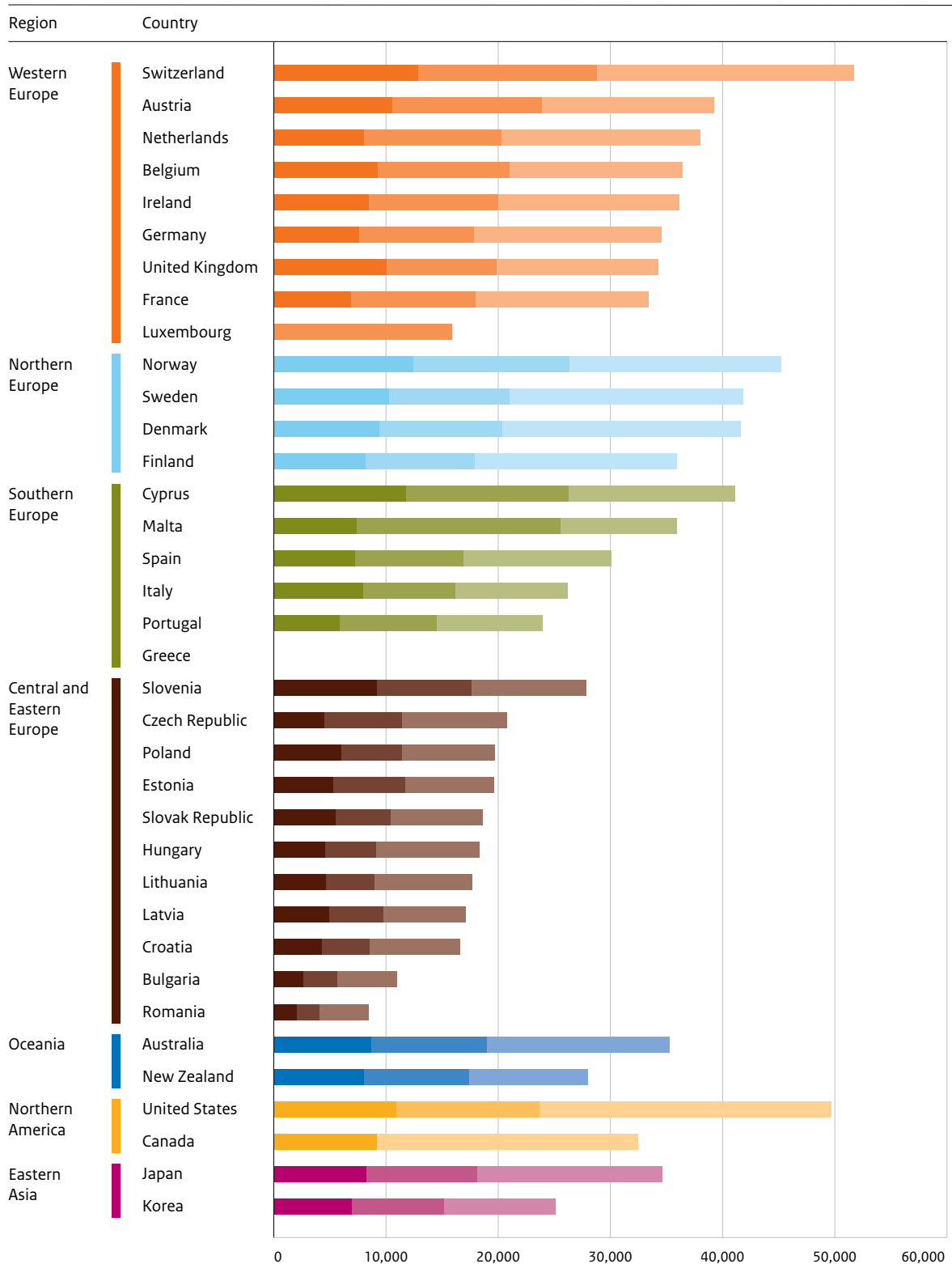
*How many 15 to 19 year-olds are enrolled in education?*

A first way of assessing the education sector's output is to look at the proportion of 15 to 19 year-olds who are being educated (the enrolment rate). In 2012, the average enrolment rate of 15 to 19 year-olds in the countries studied in this volume was 85%. Figure 2.10 shows the enrolment rates for individual countries.



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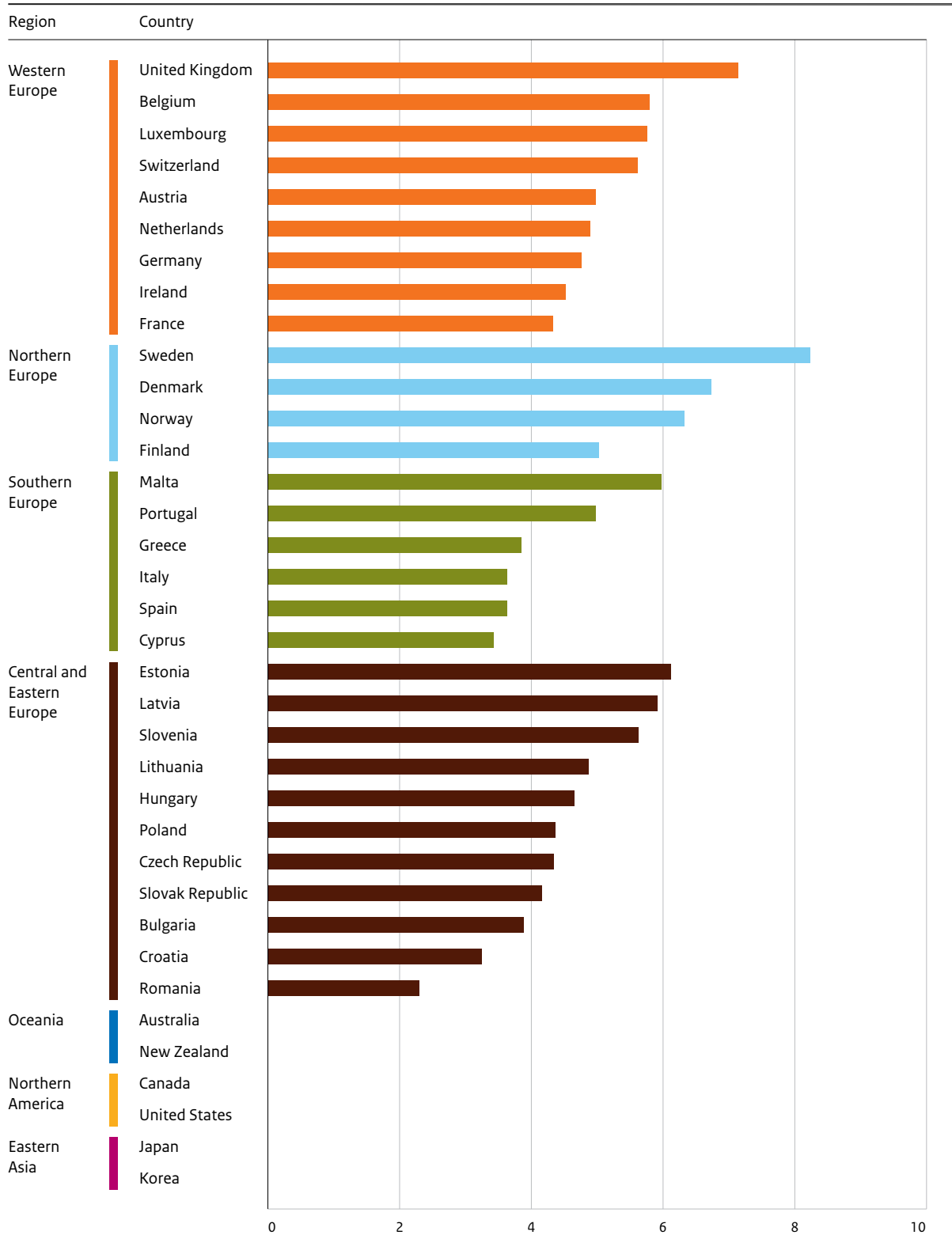
Figure 2.8 Annual (public and private) expenditure per student in primary, secondary and tertiary education in purchasing power parity (PPP) us dollars based on full-time equivalents, 2011



Notes: No data for GR, CA (secondary education) and LU (tertiary education). For LU, data for primary education are not reported due to lack of comparability. For CA (tertiary education), HU, IE, PO and CH, the data refer to public institutions only. For CA, the reference year is 2010. For BE, HR (primary and secondary education only), DK, IT (secondary education only), NO, PL, SK, SE (primary and secondary education only) and GB, the definition differs from that used by other countries. Sources: Eurostat and OECD online databases (SCP treatment).

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Figure 2.9 Employment in education as a percentage of the potential labour force, 2013

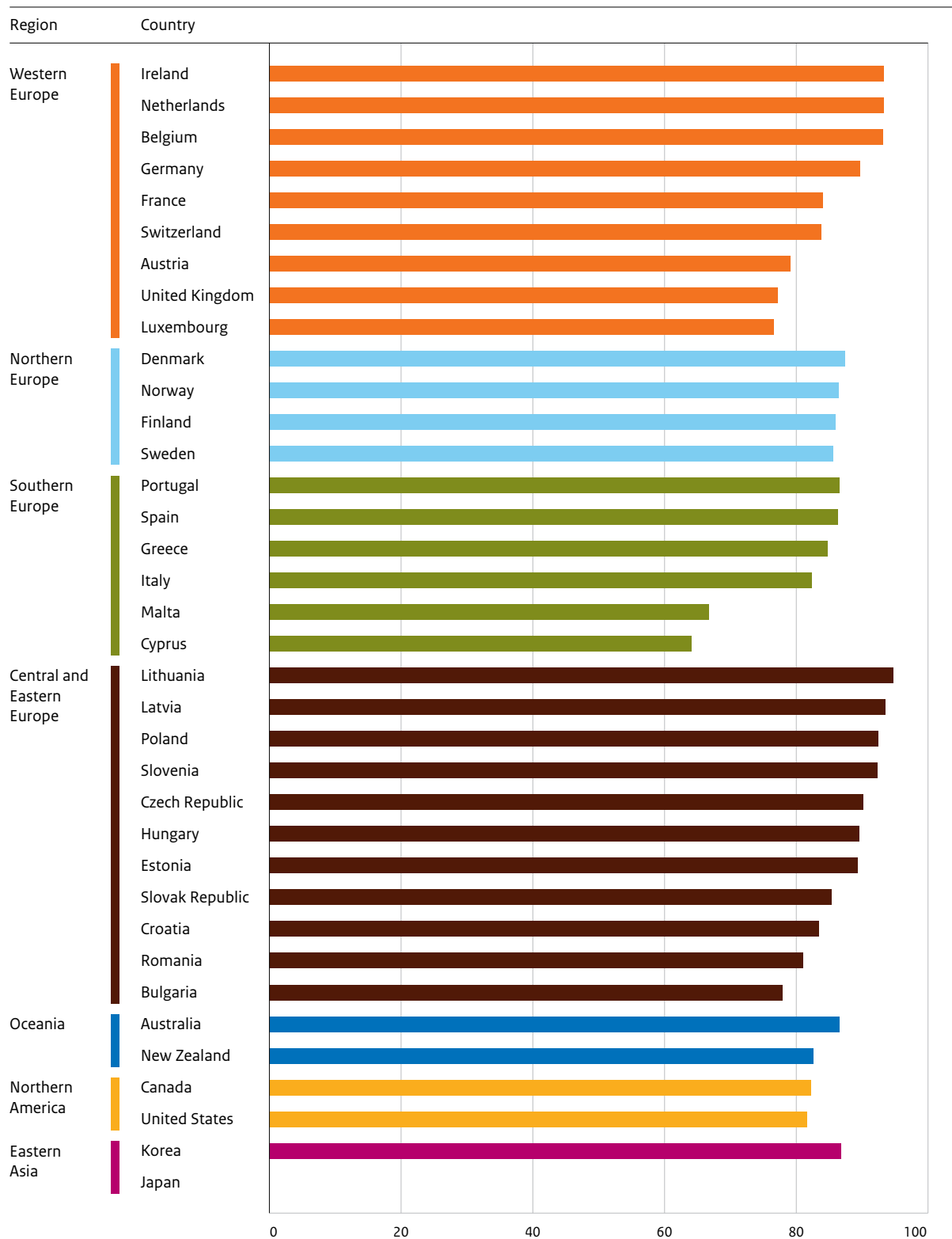


Notes: Employment in education as a percentage of the potential labour force was constructed by expressing employment in education (ages 15 to 64) from the Eurostat online database as a percentage of the population (aged 15 to 64) from the us Census Bureau.



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Figure 2.10 Number of 15-19 year-olds enrolled in education as a percentage of all 15-19 year-olds, 2012



Notes: For Canada, the reference year is 2011. Differences in the coverage of the population data and the enrolment data imply that the enrolment rates may be underestimated for countries such as Luxembourg that are net exporters of students and may be overestimated for those that are net importers. Source: Eurostat and OECD online databases.



- 1 In most of them, between 80% and 90% of 15 to 19 year-olds were enrolled in education. Countries where enrolment exceeded 90% are Lithuania, Latvia, Ireland, the Netherlands, Belgium, Poland, Slovenia and the Czech Republic. Countries with enrolment rates below 80% are Cyprus, Malta, Luxembourg, the United Kingdom, Bulgaria and Austria.

*How many students are expected to enter tertiary education?*

A second way of evaluating the education sector's output is to look at the extent to which it develops the high-level skills and knowledge needed for a modern knowledge-based economy. An important question in this context is how many students are expected to enter tertiary education. In its most basic form, the 'entry rate into tertiary education' captures the percentage of an age cohort that are expected to enter tertiary education over their lifetime. The entry rate for children aged 5, for example, represents the percentage of 5 year-olds who, at some point in their future lives, are expected to enter tertiary education. To estimate the probability of entry at each age level, information on current new entrants and their age distribution is used. In other words, the current age pattern of entry into tertiary education is used as a best estimate of the future behaviour of today's young adults (OECD 2014b). There are two practical reasons why this estimate may be artificially inflated. First, *international* students enrolling for the first time in a country are counted as new entrants, regardless of their previous education in other countries. Second, current entry rates of *older* cohorts may be higher than future entry rates because access to education for young people continuously increases (in the future, fewer people are expected to start tertiary education at a later age). To correct for these biases, we do not count international and older students. In particular, Figure 2.11 shows entry rates into tertiary education of students up to age 25, after excluding international students from the estimation (OECD 2014b). These entry rates indicate the proportion of today's young people who will have entered a tertiary education programme by the time they have reached the age of 25.<sup>25</sup> Because of the limited number of countries for which this variable is available, we also show the same entry rates when including international students in estimation:

- 1 When looking at the latter, the proportion of young people who will have entered tertiary education before the age of 26 mostly varies between 40% and 60%. In Australia, Poland, Slovenia and Latvia, this proportion is above 60%. In Luxembourg, Belgium, Switzerland, Greece, Estonia and France, it is below 40%.<sup>26</sup>
- 2 When considering the entry rates after excluding international students from the estimation, Poland and Slovenia are the only countries with entry rates above 60%. Switzerland, Austria and the United Kingdom have entry rates below 40%. The impact of international students on entry rates is most pronounced in three Anglo-Saxon countries (Australia, the United Kingdom and New Zealand).

25

In tertiary education, a distinction is made between type A and type B programmes. In some countries, a considerable proportion of students enter a type A programme after completing a type B programme.

To avoid over-counting and because type A programmes are most prevalent, we focus on entry rates into tertiary type A education. This corresponds to ISCED 1997 level 5a and, for the Netherlands, this means having completed a university Bachelor or Masters, or an 'HBO' programme, for example.

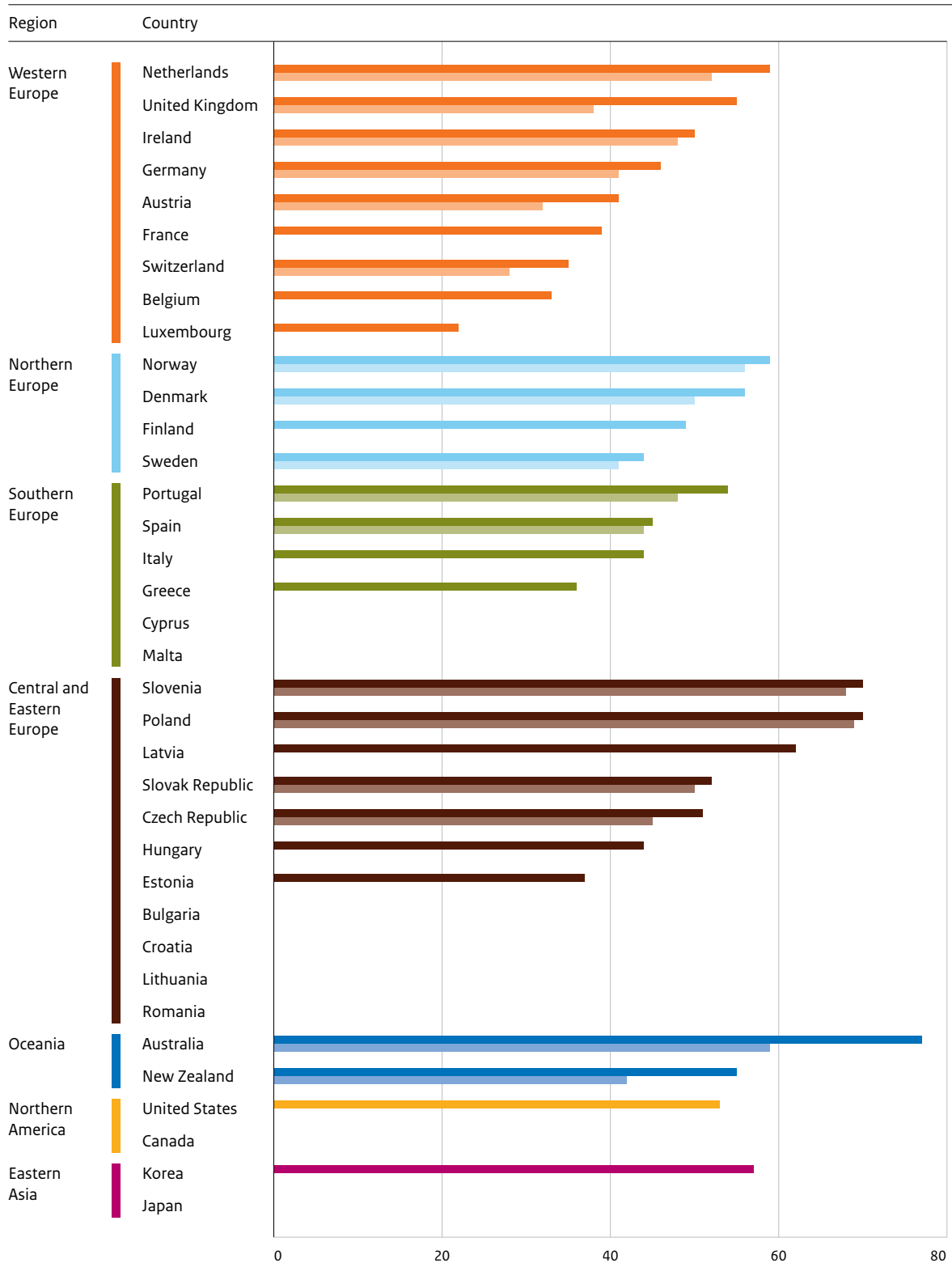
26

In Belgium, the entry rate into type B programmes is higher than the entry rate into type A programmes, and hence counterbalances Belgium's relatively low type A entry rate.



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Figure 2.11 Entry rates into tertiary type A education of students up to age 25, 2012 (in percentages)

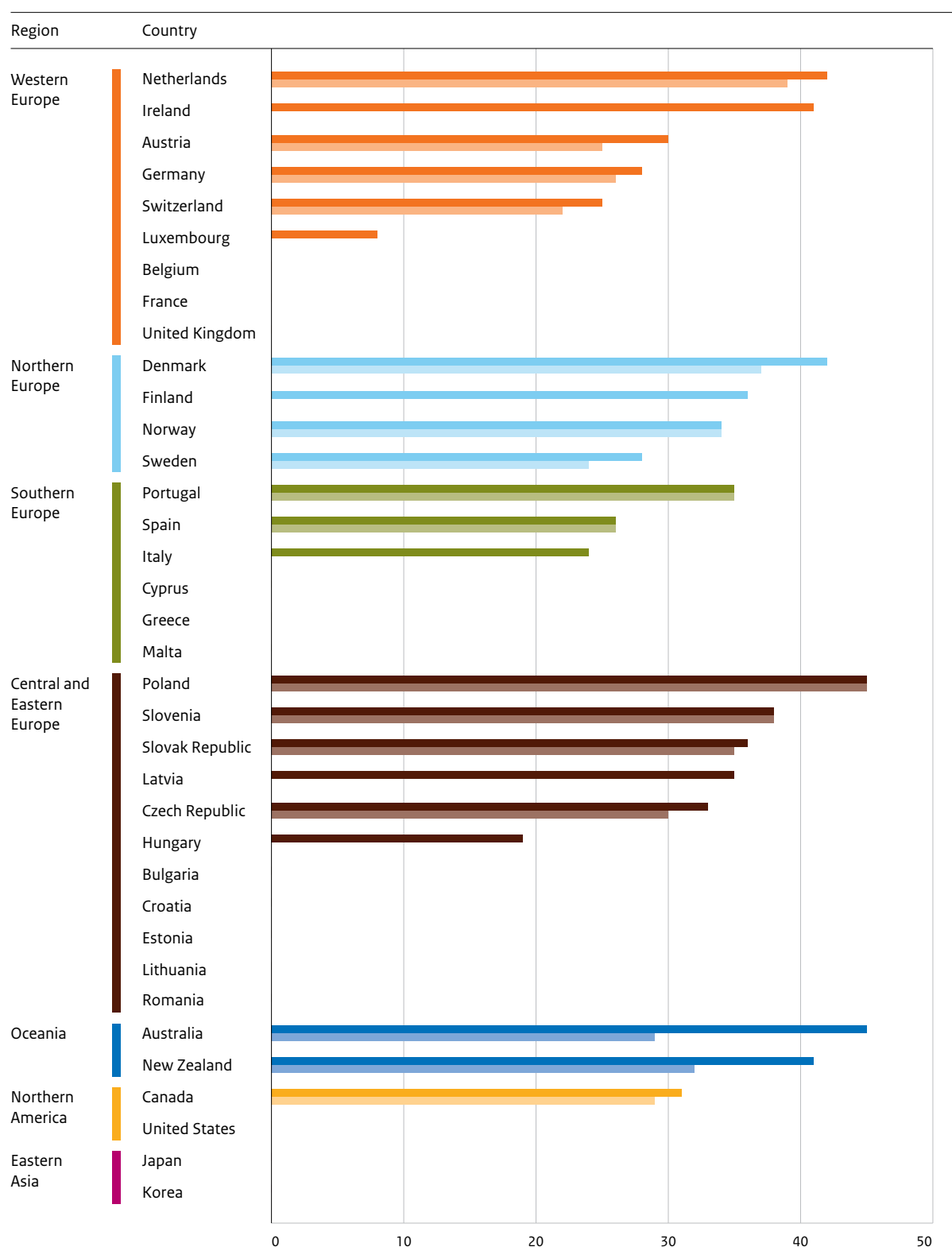


Notes: The net entry rates reported in this figure represent the proportion of members of a synthetic age cohort who enter tertiary type A education before the age of 26. The net entry rate is defined as the sum of net entry rates for single ages. The total net entry rate is therefore the sum of the proportions of new entrants to tertiary type A aged *i* to the total population aged *i*, at ages ≤ 25 (OECD 2014b, Annex 3, p. 16). Source: OECD (2014b).



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Figure 2.12 Tertiary graduation rates (type A, first-time graduates) among students up to age 30, 2012 (in percentages)



Notes: The net graduation rates reported in this figure represent the proportion of members of a synthetic age cohort who graduate (for the first time) from a tertiary type A programme before the age of 31. The net graduation rate is defined as the sum of net graduation rates for single ages. The total net graduation rate is therefore the sum of the proportions of (first-time) tertiary graduates type A aged  $i$  to the total population aged  $i$ , at ages  $\leq 30$  (OECD 2014b). Source: OECD (2014b).

■ including international students ■ excluding international students





*How many students are expected to complete tertiary education?*

Entry into a tertiary education programme, while of interest, does not necessarily imply that students will complete the programme. To assess how many students complete tertiary education, we next look at tertiary *graduation rates*, which capture the percentage of an age cohort that are expected to complete a tertiary education programme over their lifetime. Similar to the case of entry rates, the current age pattern of graduation is used as a best estimate of the future behaviour of today's young adults (OECD 2014b). Again similar to the case of entry rates, graduation rates may be artificially inflated by international students and older students, who are consequently not counted here. Figure 2.12 shows tertiary graduation rates among students up to age 30, after excluding international students from the estimation (OECD 2014b). These graduation rates indicate the proportion of today's young people who, by the time they have reached 30, will have completed a tertiary education programme.<sup>27</sup> Owing to the limited number of countries for which this variable is available, we also show the same graduation rates after including international students in the estimation:

- 1 When looking at the latter, the proportion of young people who will have completed a tertiary education programme before the age of 31 mostly varies between 20% and 40%. In Australia, Poland, Denmark, the Netherlands, Ireland and New Zealand, this proportion is above 40%. In Luxembourg and Hungary, it is below 20%.<sup>28</sup>
- 2 When considering the graduation rates after excluding international students from the estimation, Poland is the only country with a graduation rate above 40%. The impact of international students on graduation rates is most pronounced in two Anglo-Saxon countries (Australia and New Zealand).

*How many students are expected to complete upper secondary education?*

While tertiary education matters mostly for the development of high-level skills and knowledge, *upper secondary education* is important both as a minimum requirement for entry into the labour market and as a prerequisite for further education.<sup>29</sup> Figure A2.3 in the appendix to this chapter shows the upper secondary graduation rate, which captures the percentage of today's young people that are expected to complete upper secondary education over their lifetime:

- 1 In 2012, this graduation rate was 87%; the average across the countries studied in this volume with available data (OECD average was 84%, OECD 2014b).
- 2 For individual countries, the graduation rate ranged from 68% to 96%. Countries where more than 90% of young people are expected to complete upper secondary education are Slovenia, Germany, the Netherlands, Hungary, Ireland, the United Kingdom, Japan, Spain, Finland, Denmark, Korea and Latvia. Countries with graduation rates slightly below 70% are Austria and Luxembourg.

<sup>27</sup> We focus on type A programmes for the same reasons as in the case of entry rates.

<sup>28</sup> The relatively low percentage for Luxembourg may be due to the large number of students studying abroad.

<sup>29</sup> Upper secondary education corresponds to ISCED 1997 Level 3.



## 2.4 Explaining student test scores

Having documented and compared educational inputs, outputs and outcomes, we may ask whether and how these variables are related. For example, do inputs (such as spending per student) causally affect outcomes? A broader question is what determines educational outcomes more generally. Is it mostly due to individual student characteristics or family background? Are school inputs important? And what is the role of institutional features, such as the degree of school autonomy? Questions such as these are essential for policymakers. In this section we explore the determinants of our main outcome variable: cognitive skills (identified by student test scores). According to Hanushek and Woessmann (2010), cognitive skills as reflected in test scores are a good indication of relevant skills for human capital and have large effects on long-term economic growth. We investigate the determinants of cognitive skills by first reviewing the empirical economic literature and then performing an exploratory statistical analysis.<sup>30</sup>

### 2.4.1 A review of the economic literature on the determinants of international differences in student test scores

The economic literature on the determinants of international differences in student test scores has grown quickly over the last two decades due to the enormous progress in data collection and availability. Hanushek and Woessmann (2010) review this literature and discuss three groups of determinants: (i) student and family background characteristics; (ii) school inputs; and (iii) institutional features of schools and education systems. This section draws heavily on Hanushek and Woessmann (2010), Hanushek and Woessmann (2014), and Hanushek, Piopiunik and Wiederhold (2014).<sup>31</sup>

#### *Methodological challenges*

Estimating causal effects on student test scores poses methodological challenges. The concern most often voiced by economists is that the estimates obtained cannot be given a causal interpretation. This is because the indicators may be correlated with unobserved student characteristics (such as individual ability), so that we cannot be sure that we are capturing the effect of the factor in question, for example government spending, and not the effect of unobserved characteristics.<sup>32</sup> But the problem can also be due to causation running in the reverse direction or to error in measuring the indicators. In all these cases, causality cannot be established and hence research cannot inform policymakers on which educational policies work and which do not.<sup>33</sup>

In the light of the above, and following Hanushek and Woessmann (2010), we distinguish between (i) descriptive studies that document *associations* between variables but do not necessarily identify causal links; and (ii) studies that use more elaborate strategies to identify *causal* effects of

<sup>30</sup> We focus on *mean* test scores. For a discussion of the determinants of within-country *inequality* in test scores, see e.g. Van de Werfhorst and Mijs (2010) and OECD (2010a).

<sup>31</sup> A comprehensive review of all relevant literature in all relevant fields (sociology, economics, psychology, etc.) is beyond the scope of this chapter. Instead, we focus on the recent and most relevant literature in economics. For an earlier account of the factors that are considered effective in fostering education, see for example Scheerens and Bosker (1997).

<sup>32</sup> A similar problem occurs when students self-select into private schools, in which case it is unclear whether observed differences are caused by the type of school or are simply due to different types of students going to private schools.

<sup>33</sup> Endogeneity is by no means the only concern when estimating effects on test scores. Psychologists, for example, often point to measurement problems (reliability and validity). To some extent, the two concerns are related, as measurement error in the explanatory variables constitutes one type of endogeneity.



particular variables. Below we briefly summarise the findings of the descriptive studies and discuss a few leading examples of studies that aim to identify causal effects.

*Do student and family background characteristics affect student test scores?*

Student and family background characteristics have long been viewed as an important determinant of student performance. In fact, the influential 1966 Coleman report, published by the U.S. Government, already demonstrated statistically that educational outcomes were much more a reflection of a student's friends and family than of the inputs supplied by the government (Coleman et al. 1966, Fukuyama 2014). In a cross-national context, the extent to which student test scores are explained by student and family background provides an indication of the inequality of opportunity of children from different social backgrounds. Table 2.4 in Section 2.1.1 showed the proportion of variation in PISA test scores that is explained by socioeconomic status (as a measure of inequality). It revealed that inequality is lowest in Norway, Finland and Canada, where socioeconomic status explains less than 10% of the variation in student test scores, and highest in the Slovak Republic, Hungary and France, where it explains up to 25%. In addition to inequality, the extent to which student and family background characteristics explain test scores also reflects the (lack of) intergenerational mobility in a society (Hanushek and Woessmann 2010).

Hanushek and Woessmann (2010) provide a detailed overview of descriptive studies that estimate the relationship between student/family background variables and student test scores. In summary, these studies confirm the two observations above:

- 1 Student test scores differ substantially by student and family background.
- 2 The extent to which test scores differ by student and family background varies substantially across countries.

As explained above, while informative, the descriptive studies do not identify the underlying causal mechanisms. To address this shortcoming, several authors have employed more involved identification strategies to obtain better estimates of causal effects.

*The role of parents*

Starting from the observation that better-educated parents have better-educated children (Haveman and Wolfe 1995), Holmlund et al. (2011) investigate why this is the case. Is it because parents with higher ability have more able children (nature)? Or is it because education generates resources that help parents in fostering the education of their children (nurture)? Based on their reading of the empirical literature and the various identification strategies employed, Holmlund et al. (2011) conclude that more than half the educational persistence across generations is explained by nature (inherited abilities), with the remainder being explained by nurture.



The causal effect of parental schooling, while small, constitutes a large part of the nurture component.

#### *Being younger than classmates*

Bedard and Dhuey (2006) explore the fact that, due to the use of a single cut-off date for school enrolment, children enter school at somewhat different ages. They show that these initial age differences have long-lasting effects on student performance. The youngest members of a cohort score lower than the older members in grades 4 and 8 (age 9-10 and 13-14, respectively) and are less likely to go on to high-end universities. In short, being young compared to classmates early in life puts children at a disadvantage which persists into adulthood.

#### *Peer effects in primary schools*

Ammermueller and Pischke (2009) estimate peer effects in primary schools in six European countries. In particular, they ask whether, in addition to a child's own personal and family characteristics, the characteristics of the child's peers (classmates) also affect their performance. The difficulty in estimating peer effects is the observation that schools and classrooms are typically not formed randomly, so that the estimated effects may capture unobserved characteristics of pupils rather than peer effects. Ammermueller and Pischke (2009) argue that, *within* a given school (and only in *primary* schools, where pupils have not yet allocated to different educational tracks), the allocation of children over different classes is fairly random. Looking at the within-school variation in the characteristics of classmates across different classes, Ammermueller and Pischke (2009) find moderately large peer effects. Hence, perhaps unsurprisingly, the development of young children's cognitive skills depends to some extent on their peers in class.

#### *Do school inputs matter for test scores?*

According to the heuristic model presented in Chapter 1, the public sector provides inputs that are used to produce output. More output should then result in better outcomes. In line with this model, empirical research has focused a lot of attention on estimating the effects of educational inputs on student test scores. From a public policy perspective, this avenue of research is particularly important, as it informs policymakers on whether education policy does indeed contribute to the development of cognitive skills, and if so by how much.

In Section 2.2 we compared countries in terms of various measures of educational inputs. Hanushek and Woessmann (2010) provide a review of descriptive studies that analyse the relationship between school inputs and student test scores. The school input measures studied include expenditure per student, class size, availability of instructional material and teacher characteristics. In summary, the studies find that:



- 1 Quantitative measures of school inputs such as expenditure per student and class size do not explain the cross-country differences in student test scores.
- 2 By contrast, several studies document positive associations of student test scores with the quality of instructional material and the quality of teachers.

As before, these descriptive studies, while informative, do not necessarily indicate causality. Several studies have attempted to identify causal effects using more elaborate identification strategies.

#### *The effect of class size*

Hanushek and Woessmann (2010) point out that most progress has been made in estimating the effects of *class size* on student performance. Woessmann and West (2006), for example, investigate the variation in class size that is caused by natural fluctuations in the size of subsequent age cohorts of a school (similar to Hoxby 2000). As long as differences in the number of students per age cohort within a given school are random, this strategy yields good causal estimates.

In an alternative attempt to isolate exogenous variation in class size, Woessmann (2005), following Angrist and Lavy (1999), uses the fact that ten Western European countries impose maximum class-size rules. As long as the number of students in a school is not close to a multiple of this maximum, average class size in a school increases with the number of students in a given school year group. But when the number of students increases beyond a multiple of the maximum class size, average class size will drop. It is this latter variation that is exploited to obtain causal estimates of the effect of class size.

Finally, the third attempt to obtain random variation uses only the class-size variation between different school subjects for a given student (Altinok and Kingdon 2012, Dee 2005). In this case, the causal effect is identified simply from comparing the performance of the same student in different subjects (and corresponding differently sized classes).

The estimated effects are similar in all three approaches. In short, the studies find no strong effects of class size on student performance in most countries. Class size seems to be most beneficial in countries with low teacher quality. The latter finding suggests that only the relatively capable teachers do as well when teaching large classes as when teaching small classes (Hanushek and Woessmann 2010).

#### *The importance of teacher quality*

Progress has been more limited in estimating the causal effects of teacher quality on student test scores. Hanushek, Piopiunik and Wiederhold (2014) estimate the effect of the *cognitive skills* of teachers on student performance.



They exploit the idea that, in countries where non-teacher public-sector employees are paid more (relative to their private-sector counterparts), the public sector attracts workers (including teachers) with higher levels of cognitive skills. Using this variation in teacher cognitive skills, the authors find that such skills are indeed an important determinant of international differences in student test scores.

*Do institutional features of schools and education systems affect test scores?*

Governments not only provide educational inputs (spending, materials, teachers) but also shape the institutional design of the education sector. According to North (1990), “Institutions are the rules of the game in society or, more formally, are the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social, or economic...” A large body of literature has focused on estimating the effect of institutional features of schools and education systems on student test scores. Hanushek and Woessmann (2014) review this literature and discuss the following three institutional features: (a) accountability measures; (b) school autonomy; and (c) competition from private schools.<sup>34</sup>

#### *Accountability*

The accountability device that has received most attention is the presence of *curriculum-based external exit examinations*. These are examinations where a decision-making authority external to the school has full responsibility for or gives final approval of the content of examinations. In the absence of such external examinations (i.e. when teachers in each school are responsible for examination content), the performance of students cannot easily be compared across classes and schools. External examinations facilitate monitoring of the performance of students, teachers and schools. They also increase the scope for students to signal their achievements to future employers or higher education institutions. Both imply more accountability (Woessmann et al. 2007, Hanushek and Woessmann 2014).

Hanushek and Woessmann (2014) provide an overview of descriptive studies that estimate the relationship between external exit examination systems and student test scores. Based on these studies, they draw the following conclusions:

- 1 Students in countries that have external exit examination systems score substantially higher than students in countries without external examination systems.
- 2 The evidence suggests that the effect may well be larger than a whole grade-level equivalent.

Again, the descriptive studies do not definitively establish causality. Jürges, Schneider and Büchel (2005) use the fact that, in some German secondary school tracks, the federal states with centrally set exit examinations use them in math but not in science. This allows the authors to compare the test scores in maths (a subject *with* central exit examinations) to the test

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In addition, Hanushek and Woessmann (2014) discuss school tracking (which has been studied mostly in terms of the equity of student test scores) and pre-school education.



scores in science (a subject *without* central exit examinations) for one and the same student. The results confirm the positive and substantial effect of central exit examinations on test scores (although the size of the effect is smaller than in the descriptive studies).

Hanushek and Woessmann (2014) also briefly review studies that analyse other accountability mechanisms (the results reported here stem first and foremost from the study by Woessmann et al. 2007). The first mechanism involves the monitoring of teacher-led lessons by the school principal or internal staff, or by external inspectors. The results show positive associations of student test scores with both internal and external monitoring of teachers.

The second accountability mechanism uses assessments of student achievement to compare the performance of schools within the same district or country. Being able to compare schools increases accountability. The empirical results show that student test scores are indeed higher when schools use assessments to compare themselves to district or national performance.

The third accountability mechanism uses assessments of student achievement to decide on students' retention or promotion, thus creating incentives for students to perform well. The results indicate that students perform substantially better in countries where a larger share of schools use assessments for retention or promotion (Woessmann et al. 2007).

Finally, the fourth accountability mechanism uses assessments of student achievement to group students for instructional purposes. According to Woessmann et al. (2007), the share of a country's schools that use assessments to group students provides a crude measure of the extent of tracking that goes on within schools. In contrast to the other accountability mechanisms, this type of accountability is associated with *lower* student test scores (Woessmann et al. 2007). This is consistent with earlier results in the literature. The negative effects of ability grouping or tracking could reflect the notion that lower-ability students suffer disproportionately from slower learning environments that leave them far behind high-ability students (Hanushek and Woessmann 2006).

Table 2.5 for each country documents the presence or absence of each of the accountability mechanisms described above (in 2012). The variable 'External exams' indicates the extent to which standards-based external examinations for students in secondary education exist in the system. The variables 'Assessments used for retention/promotion', 'Assessments used to compare schools' and 'Assessments used to group students' indicate the percentages of students in schools whose principal reported that assessments of 15 year-old students are used to decide on students' retention or promotion, to compare schools to district or national performance and to group students for instructional purposes, respectively. The variable





'Monitoring of lessons by principal' ('Monitoring of lessons by external inspectors') indicates the percentage of students in schools whose principal reported that the principal or senior staff (inspectors or other externals) have monitored maths teachers by observing lessons.

#### *School autonomy*

Another institutional feature discussed by Hanushek and Woessmann (2014) is school autonomy. Schools, they argue, have an informational advantage over regional and national authorities when it comes to their own students, staff and local conditions. Giving schools more responsibility for school policy and management could therefore improve student outcomes. On the other hand, when the interests of schools are not aligned with improving student outcomes, more autonomy may instigate opportunistic behaviour, unless schools are held accountable for the performance of their students.

Hanushek and Woessmann (2014) provide an overview of descriptive studies that estimate the impact of school autonomy on student test scores.

Based on these studies, they conclude the following:

- 1 Students score substantially higher in schools that have autonomy when it comes to process and personnel decisions (such as the decision to purchase supplies, allocate the budget, and hire and reward teachers (within a given budget), and the choice of textbooks and methods of instruction).
- 2 By contrast, students score lower in schools that have autonomy in setting the budget and choosing the subject matter to be taught in class (two areas of decision-making that, according to Hanushek and Woessmann 2014, give rise to opportunistic behaviour but do not involve much superior local knowledge).
- 3 In addition to these average effects, the descriptive studies also suggest important cross-country differences. The effect of for example school autonomy over teacher salaries on student test scores seems negative in systems that do not have external exit examinations, but positive in systems that do have external exit examinations. The size of the effects indicates that moving from the worst possible system (with autonomy but without external examinations) to the best (with autonomy and with external examinations) improves test scores by no less than three quarters of a standard deviation. Similar interactions have been found for school autonomy in determining course content and teacher influence on resource funding. Intuitively, what these results suggest is that autonomy leads to lower test scores if it is not accompanied by external examinations that hold schools accountable for test scores, but leads to higher test scores if it is accompanied by external examinations.

As before, these findings do not necessarily imply causality. Hanushek, Link and Woessmann (2013) attempt to address some of the concerns by constructing a panel dataset and exploiting variation over time. Their





results suggest that school autonomy affects test scores negatively in developing and low-performing countries, but positively in developed and high-performing countries. They also confirm that granting schools autonomy works better in combination with accountability (central exit examinations) that limits opportunistic behaviour.

Table 2.5 documents for each country the extent to which schools are autonomous in the areas of formulating the budget, establishing the starting salaries of teachers, determining course content and hiring teachers (in 2012).

The variables ‘Formulating budget’, ‘Establishing starting salaries’, ‘Determining course content’ and ‘Hiring teachers’ indicate the percentages of students in schools where the principal reports that schools have a main/substantial responsibility for the following aspects of school policy and management, respectively: formulating the school budget, establishing teachers’ starting salaries, determining course content and appointing teachers.

#### *Competition from private schools*

A third institutional feature discussed by Hanushek and Woessmann (2014) relates to the scope for private-sector involvement in schools, and the degree to which state schools face competition from private schools. According to Hanushek and Woessmann (2014), it is important to distinguish between the private (as opposed to public) *operation* of schools and the private (as opposed to public) *funding* of schools. Privately operated schools are managed directly or indirectly by a non-government organization such as a church, trade union or business. By contrast, private funding of schools refers to funding from private contributions such as fees and donations.

When estimating the general impact of privately operated schools on student test scores, simply comparing the test scores of students between private and state schools within a given country is problematic. First, any observed difference may reflect the non-random selection of students into private schools rather than a causal effect of private operation. Second, if the introduction of privately operated schools does indeed increase competition, the performance of *both* state and private schools may improve (Hanushek and Woessmann 2014). To address these concerns, a number of cross-country studies estimate the effect of the *country-level* share of privately operated schools on average student test scores. Based on these studies, Hanushek and Woessmann (2014) conclude the following:

- 1 On average, students perform better in countries where a larger share of schools are privately operated.
- 2 On average, students perform worse in countries where a larger share of school funding is private.



Hence, students perform best in countries that combine high shares of privately operated schools with high shares of public funding. The reason, according to Hanushek and Woessmann (2014), may be that public funding helps poorer parents exert their choice in terms of privately operated schools. In the absence of such funding, those parents may remain constrained because they do not have the financial means to send their children to a private school.

Related to the argument above, Woessmann et al. (2007) demonstrate that students in countries where public funding is equally divided between privately and publicly operated schools score higher than students in countries where privately operated schools receive less public funding than state schools. According to Hanushek and Woessmann (2014), this suggests that a level playing field in terms of allocating public funding between state and private schools may be an important precondition for the competitive effects of private schools to materialise.<sup>35</sup>

While informative, these studies do not address all causality concerns. In an attempt to generate better estimates, West and Woessmann (2010) use a historical natural experiment. Specifically, they argue that, in countries with a large share of Catholics in 1900 (but where Catholicism was not the state religion), resistance against state schools was stronger than in countries with a small share of Catholics. This resistance resulted in a larger share of privately operated schools and this effect has continued until the present day. Based on this variation, West and Woessmann (2010) confirm a significant positive effect of the share of privately operated schools on student test scores. They also demonstrate that much of this positive effect accrues to students in state schools. This supports the notion that the overall effect is not simply due to privately operated schools performing better, but rather reflects improvements in the performance of *both* state and private schools. Interestingly, West and Woessmann (2010) also find that a larger share of privately operated schools reduces educational expenditure per student. Hence, private competition boosts productivity, both by improving outcomes and by lowering inputs.

Table 2.5 documents for each country the percentage of students in privately operated schools and the percentage of the total funding of students' schools that comes from government sources (in 2012).

The variable 'Private schools' indicates the percentage of students in privately operated schools (as opposed to publicly operated schools). The variable 'Government funding' indicates the percentage of the total funding of students' schools that comes from government sources.

35 The importance of publicly funding private schools is also shown by Corten and Dronkers (2006), who distinguish between privately operated schools that depend on public funding and privately operated schools that do not. They compare the performance of students with low socioeconomic status in both types of private school to the performance in state schools and demonstrate that only government-dependent private schools outperform state schools.



## EDUCATION

Table 2.5 Institutional features of school systems (2012)

Region	Country	Accountability					
		External exams	Assessments used for/to retention and promotion	compare schools	group students	Monitoring of lessons by	
						principal	external inspectors
Western Europe	Austria	0	94	28	31	74	29
	Belgium	0	96	23	17	65	48
	France	.	96	62	43	12	73
	Germany	35	96	43	39	67	22
	Ireland	100	62	77	81	13	48
	Luxembourg	100	94	74	41	48	6
	Netherlands	100	98	70	61	87	42
	Switzerland	0	86	41	40	83	29
	United Kingdom	100	69	96	96	97	68
Northern Europe	Denmark	100	10	55	52	64	17
	Finland	100	93	46	17	31	2
	Norway	100	1	68	48	48	11
	Sweden	0	43	90	25	80	27
Southern Europe	Cyprus	.	.	.	.	.	.
	Greece	0	98	17	8	8	21
	Italy	100	87	65	53	17	1
	Portugal	0	98	85	40	60	4
	Spain	0	95	44	47	10	15
	Malta	.	.	.	.	.	.
Central and Eastern Europe	Bulgaria	100	65	86	39	97	49
	Croatia	100	88	66	52	93	34
	Czech Republic	100	79	58	33	98	33
	Estonia	100	82	65	21	90	8
	Hungary	100	69	78	47	97	13
	Latvia	100	97	92	38	100	41
	Lithuania	100	85	61	53	98	38
	Poland	100	98	58	55	94	16
	Romania	78	70	68	57	73	58
	Slovak Republic	100	93	64	38	98	27
	Slovenia	100	93	59	26	94	5
Oceania	Australia	81	63	56	84	70	11
	New Zealand	100	77	93	94	97	32
Northern America	Canada	51	95	82	74	82	21
	United States	7	57	94	74	100	42
Eastern Asia	Japan	100	90	17	45	81	26
	Korea	100	56	70	86	96	68

Source: OECD (2010b, 2012 and 2013).



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Table 2.5 Institutional features of school systems (2012) (continued)

Country	Autonomy				Choice	
	Formulating budget	Establishing starting salaries	Determining course content	Hiring teachers	Privately operated schools	Government funding
Austria	30	7	74	54	9	.
Belgium	79	4	75	90	.	87
France	80	3	83	30	17	.
Germany	15	2	72	64	5	95
Ireland	76	4	72	87	56	90
Luxembourg	82	21	70	70	15	97
Netherlands	100	88	98	100	66	96
Switzerland	72	23	63	98	6	94
United Kingdom	91	80	97	100	44	92
Denmark	92	30	92	100	23	91
Finland	70	15	76	86	3	100
Norway	82	12	66	96	2	100
Sweden	89	64	80	100	14	100
Cyprus	.	.	.	.	16	78
Greece	79	5	5	6	2	86
Italy	23	7	88	14	5	52
Portugal	82	9	34	76	10	82
Spain	85	6	57	34	32	88
Malta	.	.	.	.	.	.
Bulgaria	67	82	40	99	1	97
Croatia	75	2	55	99	2	94
Czech Republic	91	92	100	100	8	94
Estonia	89	26	98	100	2	97
Hungary	77	48	86	100	16	93
Latvia	95	56	62	100	2	95
Lithuania	79	78	90	100	1	97
Poland	48	19	100	98	3	96
Romania	52	34	69	67	1	93
Slovak Republic	77	58	97	100	9	96
Slovenia	75	22	88	100	2	95
Australia	85	20	84	83	39	73
New Zealand	100	18	99	100	5	81
Canada	63	18	58	86	8	88
United States	76	54	74	98	5	92
Japan	46	30	96	33	30	74
Korea	48	9	97	51	47	53

Source: OECD (2010b, 2012 and 2013).



## 2.4.2 An exploratory statistical analysis<sup>36</sup>

We next perform an exploratory statistical analysis on the determinants of differences in student test scores across countries. Our main aim is to explain the average student test score in a given country, in a given subject, in a given year.<sup>37</sup> We include all countries (50, of which 31 are included in the list of 36 countries studied in this volume), all years (2003, 2009 and 2012) and all subjects (maths, reading and science), for which data are available. As explanatory variables, we use all country-level and institutional variables contained in Table 4 of the overview article by Hanushek and Woessmann (2010). These include GDP per capita, the cumulative educational expenditure per student between the ages of 6 and 15 years, and all the institutional indicators documented in Table 2.5 above, consisting of measures of accountability, autonomy and choice.<sup>38</sup>

The availability of longitudinal data allows us to control for all structural country-specific determinants of test scores (without necessarily observing them) and hence leads to more credible causal estimates.<sup>39</sup> In order to analyse the effect of external examinations – captured by a variable that is constant over time – we also conduct our analysis *without* controlling for all structural determinants of test scores.<sup>40</sup> The results of our analysis can be summarised as follows (full results presented in Table A2.4 in the appendix to this chapter):

- 1 The presence of standards-based external examinations for students in secondary education is positively correlated with average student test scores. Moving from 0 (no external examinations) to 100 (having external examinations to the fullest extent) is associated with an 80 points improvement in average test scores, suggesting a possibly large effect.<sup>41</sup> These findings are consistent with the literature (see Section 2.4.1).
- 2 The cumulative educational expenditure per student between the ages of 6 and 15 years does not correlate with average test scores; this is in line with the literature (Section 2.4.1).
- 3 In our preferred specification, most of the institutional variables do not significantly correlate with average test scores. Two exceptions should be noted.
  - First, school autonomy in hiring teachers is positively correlated with test scores, in line with the literature. An increase in the share of autonomous schools of 10 percentage points is associated with a 1.8-points improvement in average test scores.
  - Second, the effect of school autonomy in formulating the budget depends on the presence of external examinations. In the absence of such examinations, school autonomy is irrelevant. However, in the presence of external examinations (to the fullest extent), increasing the share of autonomous schools by 10 percentage points is associated with a 2.6-points improvement in average test scores. This is consistent with the notion that autonomous schools can make better use of

<sup>36</sup> This section was written jointly with Isolde Woittiez.

<sup>37</sup> The average student test score corresponds to the mean PISA test scores described in Section 2.1.1.

<sup>38</sup> GDP per capita is expressed in constant 2011 international u.s. dollars (PPP) (data from the World Bank). The cumulative educational expenditure per student is also measured in PPP (data from the OECD's Education at a Glance). For details on each of the institutional indicators, see Section 2.4.1.

<sup>39</sup> We estimate the following (preferred) fixed effects model:  

$$y_{cst} = \beta X_{cst} + \alpha_c + \alpha_s + \alpha_t + \varepsilon_{cst}$$
 where the subscripts  $c$ ,  $s$  and  $t$  denote country, subject, and year, respectively. We exclude cumulative educational expenditure per student because it would substantially reduce the sample size. We compute robust standard errors clustered at the country level. Brunello and Rocco (2013) also perform a fixed effects analysis of average PISA test scores.

<sup>40</sup> We estimate the following ordinary least squares (OLS) regression:  

$$y_{cst} = \beta X_{cst} + \alpha_s + \alpha_t + \varepsilon_{cst}$$

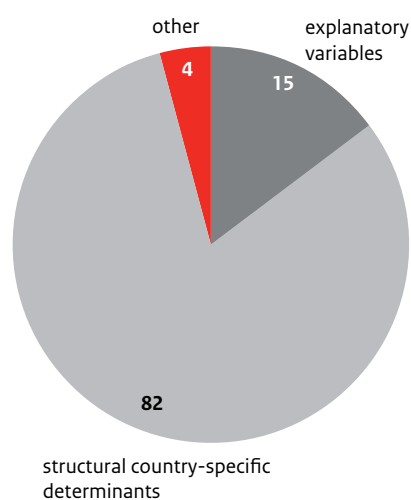
<sup>41</sup> Recall that test scores are mapped on a scale with a mean of 500 test-score points and a standard deviation of 100 points across the OECD countries.



local information but only in the presence of sufficient accountability mechanisms.

- 4 In our preferred specification, GDP per capita correlates positively with average test scores. A USD 10,000 increase in GDP per capita is associated with a 1.7-points improvement in average test scores.

Figure 2.13 Variance decomposition of average student test scores (in percentages)



Notes: Percentages add up to more than 100 due to rounding effects.

The finding that many of the explanatory variables do not appear to be relevant in explaining test scores is corroborated by an exercise in which we decompose the cross-country variation in average test scores.<sup>42</sup> The results are illustrated in Figure 2.13. As can be seen, only 15% of the variation in test scores is explained by the explanatory variables. At the same time, no less than 82% of the variation is explained by unobserved structural country-specific determinants.<sup>43</sup> In other words, the vast majority of differences in average test scores across countries are explained by differences in structural factors between countries (e.g. structural differences in the quality of teachers), while only a minor part is explained by changes in the explanatory variables over time.

<sup>42</sup> The decomposition is based on Cornelissen (2008).

<sup>43</sup> i.e. country fixed effects.



*Are countries with initially lower student test scores catching up?*

As we saw in Section 2.1, countries with low initial scores had in most cases improved their scores by 2012, while countries with high initial scores had in most cases seen their scores deteriorate by 2012. This hints at the possibility that educational outcomes converge over time. Convergence corresponds to the idea that countries with initially weaker performance tend to improve faster than countries with initially stronger performance and hence ‘catch up’. In economic theory, convergence is often explained by diminishing returns or by developing economies replicating the technologies or institutions of developed economies. To explore the convergence hypothesis, we performed an additional statistical analysis. The results can be summarised as follows:<sup>44</sup>

- 1 The 2006 level of student test scores is negatively correlated with the subsequent 2006-2012 change. A decrease of 10 points in the 2006 score is associated with a 2.7-points higher 2006-2012 change in test scores. Hence, countries with lower initial scores subsequently improve their scores more than countries with higher initial scores, consistent with the convergence hypothesis.<sup>45</sup>

## 2.5 Citizens’ perceptions of the quality of the education sector

The outcome indicators discussed above reflect the performance of countries in terms of the variables that are targeted by public policies. A strong performance could (partly) indicate that education policy is effective. But how do citizens *perceive* the performance of the education sector? And is this perception more positive in countries with relatively more favourable outcome scores? To address these questions, we use an indicator of the perceived quality of the education system from the European Quality of Life Survey (Eurofound 2012) and plot this indicator against the educational outcome index (see Figure 2.14).<sup>46</sup>

Figure 2.14 shows that the perceived quality of the education system is highest in Finland, Denmark and Belgium, and lowest in Greece, Bulgaria and Romania. It also shows that the (subjective) perceived quality of the education system is positively correlated with the (objective) educational outcome index. Citizens in countries that perform better in terms of outcomes tend to be more positive about their education systems.

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We regressed the 2006-2012 change in the average student test score on the initial 2006 level, while controlling for the 2003-2006 change and the explanatory variables presented by Hanushek and Woessmann (2010). Full estimation results are reported in Table A2.5 in the appendix to this chapter.

45

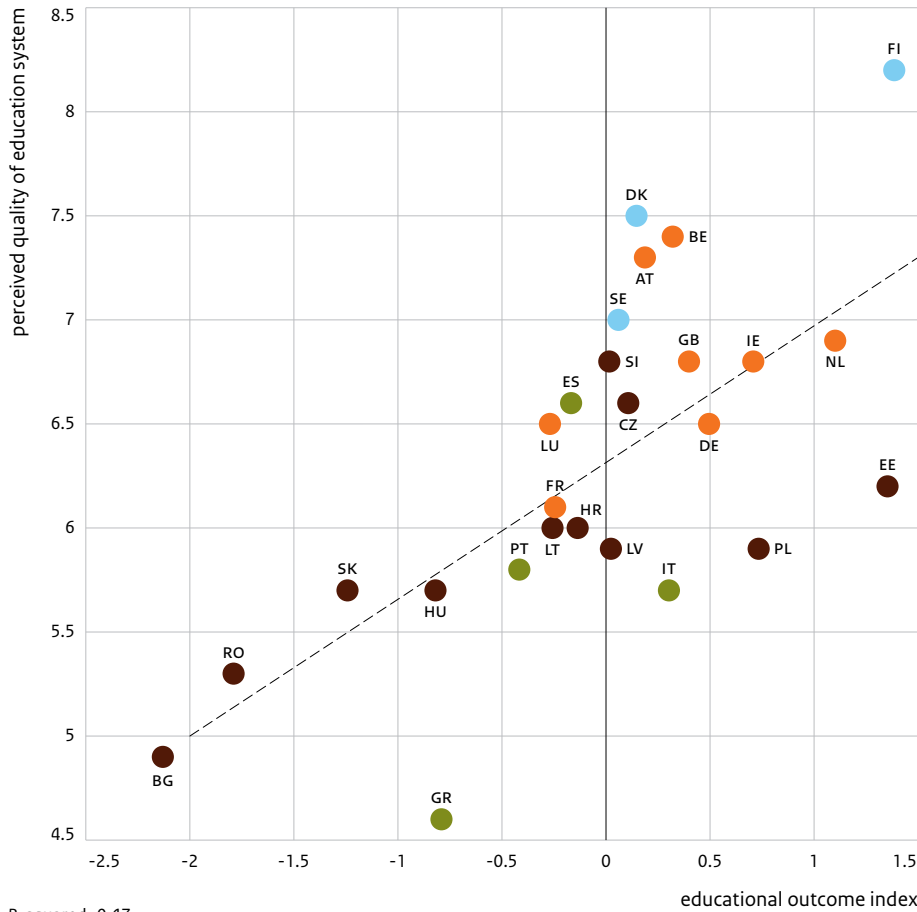
A possible concern is that the negative coefficient of the 2006 level of test scores could be explained by *mean-reversion* rather than convergence. The negative coefficient on the 2003-2006 change does indeed indicate that past negative shocks to test scores are followed by positive shocks (‘V-shaped recovery’). That said, we controlled for this channel and still found a negative and significant coefficient for the initial (2006) level of test scores, supporting the idea of convergence. In the future, as longer time series become available, the mean-reversion hypothesis can be more thoroughly tested and controlled for.

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The European Quality of Life Survey asked respondents how they would generally rate the quality of their education system (on a scale of 1 to 10, where 1 means very poor quality and 10 means very high quality). The indicator of the perceived quality of the education system corresponds to the mean rating given by respondents.



Figure 2.14 Perceived quality of education system (2012) versus educational outcome index (on a 1 to 10 scale and in index scores, respectively)



Notes: Data on the perceived quality of the education system from the European Quality of Life Survey (2012). See page 39 for a list of countries and country abbreviations. The dark grey dotted line represents the regression line of a bivariate regression of the perceived quality of the education system on the educational outcome index. Perceived quality of the education system is available only for the EU28. No outcome data are available for Cyprus and Malta.

## 2.6 Conclusion

In this chapter we have documented and compared the 36 countries studied in this volume in terms of educational inputs, outputs and outcomes.

As regards *outcomes*, we combined average performance in achievement tests (maths and reading) and the provision of equal opportunity to students from disadvantaged backgrounds, to form a composite index. The countries in Eastern Asia (Korea and Japan) outperformed all European countries in 2012 (as well as all other countries). Countries in Western Europe, Northern Europe and Oceania showed a similar performance on average, while Central and Eastern European countries and Southern





European countries performed worst on average. Performance within Central and Eastern Europe was mixed, with a strong performance in Estonia and Poland but a weak performance in Bulgaria and Romania. At the level of individual countries, the performance was strongest in Korea, Japan, Finland, Canada and Estonia, and weakest in Bulgaria, Romania, the Slovak Republic, Hungary and Greece.

We also looked at how outcomes changed between 2003 and 2012. As regards the average performance in achievement tests, Poland (both maths and reading), Romania (maths only) and Latvia (reading only) achieved the biggest improvements in test scores, while Sweden and Finland witnessed the largest reductions. As regards inequality based on parental socioeconomic status, Germany, the Netherlands and Switzerland saw the biggest reductions in inequality, while Spain, Latvia and France witnessed the largest increases.

With respect to educational *inputs*, we have seen that most countries in 2011 spent between 5% and 7% of their GDP on educational institutions. With respect to *outputs*, in most countries between 80% and 90% of 15 to 19 year-olds were enrolled in education in 2012.

We also discussed possible explanations for outcome differences between countries. A review of the economic literature suggested that student and family background characteristics are important determinants of student performance. By contrast, evidence on the effects of school inputs is more mixed. The quality of teachers and instructional material seems to matter, while quantitative measures such as expenditure per student and the size of classes are less relevant. Institutional features of schools and education systems are also important in explaining test scores. In particular, *accountability mechanisms* such as external exit examinations, monitoring of teacher lessons, comparing performance across schools, and using student assessments to decide on retention or promotion all show positive associations with student test scores. *School autonomy* also matters, although the way in which it affects performance depends on the type of autonomy. Autonomy with respect to process and personnel decisions (purchasing supplies, allocating the budget, hiring and rewarding teachers within a given budget and choosing textbooks and methods of instruction) improves performance. By contrast, autonomy in setting the budget and choosing the subject matter to be taught (two areas that may possibly give rise to opportunistic behaviour) worsens performance. Some studies suggest that granting schools autonomy works better in combination with accountability that limits opportunistic behaviour. The third institutional feature that affects student performance is the degree to which state schools face *competition from private schools*. It turns out that students perform best in countries that combine high shares of privately operated schools with high shares of public funding.



We performed an exploratory statistical analysis and presented results that are consistent with the notion of educational convergence, or in other words the idea that countries with initially lower levels of performance will tend to improve their performance faster than countries with initially higher levels of performance (and thus catch up). We also found that the (time-varying) explanatory variables used in the economic literature explain only a small part of the cross-country variation in student test scores.

Finally, we found that citizens of countries that perform better in terms of educational outcomes also perceive the quality of the education sector as better.

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# Health

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3

## 3.1 Introduction

### 3.1.1 Why do we care?

The great importance of good health to individuals needs no elaborate explanation, for it enables people to live longer and provides fewer obstacles to participate in and enjoy life to the fullest. What is more, there are societal benefits to good health. First of all, a healthy population is a happier, more capable and more productive population. Significant economic benefits can be achieved through improving the overall level of public health (WHO 2014b). Living longer and in good health are likely to lead to increased labour market participation, higher productivity and improved levels of education, all of which benefit the economy (European Commission 2007).

The World Health Organization (WHO) formally instated a definition of health in 1948, and it has not been amended since (WHO 2014a; WHO 2014b). It is formulated as follows: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. However, criticism of this definition has been growing. Huber et al. (2011) emphasise that the WHO definition was developed at a time when infectious diseases were the main health concern, whereas today ageing with chronic illness and disability is the norm. Thus governments can help improve the health of the population by facilitating the provision of health care and long-term care. The former includes the diagnosis, treatment and prevention of diseases and health problems, but also the promotion of health and prolongation of life; the latter is concerned with making available the time, help and attention needed to enable people to cope with chronic ailments in day-to-day life.

### 3.1.2 Requirements of health care

Given the importance of good health to individuals and society, health care is obviously an essential public service. In our previous report on the performance of the public sector, we described the various requirements of health care systems according to the WHO (Jonker 2012). In short, the systems have to respond to the expectations of the population, reflect fair financial contributions and ultimately lead to better health outcomes for the population. The Council of the European Union formulated additional goals stating that health care systems should be universally accessible,



should be of high quality and should be financial sustainable (Council of the EU 2003).

Lingering effects of the economic recession of 2008 are important factors that threaten the financial basis of health sector. Other major factors that contribute to the increasing strain on health expenditure are the higher expectations of individuals in terms of the amount and quality of the care delivered and the rapid progress of technology, including medical technology. The latter not only increases the efficiency of the care provided, but also opens the way for new diagnostic methods and treatments for an ever-growing array of illnesses and ailments, leading to an increased supply of care. And when supply increases, generally, so does demand. The ongoing population ageing will also contribute to the strain on health expenditure. Projections of the changing demography estimate that in 2040 25.6% of the EU-28's population will reach the age of 65. Two decades later this percentage is estimated to rise to 29.3% (Eurostat).

Another important issue is the quality of health services. Quality, however, is a difficult concept because it is open to interpretation and has several aspects. There is the quality of the product delivered, the quality of the way in which it is delivered (process), and quality of the system (or context) in which it is delivered. For instance, in the cure sector, product quality can relate to the outcome of a specific treatment, the process to the manner in which patients are treated by staff and the system quality could be the quality of the instruments used. As stated in the previous edition of this report (Jonker 2012), the European Commission has formulated a number of key objectives concerning the quality of care, striving for patient-centred, effective and safe forms of health care based on Arah et al. (2006). The objective of increasing quality generally goes hand in hand with increased costs, threatening the financial sustainability of the systems. Balancing the conflicting goals has presented major policy challenges in the past and will continue to do so in the coming years.

### 3.1.3 Indicators for inputs, outputs and outcomes

Following the heuristic model described in the first chapter, we use separate indicators for inputs, outputs and outcomes. The public sector provides inputs such as expenditure or personnel, which are used to produce outputs such as doctors' consultations or vaccinations. Output in turn relates to health outcomes such as life expectancy. Additionally, we describe citizens' perceptions of the quality of the health services. Table 3.1 summarises the different indicators used in this chapter.

Table 3.1 Outcome, output, input and trust indicators used in this chapter and corresponding data sources

Level	Indicators	Source
Outcome	Life expectancy at birth	Eurostat/OECD
	Infant mortality	Eurostat/OECD
	Self-perceived health	Eurostat/OECD
Input	Health expenditure as percentage of GDP	Eurostat/OECD
	Health expenditure by financing agent	Eurostat/OECD
	Health expenditure by provider	Eurostat/OECD
	Private health expenditure as percentage of total health expenditure	Eurostat/OECD
	Number of professionally active physicians per 1,000 population	Eurostat/OECD
	Number of professionally active nurses per 1,000 population	Eurostat/OECD
Output	Number of doctor's consultations per capita	Eurostat/OECD
	Number of hospital discharges per 100 population	Eurostat/OECD
	Long-term care recipients as % of the population aged 65 or over	OECD
	Influenza vaccination as % of the population aged 65 or over	Eurostat/OECD
Trust	Perceived quality of health services	European Quality of Life Survey

### 3.1.4 What is the goal of this chapter?

Our first objective is to describe and compare the performance of countries in terms of the outcome indicators. Which regions and countries perform best, and which perform worst? Additionally, how do the outcome indicators develop over time? Our second objective is to describe how much countries spend in terms of inputs and how much the health sector produces in terms of outputs. And how do countries compare in terms of input and output indicators? The third objective entails analysing the observed differences in outcomes between countries in causal terms. What explains the performance of countries on health? We address this objective by reviewing the empirical literature and performing a statistical analysis using time series of health outcomes. Finally, we examine the perceptions of citizens towards their countries' health care services.

### 3.1.5 Structure of the chapter

To describe the performance of the health sector across countries, we use three different indicators to measure the outcomes, and construct an overall outcome index (Section 2). As an indication of the input for this sector, we present various health expenditures and personnel inputs (Section 3). Several output indicators covering cure, care and prevention are discussed in Section 4, and in Section 5 an attempt is made to explain country differences in the outcomes by further examining the relationship





between the outcomes and their determinants. The chapter ends with a discussion of the population's perceptions of the quality of the health care sector (Section 6) and the overall conclusions (Section 7).

### 3.2 Outcomes

A healthy population is the ultimate goal of public health policy. The level of certain health attributes can be measured using various indicators. Life expectancy (LE) is one of the most commonly used indicators for health performance (D'Albis, Ezzo and Arolas 2012; Mackenbach et al. 2011; Clark 2011; Anderson and Frogner 2008; Navarro et al. 2006; Nixon and Ullman 2006). The average life expectancy of a population provides a general indication of the population's health. Although medical advances enable people to live longer today than several years ago, the potential downside is that they may do so in poor health, diminishing their quality of life. Along with life expectancy, one widely used indicator of public health is infant mortality (Joumard et al. 2008; Verhoeven et al. 2007; Afonso and St. Aubyn 2006; Nixon and Ullman 2006; Retzlaff-Roberts et al. 2004; Or 2000). Infant mortality rates tend to be higher when the health system is less developed, and can therefore be seen as a measure of the quality of the health system (King and Zeng 2001). Another commonly used indicator of health is self-perceived health, a subjective assessment of a person's own health status. Despite its very general and subjective nature, self-perceived health is an important health indicator. It is complementary to physical functioning and is an independent predictor for illnesses, health service use and mortality (Idler and Benyamini 1997). To summarise the outcomes over the entire health sector, an overall outcome index is constructed for each country. This outcome index is based on country scores on life expectancy and infant mortality as the main health indicators.

#### 3.2.1 Life expectancy

*Central and Eastern European countries lag behind, but are catching up*

Life expectancy at birth has been steadily increasing in all countries since 1995 (Table 3.2). However, a few results stand out when comparing life expectancy across countries in 2012, and its development since 1995.

- 1 Japan has the highest average life expectancy at birth, at 83.2 years. Within Europe, the Spanish are expected to live the longest (82.5 years), immediately followed by the Italian (82.4 years) and French (82.1 years) populations.
- 2 The lowest average life expectancies are found in Latvia and Lithuania, at 74.1 years, followed by the other Central and Eastern European countries.



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Table 3.2 Life expectancy at birth by country, 1995-2012 (in years)

For reading instructions see page 49

Region	Country	1995	2000	2005	2010	2012	2012	2012 vs 1995
Western Europe	Switzerland	78.7	▲ +1.3	▲ +1.5	▲ +1.2	▲ +0.1	82.8	
	France	77.9	▲ +1.3	▲ +1.1	▲ +1.5	▲ +0.3	82.1	
	Luxembourg	76.8	▲ +1.2	▲ +1.6	▲ +1.2	▲ +0.7	81.5	
	Netherlands	77.6	▲ +0.6	▲ +1.4	▲ +1.4	▲ +0.2	81.2	
	Austria	76.9	▲ +1.4	▲ +1.2	▲ +1.2	▲ +0.4	81.1	
	United Kingdom	76.7	▲ +1.3	▲ +1.2	▲ +1.4	▲ +0.4	81.0	
	Germany	76.7	▲ +1.6	▲ +1.1	▲ +1.1	▲ +0.5	81.0	
	Ireland	75.5	▲ +1.1	▲ +2.4	▲ +1.8	▲ +0.1	80.9	
	Belgium	77.0	▲ +0.9	▲ +1.2	▲ +1.2	▲ +0.2	80.5	
Northern Europe	Sweden	79.0	▲ +0.8	▲ +0.9	▲ +0.9	▲ +0.2	81.8	
	Norway	77.9	▲ +0.9	▲ +1.5	▲ +0.9	▲ +0.3	81.5	
	Finland	76.7	▲ +1.1	▲ +1.3	▲ +1.1	▲ +0.5	80.7	
	Denmark	75.3	▲ +1.6	▲ +1.4	▲ +1.0	▲ +0.9	80.2	
Southern Europe	Spain	78.1	▲ +1.2	▲ +1.0	▲ +2.1	▲ +0.1	82.5	
	Italy	78.3	▲ +1.6	▲ +1.0	▲ +1.3	▲ +0.2	82.4	
	Cyprus	77.4	▲ +0.3	▲ +1.0	▲ +2.8	▼ -0.4	81.1	
	Malta	77.2	▲ +1.2	▲ +1.0	▲ +2.1	▼ -0.6	80.9	
	Greece	77.5	▲ +0.7	▲ +1.3	▲ +1.1	▲ +0.1	80.7	
	Portugal	75.4	▲ +1.4	▲ +1.4	▲ +1.9	▲ +0.5	80.6	
Central and Eastern Europe	Slovenia	74.7	▲ +1.5	▲ +1.3	▲ +2.3	▲ +0.5	80.3	
	Czech Republic	73.3	▲ +1.8	▲ +1.0	▲ +1.6	▲ +0.4	78.1	
	Croatia	.	74.6 <sup>a</sup>	▲ +0.7	▲ +1.4	▲ +0.6	77.3	
	Poland	72.0	▲ +1.8	▲ +1.2	▲ +1.4	▲ +0.5	76.9	
	Estonia	67.7	▲ +3.4	▲ +1.9	▲ +3.0	▲ +0.7	76.7	
	Slovak Republic	72.4	▲ +0.9	▲ +0.8	▲ +1.5	▲ +0.7	76.3	
	Hungary	70.0	▲ +1.9	▲ +1.1	▲ +1.7	▲ +0.6	75.3	
	Romania	69.3	▲ +1.9	▲ +1.1	▲ +1.5	▲ +0.7	74.5	
	Bulgaria	71.0	▲ +0.6	▲ +0.9	▲ +1.3	▲ +0.6	74.4	
	Lithuania	69.1	▲ +3.0	▼ -0.9	▲ +2.1	▲ +0.8	74.1	
	Latvia	.	.	70.6	▲ +2.5	▲ +1.0	74.1	
Oceania	Australia	77.9	▲ +1.4	▲ +1.6	▲ +0.9	▲ +0.3	82.1	
	New Zealand	76.8	▲ +1.6	▲ +1.4	▲ +1.2	▲ +0.5	81.5	
Northern America	Canada	78.0	▲ +1.0	▲ +1.1	▲ +1.1	▲ +0.3	81.5 <sup>b</sup>	
	United States	75.7	▲ +1.0	▲ +0.7	▲ +1.2	▲ +0.1	78.7 <sup>b</sup>	
Eastern Asia	Japan	79.6	▲ +1.6	▲ +0.8	▲ +0.9	▲ +0.3	83.2	
	Korea	73.5	▲ +2.4	▲ +2.6	▲ +2.1	▲ +0.7	81.3	

a information from following year; b Information from previous year. Source: Eurostat (Life expectancy, 2014), oecd Statistics (Health status, 2014).

▲ largest increase  
 ▲ smallest increase

2012  
 1995



- 3 The yearly increase in life expectancy is greatest in Estonia, Latvia and Korea, where the populations gain about an extra six months of life expectancy every year. At the other end of the scale, the Swedish, Greek and Northern American populations show a yearly increase in life expectancy of around two months.

Based on these results, it seems that the gap in life expectancy between countries is narrowing, as the increase in life expectancy is relatively large for the Central and Eastern European countries. For most countries, the increase in life expectancy has attenuated in the most recent years, which may indicate a flattening of the growth in life expectancy.

*Inequalities in life expectancy by gender and education level*

For many years, the life expectancy at birth has been much higher for women than for men (OECD 2014). Across the 28 EU Member States, the mean gender gap is 6.1 years, ranging from 3.7 years in Sweden, the Netherlands and the United Kingdom, to ten or more years in Lithuania, Estonia and Latvia. As with the gap in life expectancies between countries, the gap between men and women is also narrowing. This can mostly be attributed to the narrowing of gender differences in health risk behaviours such as smoking (OECD 2014). Life expectancy varies not only by gender, but also by socioeconomic status as measured by education level (OECD 2013). Highly educated persons are likely to live several years longer and to be in better health. Differences in life expectancy by education level are particularly marked in Central and Eastern European countries. More highly educated people not only adopt a healthier lifestyle, but also have more resources in terms of income and lifestyle choices, as well as facilitating access to appropriate health care.

*Life expectancy at age 65*

Life expectancy changes over the course of a person's life because as they survive the periods of birth, childhood and adolescence, their chance of reaching older age increases. The life expectancy at different ages can be presented as the number of additional years a person can expect to live from a certain age on. The EU-28 population that was aged 65 in 2012 could expect to live another 19.4 years (an average expected age at death of 84.4 years) (Eurostat). Similar to life expectancy at birth, life expectancy at age 65 is highest in Japan, and lowest in the Central and Eastern European countries. On average, 65 year-old Japanese people are expected to live to the age of 86.4 years, whereas 65 year-old Bulgarians are expected to live to age 80.6 (Eurostat).

*Disability-free life expectancy*

Living longer is seen as a desirable goal. However, the value of these additional years is increased if they can be spent in good health. In the latter stages of life, nearly everyone will eventually have to succumb to the effects of old age and deal with increased disability. For this reason,



*disability-free* life expectancy (DFLE) essentially addresses the question of whether the additional years of life expectancy are spent in good health or in a prolonged state of disability and dependency. If disability-free life years are increasing more rapidly than life expectancy, it means that people are living more years in better health, resulting in a decreased need for long-term care and lower levels of public health expenditure.

About 77% of the remaining life years at birth are expected to be spent free of disability for the EU-28 population (DFLE of 62 years) (see table A3.1 in the appendix to this chapter ([www.scp.nl](http://www.scp.nl))). Between 1995 and 2012, there was a decreasing trend in the share of disability-free life years in most countries, meaning that recently relatively more years are spent in disability. On the other hand, we see that differences between countries are reducing; this may indicate that the gap between countries is narrowing over time. In the EU-28, women are expected to live more years with disability than men. Thus, despite the inequality in overall life expectancy in favour of women, the time spent free from disability is almost equal for men and women.

### 3.2.2 Infant mortality

The infant mortality rate is measured as the number of deaths of babies below the age of one per 1,000 live births (Table 3.3). The main results are as follows:

- 1 Among the European regions, the infant mortality rate is lowest in the Nordic countries (around 2.7 deaths per 1,000 live births), but the rate by country is lowest for Slovenia (1.6 deaths per 1,000 live births). However, when looking at the information available for 2013 (Eurostat), Slovenia's rate has increased to 2.9 deaths per 1,000 live births.
- 2 Infant mortality is highest in the Central and Eastern European countries, especially Romania (9.0 deaths per 1,000 live births), followed by Bulgaria, Latvia and the Slovak Republic.
- 3 Overall, the infant mortality rate decreased between 1995 and 2012. In the EU-28 it fell from 7.5 to 3.8 deaths per 1,000 live births. The biggest reduction occurred in Latvia and Romania, by around 12 deaths in every 1,000 live births. However, the other Central and Eastern European countries also saw a comparatively large reduction. Northern Europe showed the smallest reduction in infant mortality rates, indicating a narrowing of the gap between countries over time.

### 3.2.3 Self-perceived health

European countries have assessed the self-perceived health prevalence in a similar way. However, questionnaires in Australia, New Zealand, Canada and the United States have used different response options, which may lead to an overestimation of good health compared to the European



## HEALTH

Table 3.3 Infant mortality rate by country, 1995-2012 (in deaths per 1,000 live births)

For reading instructions see page 49

Region	Country	1995	2000	2005	2010	2012	2012	2012 vs 1995
Western Europe	United Kingdom	6.2	▼ -0.6	▼ -0.5	▼ -0.9	▼ -0.1	4.1	2.1
	Belgium	6.0	▼ -1.2	▼ -1.1	▼ -0.1	▲ +0.2	3.8	2.2
	Netherlands	5.5	▼ -0.4	▼ -0.2	▼ -1.1	▼ -0.1	3.7	1.8
	Switzerland	5.1	▼ -0.2	▼ -0.7	▼ -0.4	▼ -0.2	3.6	1.5
	Ireland	6.4	▼ -0.2	▼ -2.4	▼ -0.2	▼ -0.1	3.5	2.9
	France	5.0	▼ -0.5	▼ -0.7	▼ -0.2	▼ -0.1	3.5	1.5
	Germany	5.3	▼ -0.9	▼ -0.5	▼ -0.5	▼ -0.1	3.3	2.0
	Austria	5.4	▼ -0.6	▼ -0.6	▼ -0.3	▼ -0.7	3.2	2.2
	Luxembourg	5.5	▼ -0.4	▼ -2.5	▲ +0.8	▼ -0.9	2.5	3.0
Northern Europe	Denmark	5.1	▲ +0.2	▼ -0.9	▼ -1.0	0.0	3.4	1.7
	Sweden	4.1	▼ -0.7	▼ -1.0	▲ +0.1	▲ +0.1	2.6	1.5
	Norway	4.0	▼ -0.2	▼ -0.7	▼ -0.3	▼ -0.3	2.5	1.5
	Finland	3.9	▼ -0.1	▼ -0.8	▼ -0.7	▲ +0.1	2.4	1.5
Southern Europe	Malta	8.9	▼ -3.7	▲ +0.2	▲ +0.2	▼ -0.3	5.3	3.6
	Cyprus	8.5	▼ -2.9	▼ -1.0	▼ -1.4	▲ +0.3	3.5	5.0
	Portugal	7.4	▼ -1.9	▼ -2.0	▼ -1.0	▲ +0.9	3.4	4.0
	Spain	5.5	▼ -1.1	▼ -0.7	▼ -0.5	▼ -0.1	3.1	2.4
	Italy	6.1	▼ -1.8	▼ -0.5	▼ -0.6	▼ -0.3	2.9	3.2
	Greece	8.1	▼ -2.2	▼ -2.1	0.0	▼ -0.9	2.9	5.2
Central and Eastern Europe	Romania	21.2	▼ -2.6	▼ -3.6	▼ -5.2	▼ -0.8	9.0	12.2
	Bulgaria	14.8	▼ -1.5	▼ -2.9	▼ -1.0	▼ -1.6	7.8	7.0
	Latvia	18.8	▼ -8.5	▼ -2.6	▼ -2.1	▲ +0.7	6.3	12.5
	Slovak Republic	11.0	▼ -2.4	▼ -1.4	▼ -1.5	▲ +0.1	5.8	5.2
	Hungary	10.7	▼ -1.5	▼ -3.0	▼ -0.9	▼ -0.4	4.9	5.8
	Poland	13.6	▼ -5.5	▼ -1.7	▼ -1.4	▼ -0.4	4.6	9.0
	Lithuania	12.5	▼ -3.9	▼ -1.5	▼ -2.1	▼ -1.1	3.9	8.6
	Estonia	14.9	▼ -6.5	▼ -3.0	▼ -2.1	▲ +0.3	3.6	11.3
	Croatia	8.9	▼ -1.5	▼ -1.7	▼ -1.3	▼ -0.8	3.6	5.3
	Czech Republic	7.7	▼ -3.6	▼ -0.7	▼ -0.7	▼ -0.1	2.6	5.1
	Slovenia	5.5	▼ -0.6	▼ -0.8	▼ -1.6	▼ -0.9	1.6	3.9
Oceania	New Zealand	6.7	▼ -0.4	▼ -1.3	▲ +0.5	▼ -0.3	5.2 <sup>b</sup>	1.5
	Australia	5.7	▼ -0.5	▼ -0.2	▼ -0.9	▼ -0.8	3.3	2.4
Northern America	United States	7.6	▼ -0.7	0.0	▼ -0.8	0.0	6.1 <sup>b</sup>	1.5
	Canada	6.1	▼ -0.8	▲ +0.1	▼ -0.4	▼ -0.2	4.8 <sup>b</sup>	1.3
Eastern Asia	Korea	7.7 <sup>a</sup>	▼ -1.5 <sup>b</sup>	▼ -1.5	▼ -1.5	▼ -0.3	2.9	4.8
	Japan	4.3	▼ -1.1	▼ -0.4	▼ -0.5	▼ -0.1	2.2	2.1

a information from following year; b information from previous year. Source: Eurostat (Infant mortality rates, 2014), OECD Statistics (Infant mortality, 2014).

▼ smallest decrease  
▼ largest decrease

2012  
1995

countries (Jürges et al, 2008). Although a comparable indicator to that used in the European countries was applied in Japan and Korea, the calculations used to obtain the prevalence estimate differed (OECD 2014), possibly leading to an underestimation compared to the other countries. As the measures of self-perceived health are not directly comparable for non-European countries, we will focus on comparisons within Europe only. In 2012, the prevalence of good self-perceived health in the EU-28 was about 68%. Good self-perceived health is defined as self-reports of good, very good or excellent health. When looking at the individual countries, a few results stand out (Table 3.4):

- 1 The prevalence of good health was highest in Western and Northern Europe, especially in Ireland (83%), Switzerland (82%) and Sweden (81%).
- 2 The lowest prevalence was found in Central and Eastern Europe (58%), with particularly low estimates for Lithuania (45%), Latvia (47%) and Croatia (48%).
- 3 Since 2005, the prevalence of good self-perceived health has been quite stable. However, in most Central and Eastern European countries the prevalence has increased over the past seven years, especially in the Slovak Republic, Hungary and Latvia, where it has increased by almost two percentage points per year.

### 3.2.4 Health outcome index

To derive a summary measure across all health outcomes, we combined the results for life expectancy and infant mortality into a single health outcome index (Figure 3.1). The health outcome index is derived from the average standardised 2012 scores for life expectancy and infant mortality. The outcome index is constructed as the unweighted average of these two indicators that each have an average of 0 and a standard deviation of 1 (also see Chapter 1).<sup>1</sup> Self-perceived health was not included, due to lack of comparability with non-European countries, as discussed earlier. The main results can be summarised as follows:

- 1 Highest scores for the health index in Europe are obtained for Slovenia, Italy, Sweden, Luxembourg, Norway and Spain. Most other Western and Northern European countries follow closely. The good performance of Italy and Spain can be attributed to the high life expectancies in these countries, whereas the performance of Slovenia is mainly caused by its low infant mortality rate.
- 2 When including non-European countries, Japan, Australia and Korea also score well, with Japan having the highest score overall.
- 3 There seems to be a deviation between Central and Eastern Europe and the other countries. All Central and Eastern European countries except Slovenia score relatively low.

<sup>1</sup> As infant mortality is a negative indicator, we multiply the resulting z-score by -1.



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Table 3.4 Prevalence of good self-perceived health by country, 1995-2012 (in percentages)

For reading instructions see page 49

Region	Country	2005	2010	2012	2012	2012 vs 2005
Western Europe	Ireland	83	▲ +1 ▼ -1	83		
	Switzerland	.	82	0	82	
	United Kingdom	75	▲ +4 ▼ -3	76		
	Netherlands	77	▲ +1 ▼ -2	76		
	Belgium	75	▼ -2 ▲ +2	75		
	Luxembourg	74	▲ +2 ▼ -2	74		
	Austria	72	▼ -2	0	70	
	France	69	▼ -2 ▲ +1	68		
	Germany	60	▲ +5 ▲ +1	66		
Northern Europe	Sweden	76	▲ +4 ▲ +1	81		
	Norway	74	▲ +3 ▲ +2	79		
	Denmark	78	▼ -6 ▼ -1	71		
	Finland	69	▼ -1 ▼ -1	67		
Southern Europe	Cyprus	76	▼ -1 ▲ +3	78		
	Spain	69	▲ +6 ▲ +2	77		
	Greece	79	▼ -2 ▼ -1	76		
	Malta	72	▼ -3 ▲ +3	72		
	Italy	59	▲ +8 ▲ +3	70		
	Portugal	52	▲ +2 ▼ -1	53		
Central and Eastern Europe	Romania	.	71	0	71	
	Bulgaria	.	68	▼ -1	67	
	Slovak Republic	52	▲ +12 ▲ +2	66		
	Slovenia	53	▲ +7 ▲ +3	63		
	Czech Republic	59	▲ +3 ▼ -1	61		
	Poland	55	▲ +3	0	58	
	Hungary	45	▲ +10 ▲ +3	58		
	Estonia	54	▼ -1	0	53	
	Croatia	.	47	▲ +1	48	
	Latvia	35	▲ +14 ▼ -2	47		
Lithuania	44	▲ +8 ▼ -7	45			
Oceania	New Zealand	.	.	89	89	
	Australia	.	.	85	85 <sup>a</sup>	
Northern America	Canada	88	0 ▲ +1	89		
	United States	.	.	88	88	
Eastern Asia	Korea	48	▼ -10 ▼ -5	33		
	Japan	.	30	.	.	

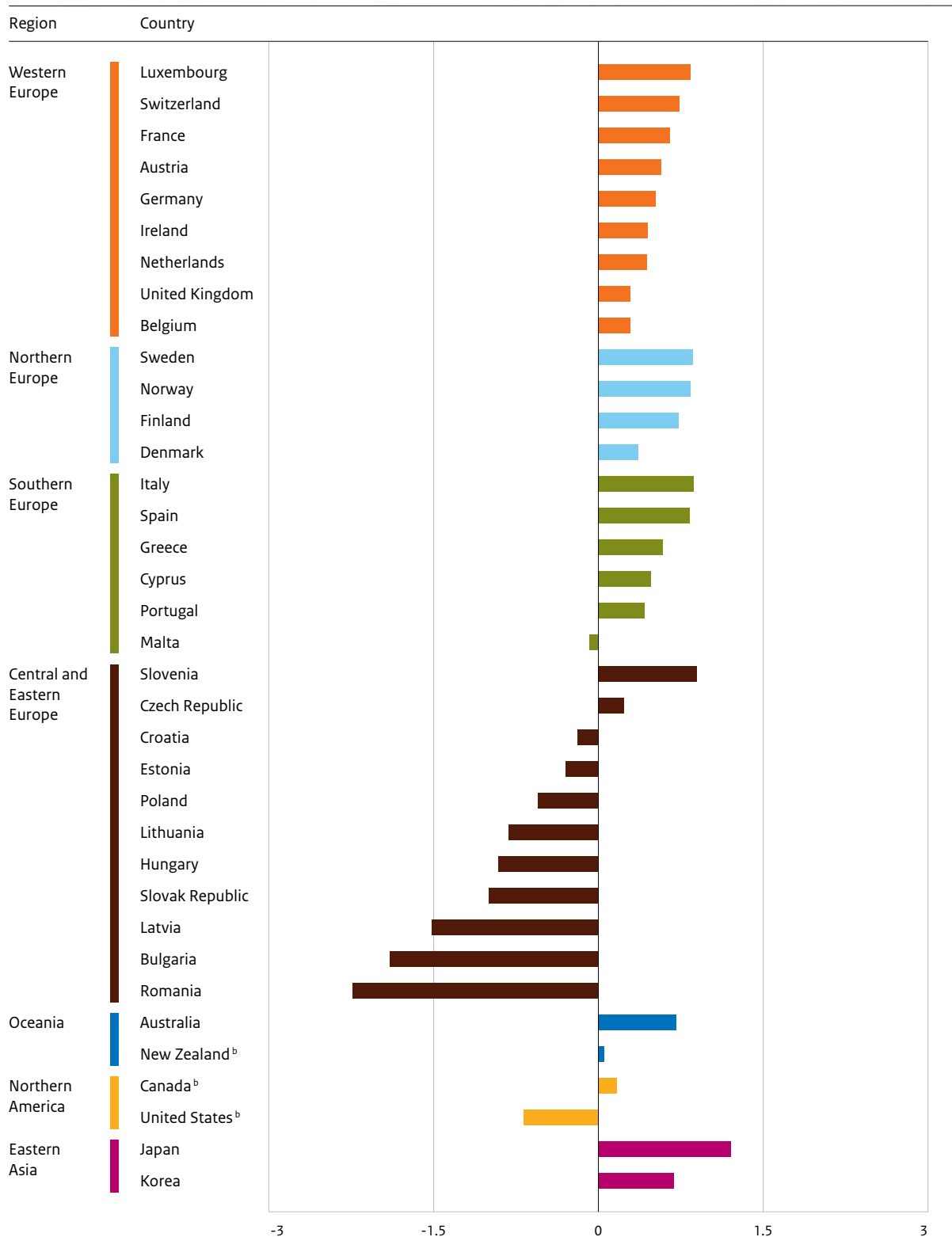
a Information from previous year. Note: We have dichotomised the response options for self-perceived health across all European countries, with the response categories 'very good' and 'good' being combined into one 'good' category. For Japan, the denominator includes those whose perceived health status is unknown. Source: Eurostat (Self-perceived health, 2014), oecd Statistics (Perceived health status, 2014), scp treatment.

▲ largest increase  
▼ largest decrease

2012  
2005

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Figure 3.1 Health outcome index<sup>a</sup>, 2012 (in index scores)



a The health outcome index is derived from the average standardised scores for life expectancy (2012) and infant mortality (2012). As infant mortality is a negative indicator, we multiply the resulting z-score by -1. Standardisation is based on the 24 countries with available data for all main public sectors (see Chapter 1). Thus, we have two outcome indicators that each have an average of 0 and a standard deviation of 1. The outcome index is constructed as the unweighted average of these two indicators. b Information is (partly) from 2011.





### 3.3 Inputs

The input of health systems is described in terms of funding and personnel. We look at health care funding in two ways: the way it is financed (publicly or privately) and the allocation of the funding to different aspects of health care (e.g. hospitals, medical equipment, etc.). Another way to look at the input of the health sector is to look at the staff who work in it. We consider the number of doctors and nurses that are available for every 1,000 people in the population. In addition, we will discuss the changes that have occurred in all these inputs in recent years.

#### 3.3.1 Financing the health sector

Health systems are often distinguished by the way they are funded or by the sectors to which the funds are allocated. A health system may be publicly financed through taxes or social insurance, or privately financed through private insurance contributions and out-of-pocket payments. An example of the latter is personally paying for medicines or medical treatment that are not covered by social or private insurance.

##### *The United States outspends all other countries on health*

The percentage of funds allocated to health varies between countries. With nearly 17% of gross domestic product (GDP) going on health, the United States is the biggest spender on health care (Table 3.5). This is much higher than the spending by the other countries in this report, which spend around 9% as a rough average. At the other end of the scale, Cyprus, along with Romania, Estonia and Latvia, spend approximately 6% of their GDP on health care.

When looking at health spending per capita, the United States again outspends all other countries, spending the equivalent of USD 8,508 for each person in 2011 (OECD 2013). That two-and-a-half times the average health spending of all OECD countries (USD 3,322) and 50% higher than Norway (USD 5,669) and Switzerland (USD 5,643), which were the next biggest spending countries. Higher health sector prices explain much of the difference between the US and other countries (OECD 2013). At current prices and ppps; the Southern European countries spend slightly less per capita than the OECD average, and the Central and Eastern European countries spend well below average.<sup>2</sup>

##### *Public versus private spending*

The majority of health expenditure in almost all countries is publicly funded by general government, ranging from 86% of total health expenditure in the Netherlands to 42% in Cyprus (Table 3.5). There are two national insurance schemes in the Netherlands, an obligatory health insurance covering basic medical care and a mandatory public insurance for

<sup>2</sup> These conclusions are based on the following numbers: Spain (USD 3,072), Italy (USD 3,012), Portugal (USD 2,619), Greece (USD 2,361), Slovenia (USD 2,421), Czech Republic (USD 1,966), Hungary (USD 1,689), Poland (USD 1,452) and Estonia (USD 1,303).



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Table 3.5 Composition of health expenditures, by financing agent, 2012 (in percentages)

Region	Country	As % of GDP	Share funded by		Total private expenditures		
			general government	private sector	share out-of-pocket expenses	share private insurance	share other private expenses
Western Europe	Austria	11	77	23	73	21	6
	Belgium	11	75	25	82	17	1
	France	12	78	22	35	62	3
	Germany	9	77	23	54	42	4
	Ireland	9	.	68	32	.	.
	Luxembourg	7	83	17	67	27	7
	Netherlands	12	86	14	42	38	20
	Switzerland	11	66	34	76	21	3
	United Kingdom	9	.	.	.	.	.
Northern Europe	Denmark	11	85	15	87	12	1
	Finland	9	75	25	78	9	14
	Norway	9	85	15	100	.	.
	Sweden	10	81	19	93	2	5
Southern Europe	Cyprus <sup>a</sup>	6	42	58	87	10	3
	Greece	9	68	32	90	9	1
	Italy	9	79	21	.	.	.
	Malta	.	.	.	.	.	.
	Portugal	10	63	37	85	14	2
	Spain <sup>c</sup>	9	73	27	78	21	1
Central and Eastern Europe	Bulgaria <sup>a</sup>	7	56	44	97	1	2
	Croatia	7	78	22	61	39	0
	Czech Republic	8	84	16	94	1	5
	Estonia	6	80	20	92	1	7
	Hungary	8	62	38	76	7	16
	Latvia <sup>b</sup>	6	60	40	97	2	1
	Lithuania <sup>c</sup>	7	71	29	98	2	0
	Poland	7	70	30	81	3	17
	Romania	6	79	21	98	1	2
	Slovak Republic	8	74	26	90	0	10
Oceania	Australia <sup>c</sup>	9	68	32	61	28	11
	New Zealand <sup>c</sup>	10	83	17	63	28	9
Northern America	Canada	11	70	30	52	43	5
	United States	17	49	51	24	68	8
Eastern Asia	Japan <sup>c</sup>	10	82	18	80	14	6
	Korea	8	56	44	85	13	2

a 2008; b 2009; c 2011. Source: OECD (<http://stats.oecd.org/>) and Eurostat (<http://ec.europa.eu/eurostat/data/database>); scp treatment.



long-term care to ensure that such care is provided to those most in need of it. Both insurance schemes are considered to be public arrangements, as opposed to additional private insurance which citizens can choose to take out. The private Dutch health expenditure comprises equal shares of private insurance and out-of-pocket payments. Public spending is also high in Denmark, Norway, Luxembourg and the Czech Republic. Health funding in the latter two countries is also based on a social health insurance scheme. Denmark and Norway both have tax-based systems that cover most of the population. In Cyprus, the same principle of an obligatory basic and an additional voluntary private insurance applies, except that the basic insurance covers less care provision. Few people choose or can afford private insurance, leading to out-of-pocket payments amounting to a high 50% of all Cypriot health care expenditure.

In all countries, except the United States, France and Slovenia, private expenditure mostly consists of out-of-pocket payments. In France and Slovenia, the contribution of private insurance is only slightly larger than the share of out-of-pocket payments, whereas in the United States two-thirds of total private expenditure is accounted for by private insurance.

### 3.3.2 Changes in health expenditure

In 'Health at a Glance', the OECD (2013) described the changes in expenditure per capita for OECD countries. On average, real expenditure per capita increased by 4.1% per year between 2000 and 2009, and by 0.2% per year between 2009 and 2011. The steep rise in expenditure has drastically diminished as a result of the economic recession. According to the OECD, variation in the slowdown is related to the spending cuts in the health sector, which were drastic in some countries. Some of these countries have still seen growth in spending on health per capita, but to a lesser extent than previously. Other countries, such as Greece (-11.1% per year), Ireland (-6.6%) and Estonia (-3.0%) have spent less per capita in recent years.

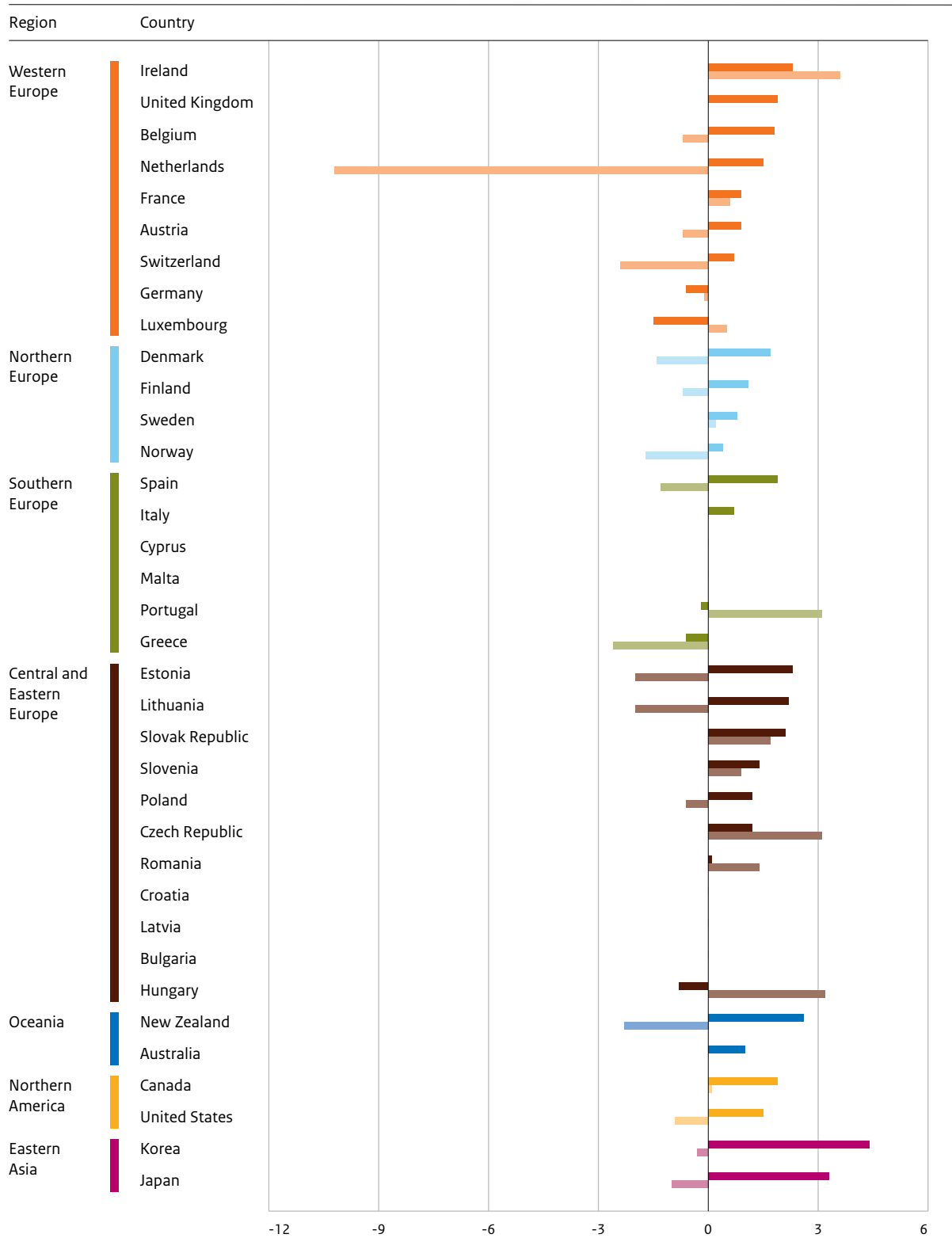
#### *Health expenditure growing as share of their GDP in most countries*

Changes in the health spending to GDP ratio result both from fluctuations in the rate of health spending and in growth in the economy as a whole. They reflect changes in the allocation of government funds to the health sector, not changes in the actual amount that is spent in total or per capita. In other words, the changes show whether a country spends a higher or lower share of government funds on health in relation to spending on other public services. The Eastern Asian countries have seen considerable growth in the share of health expenditure compared with other countries, with an increase of 3.3% per year in Japan and 4.4% per year in Korea, meaning that an increasing proportion of the government budget is spent on health (Figure 3.2). Between 2005 and 2012 the average yearly growth in



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Figure 3.2 Yearly growth in health expenditure, 2005-2012 (percentages per year)



Source: OECD (<http://stats.oecd.org/>) and Eurostat (<http://ec.europa.eu/eurostat/data/database>); scp treatment.

■ % health expenditures in GDP    ■ % private expenses in total health expenditures



health expenditure as a percentage of GDP was much lower, 1.2% per year. Most of the Northern European countries, with the exception of Denmark, have seen an increase in their health expenditure that is slightly below average, while the annual growth in both Northern American countries has been slightly above average. The other regions show more diversity. Among the Western European countries, the annual growth in health expenditure was above average in some countries (Belgium, Netherlands, Ireland and the United Kingdom), slightly below average (Austria, France and Switzerland) and even showed a year-on-year fall in some countries (Luxembourg and Germany). A similar scattered pattern can be observed in Southern and Central and Eastern Europe, and in Oceania.

The growth in health expenditure is often related to the ageing of populations. In Jonker (2012) we saw that between 1995 and 2009 the growth in health expenditure exceeded the growth of the population aged 65 or over in nearly all countries. This shifted between 2005 and 2012 (see figure A3.1 in the appendix to this chapter). The increase in the share of GDP allocated to health is closing in on the rate of population ageing. This might be partly due to retrenchment efforts made by governments in order to keep their health care systems affordable in the future (see also OECD 2014). So even though health expenditure has increased, the growth is becoming more in line with what can be expected in the light of the increasing number of older people within the populations.

*Private expenditure is also growing, but less rapidly than total health expenditure*

The share of private expenditure relative to the total health spending, averaged over all countries, decreased slightly between 2005 and 2012 by 0.4% per year (Figure 3.2). In most Western and Northern European countries there was a steeper decline in the share of private spending in the health sector. However, in absolute terms private expenditure is increasing, just like total health spending (<http://stats.oecd.org/>). However, because the growth in private spending is less than the total growth in health expenditure, the share of private expenditure is declining. In other words, less health care is being funded privately and more is being funded publicly. This also puts the relatively large reduction in the share of private expenditure in the Netherlands in perspective; because it is a relative measure, this reduction is led by increases in public expenditure. In absolute terms, people are paying more in out-of-pocket payments, as the patient excess in the social health insurance system has been increased. This makes it difficult to interpret the growth presented in Figure 3.2.

### 3.3.3 Composition of health expenditure

Health expenditure goes on hospitals, nursing and residential care facilities, ambulatory care, medical equipment and a residual category which among other things includes the provision and administration of public health programmes and health administration.



*Most health spending goes on hospitals, ambulatory care and medical equipment*

Overall, a large part of health expenditure is allocated to hospitals, ranging from 29% in Belgium to 49% in Greece, with little variation between the individual countries within the regions (Figure 3.3). Ambulatory care and medical equipment also account for substantial shares of health spending. Nursing and residential care facilities (or institutionalised long-term care) account for a much smaller fraction. Furthermore, the variation in health spending on these care facilities is much greater between countries.

The Netherlands allocates by far the largest share of health expenditure to institutional long-term care (25%), followed by Norway (19%) and Switzerland (17%). The share of older people living in institutions is also much higher in the Netherlands than in the other countries (Verbeek-Oudijk et al. 2014). In most of the Central and Eastern European, Southern European and Eastern Asian countries, this type of care is virtually non-existent, or else the care is mostly provided by relatives living within the care recipient's household or close by (also see Section 3.4.3).

### 3.3.4 Health care personnel

Another part of the input in the health sector relates to the personnel who work in the sector. Based on the number of persons – not the full-time equivalents – the Northern European countries and some of the Western European countries have the most health care personnel available per 1,000 of the population (Figure 3.4).

*Northern and Western European countries have relatively more nurses per physician*

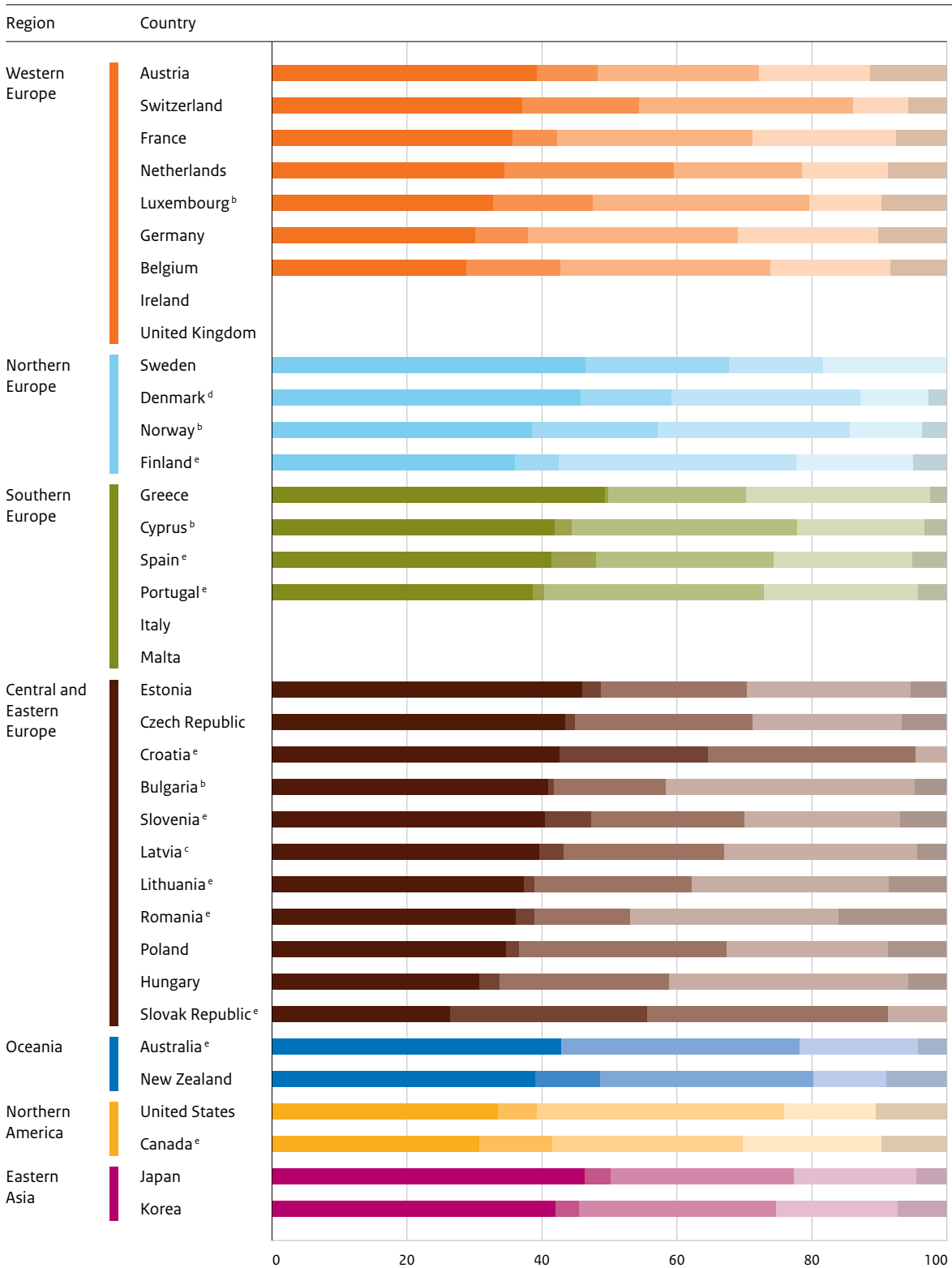
On average over all 36 countries, there were 3.3 practising physicians available for every 1,000 inhabitants in 2012. Greece (6.1 physicians) and Austria (4.9 physicians) are well above that average. Korea has the fewest physicians available (2.1 per 1,000 people), closely followed by Poland (2.2). Nearly all countries have seen an increase in the number of doctors per capita since 1995 (not shown in figure). Only the Belgian population, and to a lesser extent the French and the Polish populations, had fewer physicians per 1,000 people in 2012 than 17 years earlier.

The number of nurses per 1,000 people exceeds the number of physicians in all countries. This difference is much bigger in the Northern and Western European countries than in the Central and Eastern European countries. There is little information about the number of nurses per capita in the Southern European countries, but the number of nurses available to the Spanish population exceeds the number of physicians only slightly. The Eastern Asian countries are very diverse. While the number of nurses in Japan far exceeds the number of physicians (by 4.5 times), the difference in Korea is comparable to that found in the Central and Eastern European countries. In most countries, the number of nurses per 1,000 inhabitants increased between 1995 and 2012 (not shown in figure).



HEALTH

Figure 3.3 Composition of health expenditure, by health provider, 2012 (in percentages)<sup>a</sup>



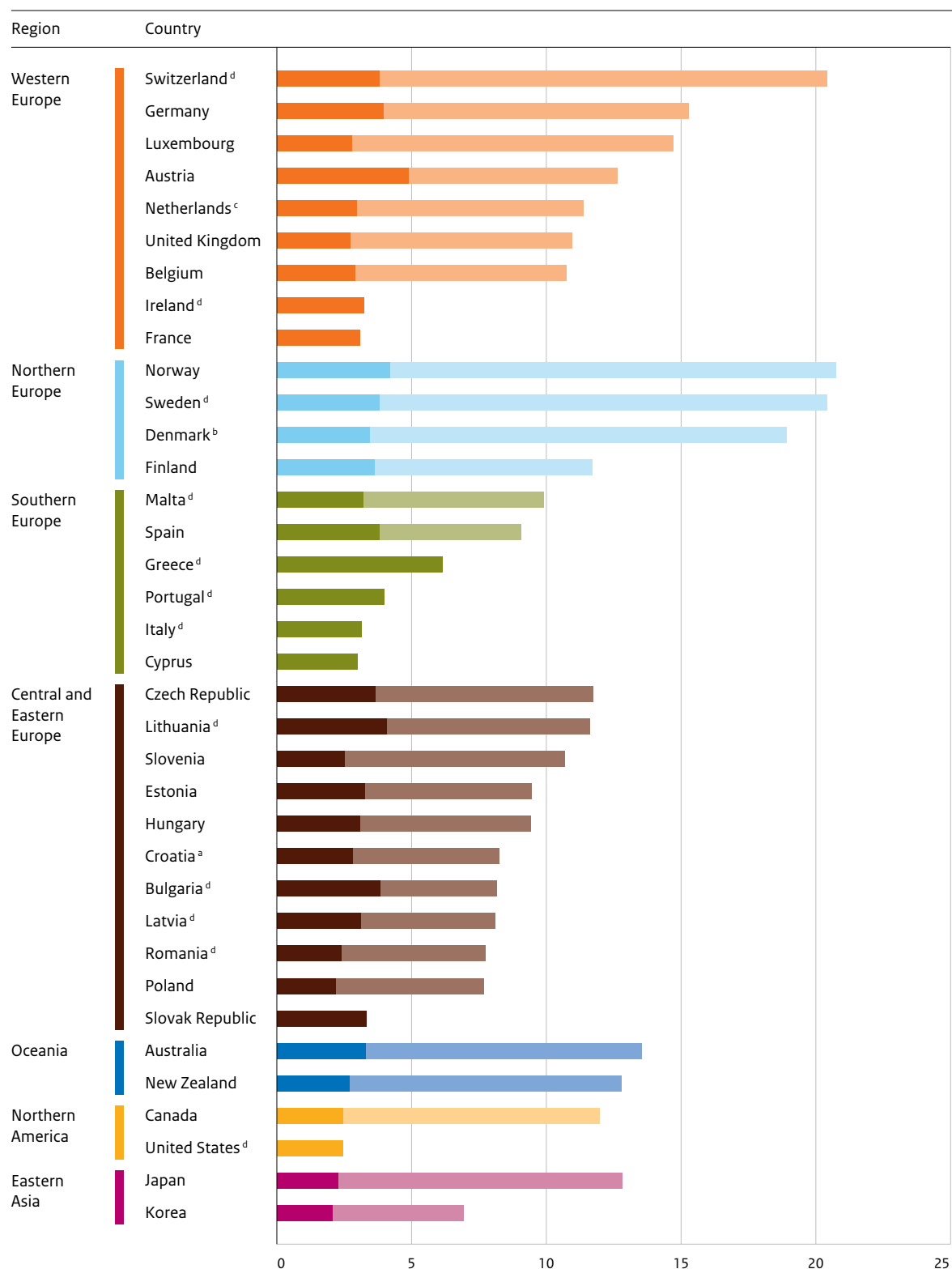
a In Greece and Australia the expenses on nursing and residential care facilities are reported to be 0% of all health expenditure; b 2008; c 2009; d 2010; e 2011. Source: oecd (<http://stats.oecd.org/>) and Eurostat (<http://ec.europa.eu/eurostat/data/database>); scp treatment.

hospitals    nursing and residential care facilities    ambulatory care    medical goods    other



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Figure 3.4 Number of practising physicians and nurses per 1,000 population in 2012



a 2008; b 2009; c 2010; d 2011. Source: OECD (<http://stats.oecd.org>) and Eurostat (<http://ec.europa.eu/eurostat/data/database>); SCP treatment.

physicians nurses





### 3.4 Outputs

The production, or output, of the health sector is measured using four indicators: the number of doctors' consultations<sup>3</sup> per capita; the number of hospital discharges; the percentage of the elderly population that use long-term care; and the percentage of the population aged 65 or over that have been vaccinated against influenza. The output index thus covers three major areas of the health sector, namely the cure sector (hospitals and physicians), the care sector and prevention. Although these output indicators approximate the production of the health sector, they do not on their own give any indication of the performance of the sector. A high production number of, say, doctors' consultations, could indicate a highly accessible care system, but could also be an indication of a less healthy population.

#### 3.4.1 Doctors' consultations

*Doctors' consultations highest in Korea and Japan, lowest in Cyprus and Northern Europe*

The highest numbers of doctors' consultations per capita are found in the Eastern Asian countries (13+ visits; Table 3.6), closely followed by Hungary, the Czech Republic and the Slovak Republic. The Nordic countries are among the countries where residents visit their physicians least often. Of all countries, the people of Cyprus have the lowest number of doctors' consultations (2.3 visits per capita), a number that has been fairly stable since 1995. However, this low number is not representative for all Southern European countries: the Italian (though measured in earlier years) and Spanish populations visit their physician as often as average in all countries (around seven visits per capita per annum), although that number has been declining in Spain. In general, there are no extreme changes in the number of visits to the doctor over time. Some countries show a slight decline in the frequency, others a slight rise. The largest increase is found in Germany, with growth exceeding 2% per year since 1995.

#### 3.4.2 Hospital discharges

Another way to measure the production of the cure sector is to look at the number of discharges from hospitals per 100 members of the population. On average, there were 16 discharges for every 100 people in 2012 (Table 3.7).


































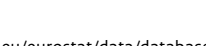
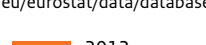
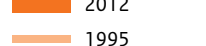
<sup>3</sup> These are mainly visits to the office of a general practitioner, but also includes home visits from that same practitioner and physicians of out-patient departments of hospitals.



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Table 3.6 Doctors' consultations 1995-2012 (in number of visits per capita)

For reading instructions see page 49

Region	Country	1995	2000	2005	2010	2012	2012	2012 vs 1995
Western Europe	Germany	6.8	▲ +0.9	▲ +0.4	▲ +1.8	▼ -0.2	9.7 <sup>h</sup>	
	Belgium	7.7	▼ -0.1	▼ -0.4	▲ +0.2	0.0	7.4 <sup>h</sup>	
	Austria	6.3	▲ +0.4	0.0	▲ +0.2	0.0	6.9 <sup>h</sup>	
	France	6.4	▲ +0.5	▲ +0.1	▼ -0.3	▲ +0.1	6.8 <sup>h</sup>	
	Netherlands	5.7	▲ +0.2	▼ -0.5	▲ +1.2	0.0	6.6 <sup>h</sup>	
	Luxembourg	6.2	▲ +0.2	▲ +0.1	▼ -0.1	▲ +0.2	6.6 <sup>h</sup>	
	United Kingdom	6.1	▼ -0.8	▼ -0.3	0.0	5 <sup>f</sup>	.	
	Switzerland	.	3.4 <sup>c</sup>	▲ +0.6	4 <sup>e</sup>	.	.	
Northern Europe	Ireland	.	.	.	.	.	.	
	Norway	.	.	.	5.2 <sup>f</sup>	.	.	
	Denmark	4.1	▲ +0.1	▲ +0.3	▲ +0.1	4.6 <sup>g</sup>	.	
	Finland	4.1	▲ +0.1	▲ +0.1	0.0	▼ -0.1	4.2 <sup>h</sup>	
Southern Europe	Sweden	3.0	▼ -0.2	0.0	▲ +0.2	0.0	3.0 <sup>h</sup>	
	Spain	7.8	.	8.1 <sup>d</sup>	▼ -0.6 <sup>f</sup>	▼ -0.1	7.4 <sup>h</sup>	
	Italy	6.6 <sup>a</sup>	▼ -0.5	▲ +0.9	7	.	.	
	Portugal	3.2	▲ +0.3	▲ +0.4	▲ +0.2	▲ +0.1	4.2 <sup>h</sup>	
	Greece	4.3	0.0	▼ -0.4	3.9	.	.	
	Cyprus	1.9	▲ +0.1	0.0	▲ +0.3	0.0	2.3 <sup>h</sup>	
Central and Eastern Europe	Malta	.	.	.	.	.	.	
	Hungary	10.4	▲ +0.7	▲ +1.8	▼ -1.3	▲ +0.2	11.8 <sup>h</sup>	
	Czech Republic	12.5	▲ +0.1	▲ +0.6	▼ -2.2	▲ +0.1	11.1 <sup>h</sup>	
	Slovak Republic	11.0 <sup>a</sup>	▲ +3.8	▼ -3.5	▲ +0.3	▼ -0.6	11.0 <sup>h</sup>	
	Lithuania	7.1	▼ -0.7	▲ +0.4	▲ +0.1	▲ +0.3	7.2 <sup>h</sup>	
	Poland	5.4	0.0	▲ +0.9	▲ +0.3	▲ +0.2	6.8 <sup>h</sup>	
	Estonia	.	6.3	▲ +0.1	▼ -0.4	▲ +0.6	6.6 <sup>h</sup>	
	Slovenia	.	.	6.6 <sup>d</sup>	▼ -0.2	▲ +0.1	6.5 <sup>h</sup>	
	Latvia	4.8	0.0	▲ +0.5	▲ +0.6	▲ +0.4	6.3 <sup>h</sup>	
	Croatia	4.8	▲ +2.2	▼ -0.1	▼ -0.8	▼ -0.1	6.0 <sup>h</sup>	
	Bulgaria	5.5	▼ -0.1	5.4 <sup>b</sup>	.	.	.	
Oceania	Romania	8.0	▼ -2.9	▼ -0.4	0.0	▼ -0.2	4.5	
	Australia	6.7	▼ -0.3	▼ -0.3	▲ +0.5	▲ +0.3	6.9	
Northern America	New Zealand	.	.	.	.	3.7	3.7	
	Canada	6.5	▲ +0.7	▲ +0.6	▼ -0.1	▲ +0.2	7.9 <sup>h</sup>	
Eastern Asia	United States	3.3	▲ +0.4	▲ +0.3	0.0	4 <sup>g</sup>	.	
	Korea	.	.	11.8	▲ +1.1	▲ +1.4	14.3	
	Japan	14.6	▼ -0.2	▼ -0.7	▼ -0.6	▼ -0.1	13.0 <sup>h</sup>	

a 1994; b 1999; c 2002; d 2006; e 2007; f 2009; g 2010; h 2011. Source: oecd (<http://stats.oecd.org/>) and Eurostat (<http://ec.europa.eu/eurostat/data/database>); scp treatment.

▲ largest increase  
▼ largest decrease

2012  
1995



## HEALTH

Table 3.7 Number of hospital discharges per 100 members of the population, 1995-2012

For reading instructions see page 49

Region	Country	1995	2000	2005	2010	2012	2012	2012 vs 1995
Western Europe	Austria	23	▲ +3	▲ +1	▲ +1	▼ -1	27	27
	Germany	18	▲ +2	▲ +2	▲ +2	▲ +1	25	25
	Switzerland	.	16	0	▲ +1	0	17	17
	France	.	19	▼ -2	0	0	17	17
	Belgium	.	16	▲ +1 <sup>e</sup>	0	17 <sup>h</sup>	.	.
	Luxembourg	.	19	▼ -2	▼ -2	0	15	15
	Ireland	12	▲ +2	0	▼ -1	▲ +1	14	14
	United Kingdom	.	13	▲ +1	0	▼ -1	13 <sup>i</sup>	13 <sup>i</sup>
	Netherlands	10	▼ -1	▲ +1	▲ +2	0	12	12
Northern Europe	Norway	15	▲ +1	▲ +2	0	18	.	.
	Finland	.	21	▼ -1 <sup>d</sup>	▼ -12	▲ +10	18	18
	Denmark	.	17	0	0	17	.	.
	Sweden	.	16	0	0	16	.	.
Southern Europe	Greece	14	▲ +2	▲ +3	▲ +1	20 <sup>f</sup>	.	.
	Italy	.	17	▼ -2 <sup>d</sup>	▼ -1	▼ -2	12	12
	Portugal	9	0	0	▲ +2	11 <sup>h</sup>	.	.
	Spain	11	0	0	▼ -1	0	10	10
	Malta	.	.	.	7	▲ +1	8 <sup>i</sup>	8 <sup>i</sup>
	Cyprus	.	.	.	.	8	8 <sup>i</sup>	8 <sup>i</sup>
Central and Eastern Europe	Bulgaria	.	15	▲ +6	▲ +5	▲ +1	27 <sup>i</sup>	27 <sup>i</sup>
	Lithuania	.	23	0 <sup>d</sup>	0	▲ +1	24 <sup>i</sup>	24 <sup>i</sup>
	Romania	.	21	▼ -1	▲ +4	▼ -2	22 <sup>i</sup>	22 <sup>i</sup>
	Slovak Republic	.	19	0	0	▲ +1	20	20
	Hungary	.	.	25	▼ -4	▼ -1	20	20
	Czech Republic	.	20	▲ +2	▼ -1	▼ -1	20	20
	Slovenia	14 <sup>b</sup>	▲ +2	0	▲ +1	0	17	17
	Estonia	.	20	▼ -2	0	▼ -1	17	17
	Poland	.	.	14	▲ +2	0	16	16
	Croatia	.	13	▲ +3	0	▼ -1	15	15
	Latvia	.	.	.	.	.	.	.
Oceania	Australia	17	▼ -1	0	▲ +1	0	17 <sup>i</sup>	17 <sup>i</sup>
	New Zealand	.	14	0	▲ +1	0	15	15
Northern America	United States	13	0	0	0	13	.	.
	Canada	11	▼ -2	0	▼ -1	0	8 <sup>i</sup>	8 <sup>i</sup>
Eastern Asia	Korea	7 <sup>a</sup>	▲ +1 <sup>c</sup>	▲ +2	▲ +4	▲ +2	16	16
	Japan	10 <sup>a</sup>	0 <sup>c</sup>	▲ +1	0 <sup>b</sup>	0	11 <sup>i</sup>	11 <sup>i</sup>

a 1996; b 1997; c 1999; d 2001; e 2002; f 2007; g 2008; h 2009; i 2011. Source: OECD (<http://stats.oecd.org/>) and Eurostat (<http://ec.europa.eu/eurostat/data/database>); SCP treatment.

▲ largest increase  
▼ largest decrease

2012  
1995

*Eastern European countries have more hospital discharges*

Almost all Central and Eastern European countries have much higher figures, with over 27 discharges for every 100 people in Bulgaria and 24 in Lithuania. The Western European countries show a mixed picture. Some countries show a high number of discharges (27 in Austria and 25 in Germany) and others show a below-average number (12 discharges in the Netherlands and 13 in the United Kingdom). The Southern European, Eastern Asian and Northern American countries and Oceania show average or below-average numbers in 2012. Like doctors' consultations, the number of discharges is very stable over time, with a few exceptions. Bulgaria, Germany and Greece have seen a significant increase in hospital production, resulting in the highest numbers of discharges for the two former countries in 2012 (27 and 25 discharges, respectively, for every 100 people in the population), along with Austria and Lithuania. Italy is the only country that has seen a significant decrease in the number of discharges from hospitals. Canada has the lowest number hospital discharges, along with Cyprus and Malta.

### 3.4.3 Long-term care recipients

The primary objective in the cure sector is to cure a health problem. If that is not possible, the care will aim at rehabilitation, improvement in quality of life, mitigating health complaints, preventing further progression of the disease or ailments, or preventing a relapse. Measuring the production of the (long-term) care sector is less straightforward. In the care sector the objective is not to cure long-term health problems, but to provide the time, help and attention recipients need to help them cope with these ailments in day-to-day life. An indication of the production in this sector is the percentage of long-term care recipients within the population aged over 65. The OECD defines long-term care as a range of services required by persons with a reduced degree of functional capacity, physical or cognitive, and who are consequently dependent for an extended period of time on help with basic activities of daily living (adl), such as bathing, dressing, and using the bathroom. This personal care component is frequently provided in combination with help with basic medical services such as help with wound dressing, and medication. Long-term care can also be combined with lower-level care such as help with housework, meals, shopping and transportation. It includes both home care and institutional care. Unfortunately, this information is not available for all countries. It is especially scarce in Southern and Central and Eastern Europe (Table 3.8). In the remainder of the countries, the share of long-term care users varies greatly.

*About one fifth of Swiss and Dutch older people receive long-term care*

The highest percentage of long-term care recipients in the population aged 65 years and older is found in Switzerland and the Netherlands (21%



## HEALTH

Table 3.8 Long-term care recipients, 1995-2009 (in percentages of the population aged over 65)

For reading instructions see page 49

Region	Country	1995	2000	2005	2010	2012	2012	2012 vs 1995
Western Europe	Switzerland	.	20	▼ -1	▲ +1	▲ +1	21	21
	Netherlands	.	.	21	▼ -1	0	20	20
	Belgium	.	13	▲ +1	14 <sup>c</sup>	.	.	.
	Luxembourg	.	8	▲ +3	▲ +2	0	13	13
	Germany	.	11	0	0	▲ +1	12	12
	United Kingdom	.	11	0	11 <sup>c</sup>	.	.	.
	France	.	.	9	▲ +2	11	.	.
	Ireland	.	.	4	0	0	4	4
	Austria	.	.	.	.	.	.	.
Northern Europe	Sweden	17	0	0	17	.	17	17
	Norway	.	17 <sup>b</sup>	▲ +1	0	▼ -1	17	17
	Denmark	.	.	18 <sup>d</sup>	0	▼ -2	16	16
	Finland	.	12	0	0	0	12	12
Southern Europe	Spain	.	.	.	7	0	7	7
	Italy	.	2	▲ +1	▲ +1	0	4	4
	Portugal	.	.	.	1	0	1	1
	Cyprus	.	.	.	.	.	.	.
	Greece	.	.	.	.	.	.	.
	Malta	.	.	.	.	.	.	.
Central and Eastern Europe	Hungary	.	.	9	▲ +2	▲ +2	13	13
	Czech Republic	.	.	.	13 <sup>f</sup>	.	.	.
	Slovenia	.	.	.	.	12	12 <sup>g</sup>	12
	Estonia	.	.	.	7	▼ -1	6	6
	Slovak Republic	.	.	3	0	0	3	3
	Bulgaria	.	.	.	.	.	.	.
	Croatia	.	.	.	.	.	.	.
	Latvia	.	.	.	.	.	.	.
	Lithuania	.	.	.	.	.	.	.
	Poland	.	.	.	.	.	.	.
Romania	.	.	.	.	.	.	.	
Oceania	New Zealand	.	.	.	18	0	18	18
	Australia	.	.	11	▲ +3	▲ +1	15	15
Northern America	United States	.	7	.	6 <sup>e</sup>	.	.	.
	Canada	4 <sup>a</sup>	▼ -1	▲ +1	▼ -1	3 <sup>f</sup>	.	.
Eastern Asia	Japan	.	.	13	.	.	.	.
	Korea	0.2	▲ +0	▲ +1 <sup>c</sup>	▲ +6	▼ -1	6	6

a 1996; b 2001; c 2004; d 2006; e 2007; f 2009; g 2011. Source: OECD (<http://stats.oecd.org/>); SCP treatment.▲ largest increase  
▼ largest decrease2012  
1995

and 20%, respectively), followed by the Northern European Countries and Oceania. The share of older people receiving help with their long-term care needs is low in Canada, Italy and the Slovak Republic, but especially in Portugal: just over 1% of Portuguese older adults receive long-term care. In general, the percentage of long-term care recipients among older adults increases over time, as expected in the light of the increased life expectancy and ageing populations.

However, a low percentage of elderly people in receipt of long-term care does not mean that the rest of this population are not receiving any care. The vast majority of the care received by those in need is provided by informal caregivers (Colombo et al. 2011).<sup>4</sup> A recent study among the population aged 50 and over in sixteen European countries showed that, on average, nearly 85% of the European older people with severe physical, mental or cognitive impairments receive informal care (Verbeek-Oudijk et al. 2014). There are pronounced country differences. In the Southern European countries the informal care received from within the household is especially high compared to the Northern European countries. This stems from differences in the number of generations living in the same household, and the opportunities to use formalised care (Bolin et al. 2008; Pickard 2011). In addition, most of the responsibility for long-term care in Southern Europe is assigned to family networks and there is little professional care provision (Pinchler and Wallace 2007; Fonseca et al. 2010). By contrast, responsibility in Northern European countries and some Western European countries lies mainly with the government, and this is reflected in a more extensive supply of formal long-term care services.

#### 3.4.4 Influenza vaccination among population aged 65 and over

Prevention is also an important part of the health care system and can be described as a set of actions that are directed at preventing illness and promoting health in order to reduce the need for secondary or tertiary health care. It includes health assessments, immunisation, health education, early diagnosis and recognition of health problems, and rehabilitation. Studies have shown a wide range of health promotion and disease prevention interventions that address risk factors to health to be effective (Mercur et al. 2013). They include measures to reduce the risk of smoking and alcohol consumption, increase physical activity and promote healthier diets, protect psychological and emotional well-being, reduce environmental impact and make road environments safer. Unfortunately, there is a scarcity of comparable data on the preventative efforts promoted by health systems for the number of countries covered in this study. To gain some insight into the production of preventative measures generated by health systems, we are limited to the vaccination of the over-65 population against influenza. This is a very partial measurement of prevention, and immunisation against influenza is a minor issue compared to prevention

<sup>4</sup> Colombo et al. (2011) describe the use and provision of long-term care in the OECD-countries.



of smoking, alcohol consumption, physical activity and overweight. The country comparison of the degree of influenza vaccination can therefore only be seen as the extra efforts by the public health sector to prevent disease among the populations. Furthermore, countries could differ in the effort devoted to the different types of prevention. High influenza vaccination rates in a particular country do not necessarily mean that that country makes major efforts to combat smoking.

#### *Wide variations between countries in influenza vaccination rates*

The percentage of adults aged 65 years and older who are vaccinated against influenza varies greatly between the countries included in this study (Table 3.9). Immunisation rates are highest in the United Kingdom and Korea (both exceeding 75% of the over-65 population). The Western and Southern European countries, as well as Oceania, Northern America and Eastern Asia can be characterised as having high influenza vaccination rates amongst their population aged 65 and over. The vaccination rate is around the overall average of 40% in most of the Northern European countries, and below average in Central and Eastern Europe. Influenza vaccination is almost non-existent in Latvia and Estonia (less than 2%). The percentage also varies over time for most countries, rising between 1995 and 2000/2005 and subsequently declining slightly up to 2012.

### 3.5 Explaining differences in outcomes

Health is influenced by a range of factors related to each individual's life, such as genes, lifestyle, access to health care and other health services, physical and social environment, and welfare. In Figure 3.1 we saw that health status differed between the 36 countries that are described in this report. This section seeks to quantify the relative impact of various factors on health. The effects must be seen as relationships without a causal interpretation, because the causality could operate in either direction. Following Or (2000), we make a distinction between factors describing the health system, lifestyle and socioeconomic environment.

#### 3.5.1 Statistical methods

We use available country-level data over the period 1990-2012 to estimate the association between various explanatory variables and health outcomes.<sup>5</sup> Consequently, the number of countries and years included in the analysis depends on the information available for the explanatory variables. To express the health outcome we use the index derived from life expectancy and infant mortality, as described in section 3.2.4, but now constructed over the period 1990-2012. The availability of multiple time series observations per country allows us to conduct a fixed effects analysis, which was also used in Chapter 2 (Section 2.4.2) for education.

<sup>5</sup> The model is based on a health production function (Thornton 2002).



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Table 3.9 Percentage of population aged 65 and over who are vaccinated against influenza

For reading instructions see page 49

Region	Country	2000	2005	2010	2012	2012	2012 vs 2000
Western Europe	United Kingdom	65	▲ +10	▼ -2	▲ +3	76	
	Netherlands	76	▲ +1	▼ -3	74 <sup>h</sup>	.	
	Belgium	58	▲ +6 <sup>d</sup>	▲ +1	65 <sup>g</sup>	.	
	Ireland	.	63 <sup>a</sup>	▲ +1	▼ -7	57	
	Germany	56 <sup>a</sup>	▲ +7	▼ -7	56 <sup>h</sup>	.	
	France	65	▼ -1	▼ -8	▼ -3	53	
	Switzerland	51	▲ +8	▼ -13	46 <sup>i</sup>	.	
	Luxembourg	43 <sup>a</sup>	▲ +11	▼ -7	▼ -2	46	
	Austria	.	36 <sup>e</sup>	.	.	.	
Northern Europe	Sweden	.	57 <sup>f</sup>	▲ +7	64 <sup>g</sup>	.	
	Denmark	6 <sup>b</sup>	▲ +28	▲ +12	▼ -3	43	
	Finland	25 <sup>a</sup>	▲ +27	▼ -12	▼ -5	35	
	Norway	.	.	8	▲ +3	11	
Southern Europe	Italy	41	▲ +26	▼ -1	▼ -3	63	
	Spain	62	▲ +8	▼ -13	0	57.0	
	Portugal	42 <sup>a</sup>	0	▲ +6	▼ -5	43 <sup>j</sup>	
	Greece	.	.	41 <sup>h</sup>	.	.	
	Cyprus	.	34 <sup>c</sup>	▲ +7	41 <sup>g</sup>	.	
	Malta	.	.	.	.	.	
Central and Eastern Europe	Croatia	28	▲ +12	▼ -6	▼ -4	30	
	Hungary	37 <sup>b</sup>	0	▼ -7	▼ -1	29	
	Czech Republic	17 <sup>b</sup>	.	22 <sup>g</sup>	.	.	
	Slovenia	35	0.0	▼ -17	▼ -1	17	
	Slovak Republic	21	▲ +8	▼ -5	▼ -9	15	
	Poland	.	.	12 <sup>h</sup>	.	.	
	Lithuania	.	2	▲ +15	▼ -7	10	
	Romania	.	17 <sup>e</sup>	▲ +2	▼ -10	9 <sup>j</sup>	
	Bulgaria	.	.	5 <sup>g</sup>	.	.	
	Latvia	.	3 <sup>f</sup>	▼ -2	▲ +1	2	
	Estonia	.	.	1	0	1	
Oceania	Australia	74	▲ +4 <sup>e</sup>	▼ -3	75 <sup>h</sup>	.	
	New Zealand	51 <sup>b</sup>	▲ +10	▲ +6	▼ -3	64	
Northern America	United States	64	▼ -4	▲ +4	▲ +3	67 <sup>j</sup>	
	Canada	63	▲ +8	▼ -12	▲ +5	64	
Eastern Asia	Korea	.	77	0	0	77	
	Japan	29 <sup>a</sup>	▲ +20	▲ +4	▼ -3	50	

a 2001; b 2002; c 2003; d 2004; e 2006; f 2007; g 2008; h 2009; i 2010; j 2011. Source: oecd (<http://stats.oecd.org/>) and Eurostat (<http://ec.europa.eu/eurostat/data/database>); scp treatment.

▲ largest increase  
▼ largest decrease

2012  
2000





Table 3.10 Estimated relationship between health outcomes and possible explanatory factors, 1995-2012

		Main analysis		Extended analysis	
		$\beta$ estimate	Robust standard error	$\beta$ estimate	Robust standard error
Socioeconomic	GDP per capita, PPP (USD 1,000)	0.050 ***	0.012	0.050 ***	0.011
Lifestyle	Alcohol consumption (litres of pure alcohol)	-0.012 **	0.005	-0.009 **	0.004
	Daily smokers (%)	-1.611	1.297	2.717 *	1.328
	Overweight (%)	0.298	1.388	-0.760	0.833
Health care system	Total health expenditure as percentage of GDP	0.090 **	0.035	0.159 ***	0.035
	Out-of-pocket expenditures			-0.017	0.013
	Private insurance expenditures			0.013 **	0.006
Constant		-1.857 **	0.803	-1.591	1.135
Number of observations		199		119	
Number of countries		29		25	
R-squared		0.92		0.95	

Notes: The dependent variable is the health outcome index score (1990-2012). \*\*\*, \*\*, and \* denote significance at the 1%, 5% and 10% levels, respectively. Information for covariates is not fully available for all 36 countries and all years between 1990-2012.

Using fixed effects analysis effectively means that we are able to control for all time-invariant ('structural') country-specific unobserved determinants of health and hence reduces concerns about endogeneity that could lead to biased estimates.<sup>6</sup> By controlling for country heterogeneity, fixed effects analysis can provide additional insights in the relationship between changes in the measured determinants and changes in the health index over time.<sup>7</sup>

### 3.5.2 Results

With respect to the relationship between the outcome and its determining factors, it is not uncommon to find contradicting results (Or 2000; Starfield and Shi 2002) due to differences in models, countries and timespan. In this section we aim to find a relationship between the health outcome over the period 1990-2012 and factors that are related to the socioeconomic environment, lifestyle and health system. As mentioned earlier, the analysis is partially based on Or's analysis, with some modifications.<sup>8</sup> Results showing the  $\beta$  estimate with robust standard errors (clustered by country) are displayed in table 3.10.

<sup>6</sup> We estimate the following (preferred) fixed effects model:  $y_{it} = \beta X_{it} + \alpha_c + \alpha_t + \varepsilon_{it}$ , where the subscripts  $c$  and  $t$  denote country and year, respectively.

<sup>7</sup> We did not include a time trend in the analysis. Since quite a lot of the explanatory variables grow or decrease continually over time, adding a time trend results in less significant effects of these variables.

<sup>8</sup> An attempted replication of the analysis by Or(2000) using the current variables is available on request with the authors.



*A higher GDP per capita is associated with better health outcomes*

It is well-known that a country's health status is related to the level of welfare. A higher GDP per capita corrected for Purchasing Power Parity (PPP), as an indicator for socioeconomic circumstances, is associated with better health (Table 3.10). Previous research suggests that better financial circumstances lead to better health as well as better consumptions such as food, housing and schooling (Mackenbach and McKee, 2013;), but several research papers have shown this relationship to be complicated. Although we expected to find similar associations for other socioeconomic indicators, such as education level and income, none of them were statistically significant (not shown in Table).

*Higher levels of alcohol consumption are detrimental to health*

Smoking, alcohol consumption and obesity are well known risk factors for the health status of individuals. Various studies have found a negative association between these lifestyle factors and health (Or 2000). However, the variance in lifestyles across countries is partly attributable to cultural factors rather than merely to health promotion efforts and the performance of the health system. Our main results, which have been controlled for time-stable cultural factors, show that higher alcohol consumption is related to poorer health outcomes. We find no significant country-level associations with health for the percentages of daily smokers and citizens who are overweight. This does not however imply that smoking and being overweight do not affect the health of individuals, as studies conducted at the level of individuals – rather than at country level – indicate that they do (see e.g. Merkur et al. 2013).

*Higher share of total health expenditure is associated with better health outcomes*

We use several indicators for the functioning of the health sector: the level of health expenditure, the way that expenditure is financed (public or private), the sectors on which it is spent on (care or cure, residential or ambulatory) and the accessibility of the sector. The public sector is often associated with more equitable care, and it can be argued that if a larger share of the population has access to health care, the population is likely to be healthier. On a local level, it is found that larger public health systems perform better than smaller ones, by spreading the fixed costs over more beneficiaries and taxpayers (Mays et al. 2006). However, the empirical evidence on the relationship between expenditure and health is mixed (Hitiris and Posnet 1992; Grubaugh and Santerre 1994; Moreno-Serra and Smith 2011). One reason for these mixed results is that it is very hard to find a good indicator for expenditure. In our analyses, we find that a higher share of total health expenditure is associated with better health (Table 3.10). When comparing public and private expenditure, we found no indication that a higher share of public health funding compared to private funding leads to better health. Looking at private expenditure more closely, however, we do find a positive association with health for expenditure funded through private insurance, but these results are



based on fewer countries and years (Table 3.10, extended analysis). In the literature, the link between health system coverage (measured here as expenditure through private insurance ) and health seems ambiguous and depends on the type of countries analysed (Moreno-Serra and Smith 2011). We do not find any associations with health for the various spending areas (not shown in Table).

*No difference in health between social health insurance and tax-financed health systems*

A lively debate is under way about the relative merits of social health insurance (SHI) and tax-financed health systems. It is argued that SHI systems are able to achieve better quality health care at a lower cost than tax-financed health systems. With this in mind, we include in our analysis an indicator of the method of financing: via social health insurance, tax-financing or a mixture of both. In order to be able to estimate the association between these three time-invariant indicators for the health system and the health outcome index, we use a slightly different estimation method.<sup>9</sup> Our results suggest no significant associations between these health system indicators and health. The results described in the literature are also mixed. According to Mackenbach and McKee (2013) there is no evidence that SHI systems achieve lower rates of amenable mortality (deaths from a collection of diseases, such as diabetes and appendicitis, that are potentially preventable given effective and timely health care). Put differently, tax-financed systems lead to higher mortality rates and thus poorer health outcomes. Most of the literature reports no significant relationship in either direction with health status indicators, except for higher health spending per capita (Wagstaff and Moreno-Serra 2008; 2009).

*Health output indicators are not associated with better health outcomes*

We do not find a significant relationship between health outcomes and indicators for the supply of services, such as the quantity of personnel, and more specifically the number of physicians per 1,000 persons and the number of nurses per 1,000 persons (not shown in Table). Nor do we find a relationship between adequate access to health care, as measured by the presence of gatekeepers and the influenza immunisation rate. Earlier research suggests that a higher immunisation rate reflects better health system coverage, which in turn leads to an improvement in health (Moreno-Serra and Smith, 2011).

*Decomposition of the factors influencing the health outcome index*

The finding that many of the explanatory variables do not appear to be relevant in explaining health outcomes is corroborated by an additional exercise in which we decompose the cross-country variation in the health outcome index.<sup>10</sup> We then find that 35% of the variation in the health outcome index is explained by variations in expenditure, GDP and risk

<sup>9</sup> To be able to estimate the relationship with the health outcome index and the time-invariant factors, we have to use a random effect model.

<sup>10</sup> The decomposition is based on Cornelissen (2008).



factors. Additionally, 43% of the variation is explained by country-fixed effects, which implies that differences in health outcomes across countries are explained more by differences in unobserved factors such as attitudes, culture and unmeasured differences in health behaviour across countries than by variation in observed factors. The remaining 22% of the variation is due to other, non-country-specific factors.

#### *Are low-performing countries catching up?*

Convergence, or the catch-up effect, implies that countries with initially lower levels of performance will tend to improve their performance faster than countries with initially higher levels of performance. To explore the convergence hypothesis, we regressed the 2000-2011 change in the health outcome index at the initial 2000 level, while controlling for the 1995-2000 change and some explanatory variables (see table A3.2 in the appendix to this chapter). The results suggest that a reduction of one point in the initial outcome index score in the year 2000 is associated with a 0.3-points higher subsequent 2000-2011 change. This negative association is statistically significant at the 1% level and is consistent with the idea of convergence.

In conclusion, we find that differences in outcomes between countries are determined by differences in welfare – measured here by national income – differences in the share of total public spending allocated to health, and differences in lifestyle, but that most of the variation found is due to unmeasured, country-specific effects.

### 3.6 Citizens' perceptions of the quality of the health care sector

How do citizens perceive the quality of the health sector? And do those perceptions of quality correlate with the performance of the health care sector in terms of health outcomes? In the previous edition of this report, confidence in the health care system was presented as an indicator for the perceived quality of the health care system (Jonker 2012: p. 180). Unfortunately, these data are no longer available for all countries.<sup>11</sup> More recently, in the European Quality of Life Survey (EQLS) for 2011-2012, more than 35,000 respondents in 27 EU Member States were asked how they would rate the quality of the health services in their country.

#### *Northern and Western Europeans give highest scores for quality of health services*

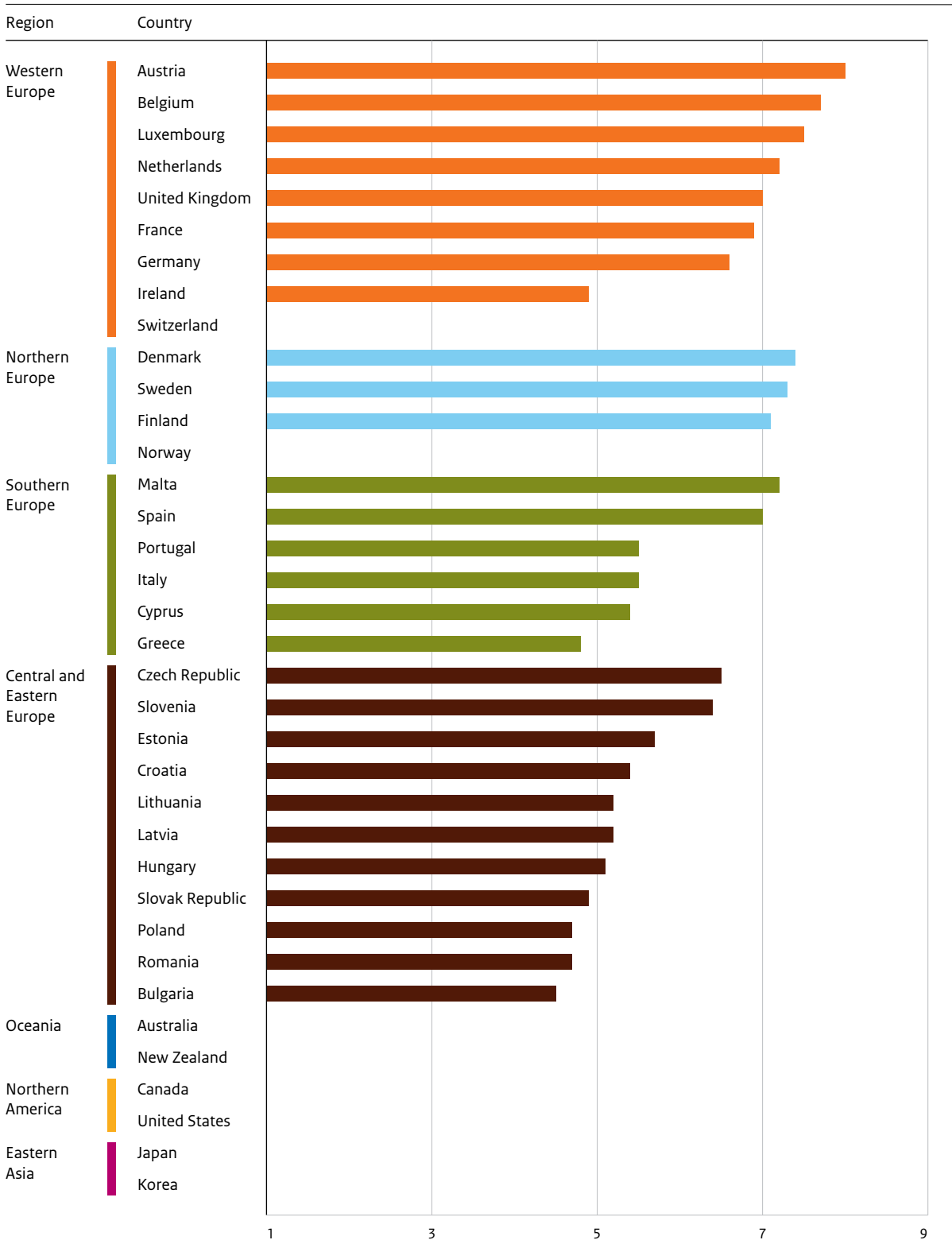
The citizens of Western and Northern Europe rate the quality of their health services positively, with the Irish as a distinct exception (Figure 3.5). Austrian health services receive the highest score of all (8 out of 10). In Southern Europe, the Spanish and Maltese health services are judged positively, while in the other countries the health services receive moderate scores. Lower still are the scores in many of the Central and Eastern European countries, although the Czech Republic and Slovenia stand out

<sup>11</sup> An update of the data used in Jonker 2012 will not be available until after 2015, when new data are collected.



HEALTH

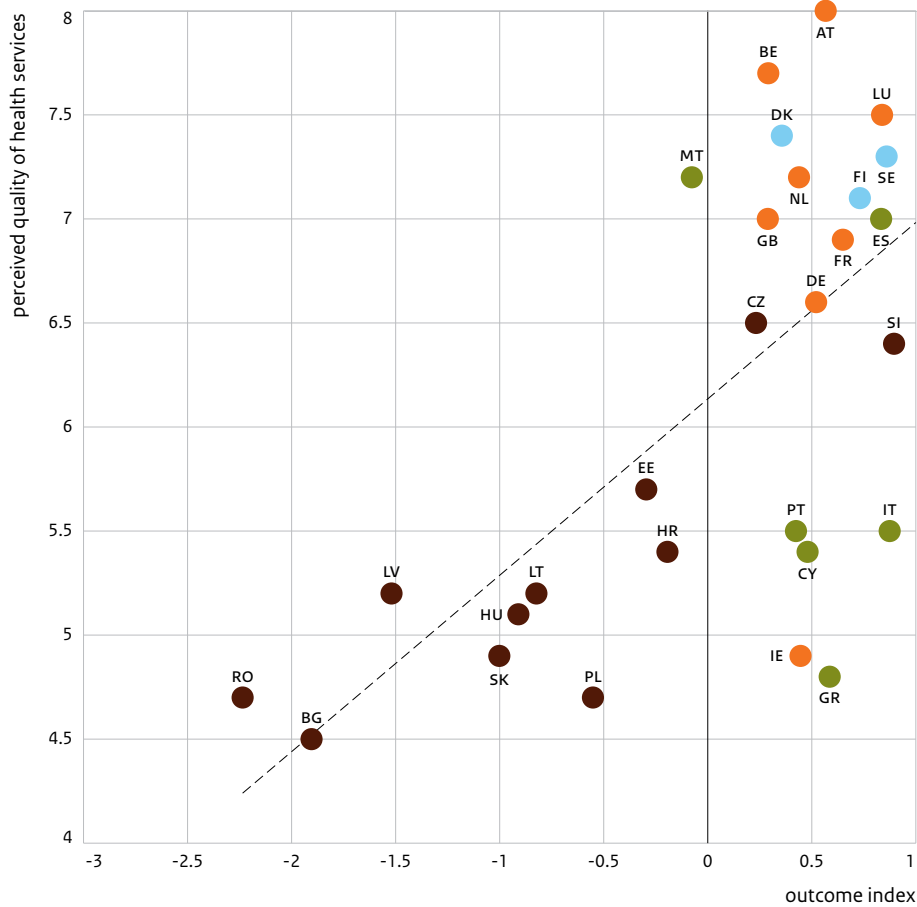
Figure 3.5 Perceived quality of health services (rated 1-10)



Source: EQLS 2012, <http://eurofound.europa.eu/surveys/data-visualisation/european-quality-of-life-survey-2012>.



Figure 3.6 Perceived quality of health services and the health outcome index, 2012



R-squared=0.4

Source x-axis: Outcome index as presented in Figure 3.1. y-axis: EQLS 2012. Q: How would you rate the quality of health service in your country (1-10).

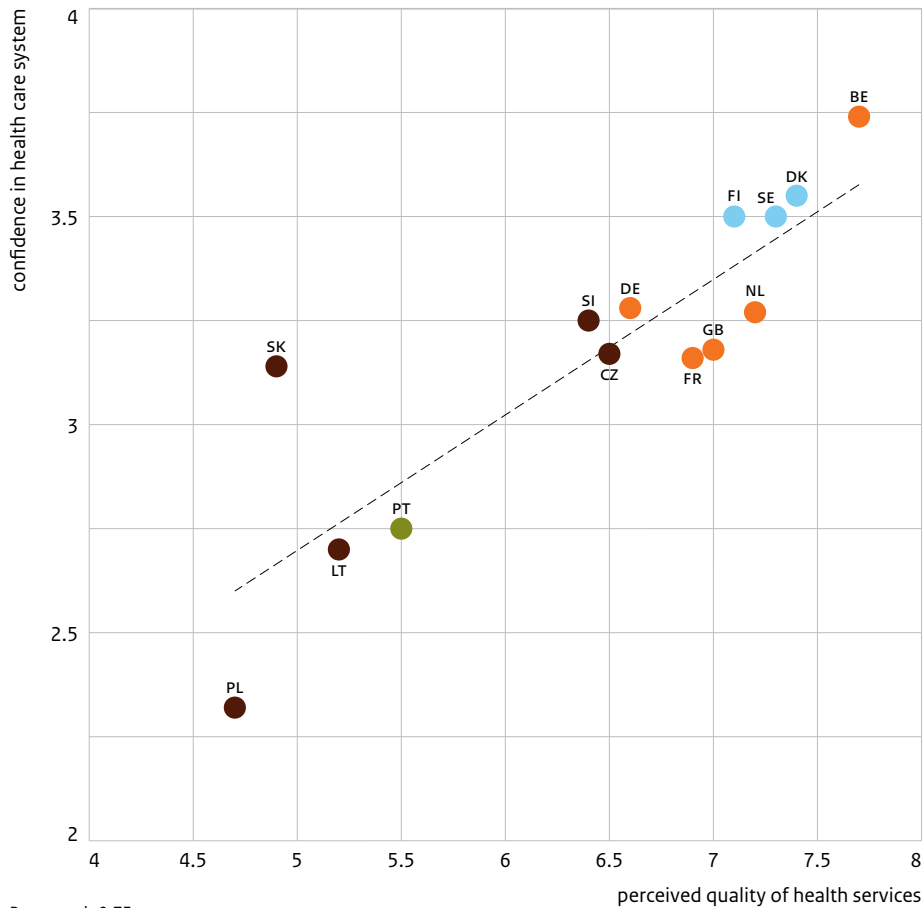
as positive exceptions, with scores above 6 out of 10. This is in line with our previous finding that Slovenia scores well on low infant mortality in general and high life expectancy compared to the other Central and Eastern European countries. Additional analysis confirmed that perceptions of the quality of health services are correlated to the health outcome index, implying that citizens in countries that perform better in terms of health outcomes report a higher quality of their country’s health services (Figure 3.6). The interdependence of these concepts is quantified by a statistically significant correlation coefficient of 0.4.

*Strong relationship between perceptions of quality of health services and confidence in health care system*

Combining previous data with the 2011-2013 edition of the International Social Survey Programme allows us to compare ‘quality’ with ‘confidence’



Figure 3.7 Perceived quality of health services and confidence in the health care system for 14 EU countries



Source x-axis: EQLS 2012. Q: How would you rate the quality of health service in your country (1-10). y-axis: ISSP 2011-2013. Q: How much confidence do you have in the health care system in [country]? Complete confidence (5) to no confidence at all (1).

for 14 countries (Figure 3.7). Perceptions of quality of health services and confidence in the system seem to run in parallel, with the perceived quality most likely preceding confidence in the health care system.

### 3.7 Conclusion

In this chapter we combined the outcome indicators 'life expectancy' and 'infant mortality' to create an outcome index that indicates a country's health performance. The highest scores in Europe were found for Slovenia, Italy, Sweden, Luxembourg, Norway and Spain, followed by most other Western and Northern European countries. All Central and Eastern European countries, except Slovenia and the Czech Republic, score



relatively low. Slovenia's good score is mainly attributable to its low infant mortality rate in 2012, which increased in 2013. Nevertheless, Slovenia and the Czech Republic are the positive exceptions among the Central and Eastern European countries.

We have shown that countries differ in the way the health sector is financed and the sectors to which the funding is allocated, but also in the number of physicians and nurses available to the population (input). Countries also show variation on several aspects of the production (output) of the system. In addition, there are clear differences in the changes in both funding and production levels. Health outcomes are not necessarily better in countries where more patients are treated and more older persons receive help, suggesting that health outcomes are not essentially influenced by the outputs of the health care system, but that other factors also play a role.

We attempted to explain differences in health performance by relating (changes in) the health outcome index to changes in inputs, outputs and various other factors. Differences in health performance between countries are partly explained by differences in national income, health expenditure (as a percentage of GDP) and lifestyle, but most variation is due to unmeasured country-specific influences such as culture, attitudes and health behaviour.

In general, health improved between 2005 and 2012, although the increase was greater for some countries than for others. This was confirmed by the additional analyses presented in Section 3.5, which show a catch-up effect for the less affluent countries where the health of their citizens is lagging behind other countries. This implies that the gap between the high and low-scoring countries is narrowing, thus diminishing the health inequalities between countries.

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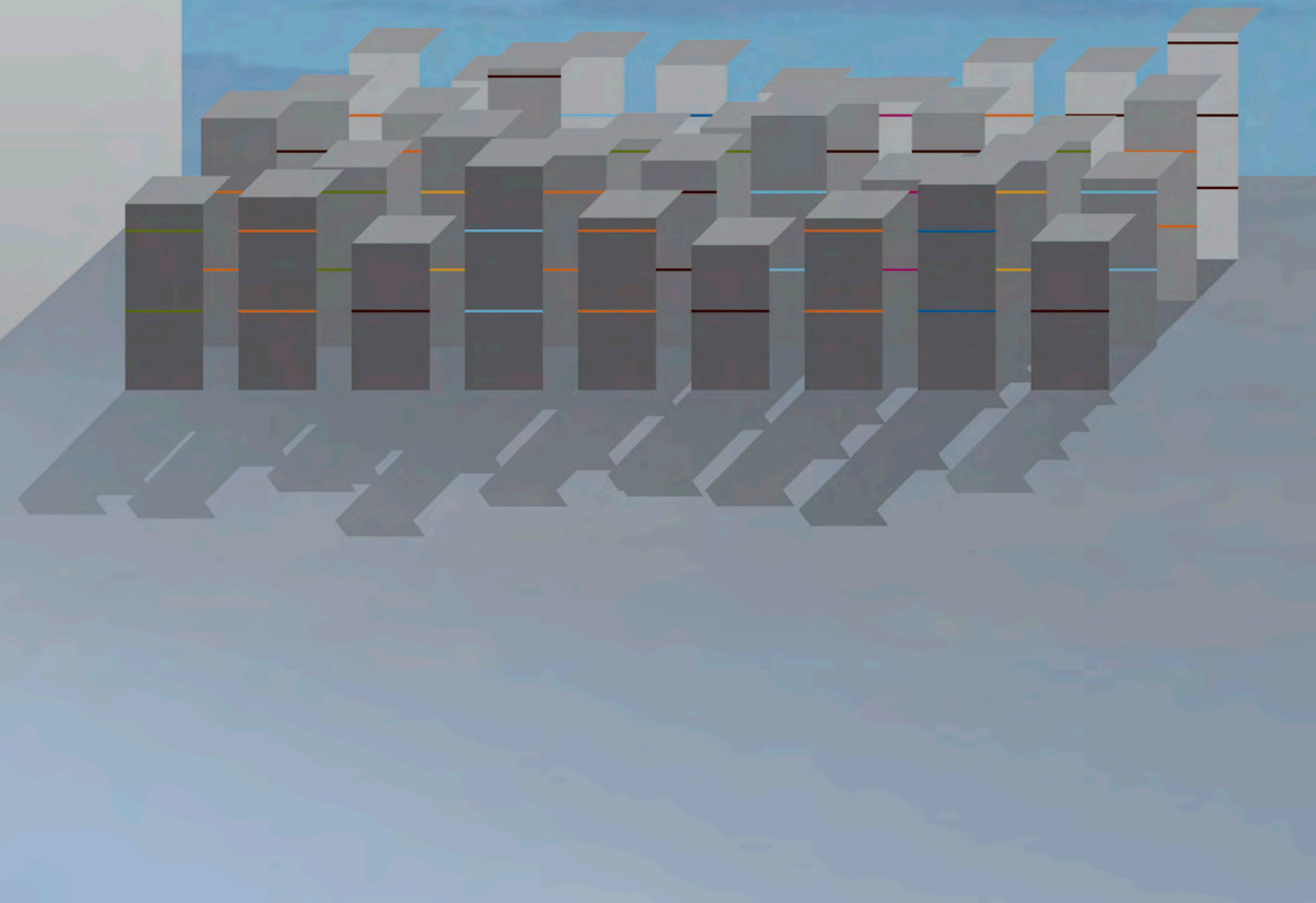
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Part III

# Basic analyses





# Social safety

Lonneke van Noije, Evert Pommer and Ab van der Torre

4

## 4.1 Introduction

### *Public safety policy*

Promoting social safety for citizens is a major policy objective for governments throughout the world. Policies are aimed at preventing as well as repressing criminal activities, the balance between which may be very skewed and divergent between countries. Over recent decades, social and physical incivilities – neither defined nor forbidden by law – and feelings of safety among the population have increasingly become a subject for social safety policy (Bauman 2001; Beck 1992; Boutellier 2002, 2005), at least in the Western world. As a consequence of this integration of crime-fighting into the broader policy field of safety, spending by the Dutch Ministry of Safety and Justice, for example, continued to rise for years, only coming to a halt in 2012 in the wake of the international economic crisis (TK 2013). This growth was rooted in the realisation, as early as the 1980s, that the usual judicial response was no longer sufficient to appease the public's indignation about crime and nuisance. From that point on, crime was no longer considered the exclusive domain of police and the judiciary. Today, the view prevails in many Western countries that a safe society will only come within reach if everyone does their bit. Law enforcement should be a last resort, following a broad range of preventive efforts. Hence, the responsibilities of governmental (most notably the police and municipalities) and non-governmental actors (organisations, businesses and citizens alike) have expanded. Prevention, the fight against incivility and public feelings of safety are considered particular areas of shared responsibility (Van Noije 2012). The recording, investigation and solving of crimes is still largely the responsibility of the police – although in some (mostly Anglo-Saxon) countries it is shared with private security firms (Van Steden and Sarre 2007), while the courts are responsible for prosecution and punishment. As private initiatives are much more decentralised, scattered and cursory, as we shall explain later on, the focus in this chapter is on public policy.

### *National policies in an international context*

Encouraged by global trends such as digitalisation and immigration, organised crime and white-collar crime in particular are less and less confined within national borders and pose a growing challenge to national criminal justice systems. Apart from the ever-growing international exchange of knowledge and best practices, there are increasing efforts at cross-border cooperation to combat crime. Cooperation at the European level is embodied in organisations such as Europol and Eurojust, the latter being created in 2002 to coordinate the activities of national authorities responsible for

prosecution in criminal cases involving at least two EU Member States. Besides supranational legal bodies, intergovernmental cooperation in the EU is also facilitated by the European Council, which is preparing a follow-up for the Stockholm Programme (2010-2014). These subsequent roadmaps for police and judicial cooperation are mainly limited to cross-border crime, such as human trafficking, drug trafficking, international terrorism, fraud, child pornography and other forms of cybercrime. For the most part, therefore, fighting crime remains a responsibility of national institutions.

Despite the fact that every country has its own system of law enforcement, some general distinctions can be made. Most notable is the distinction between the Anglo-Saxon common law tradition and the continental European civil law tradition. In the common law tradition, jurisdiction is based on precedents created by judges, whereas in the continental European tradition the legislator is the primary lawmaker. The Southern and Central European countries and most of Western Europe are characterised by a centralised court system. In the Netherlands and Luxembourg the absence of lay judges is noteworthy. Punitive (rather than resocialising) systems are especially common of Southern and Central European countries and the USA.

National safety strategies depend heavily on such traditions and on existing infrastructure. Furthermore, they vary depending on the nature and gravity of the problems a country is faced with, the available resources and, not least, on prevailing cultural and political factors. As a consequence, the emphasis in national safety strategies may oscillate between repression and prevention according to the political colour of the incumbent administration. National strategies are also influenced by global developments such as the recent economic crisis. Cut-backs, reducing local budgets for crime prevention or resulting in demands for greater efficiency and rationalisation in the prison system, inevitably leave their mark on priorities, or even on productivity.

#### *Goal of this chapter*

In this chapter we explore cross-national differences in crime rates (outcomes) and relate them to various characteristics of national safety policies (inputs and outputs). In our assessment of social safety policy we pay attention to both preventive efforts and law enforcement. Both strategies are essential to the performance of a country's social safety policy. To illustrate this, a small prisoner population may point to failing police performance (many offenders on the loose), but may just as easily indicate highly effective prevention (few offenders in the first place). For reasons we will explain later in this chapter, only inputs and outputs relating to law enforcement are subjected to quantitative analysis.

It is tempting to interpret the association between policy inputs, outputs and crime rates in terms of policy performance. However, this would be a mistake, partly because high crime levels may just as easily result from inadequate safety measures as from a well-organised system of crime

*registration.* In Western societies, especially, where trust in institutions is relatively high, it may be expected that crimes are more often reported to and reliably recorded by the police. This immediately inflates crime statistics, whereas the actual number of offences may well be lower than in many developing countries. This is known as the safety paradox. We will return to the delicate issue of comparing international crime in a separate section.

Crime rates may be high despite effective safety measures if a society faces especially serious criminogenic problems. Therefore, we also present an inventory of risk factors that may explain the occurrence of crime, and relate those factors to national crime rates. By combining statistics on risk factors with statistics on national safety policy intended to neutralise those risk factors, and by emphasising trends in crime rates rather than cross-sectional differences, we arrive at very preliminary indications of societal and policy factors that may contribute to the explanation of cross-country differences in crime rates. However, we will not be able to account for rising crime rates resulting from improvements in national registration or other administrative changes in the law system.

Finally, we explore the public's perception of the quality of national safety policy and whether or not positive perceptions are specifically found in low-crime countries. On the one hand, one might argue that high crime rates are enough to justify a lack of trust in safety institutions. On the other hand, citizens in high-trust societies are more likely to report crimes to the police, boosting records and crime levels. Whichever dynamic applies, the public's perception, measured by citizens' trust in the police and the performance of the legal system, may in itself be interpreted as an indicator for policy performance.

#### *Indicators for inputs, outputs and outcomes*

Prevention and law enforcement are the two central pillars of social safety policy. Law enforcement is a reaction to existing crime by a delimited and centralised chain of authorities, with the most important being the police, public prosecutors and the courts. The public funds allocated to law enforcement (inputs) and productivity (outputs) are therefore fairly well documented, which makes it possible to look at national crime rates (outcomes) from the perspective of the inputs and outputs of law enforcement and assess whether there is a systematic relationship. This quantitative assessment of safety outcomes in relation to law enforcement is at the heart of this chapter. The first difficulty with preventive policy, on the other hand, is that one can never be sure of its actual results, as it is impossible to know how many offences would have occurred without preventive intervention. In terms of outcomes, low crime rates may indicate effective prevention, but also no risk of crime to begin with. Similarly, high crime rates may either indicate inadequate prevention or very effective prevention, without which national crime rates would have been even worse. This is a further reason why policy performance cannot be derived from our outcome measures (crime rates).

The second difficulty stems from the fact that preventive policy touches upon a range of policy domains, such as education, social security, health, sport,





with an even broader range of responsible authorities. Also, it is often highly decentralized, so as to tailor it to local needs. This is underlined by the UN Guidelines on the Prevention of Crime, which have been adopted by an increasing number of countries over the years, and which take as their starting point the central role of cities in promoting integrated prevention policies (ICPC 2014). Municipalities coordinate initiatives that are implemented by a range of local organisations, businesses and residents. To make matters even more diffuse, under the vast umbrella of safety, small-scale, bottom-up private initiatives are being increasingly encouraged by national and local governments in a growing number of countries. Due to this vast landscape of scattered initiatives, an accurate cross-national comparison of preventive investments is beyond our reach. Therefore, in order to be able to give due attention to the potential contribution of prevention to effective safety policy, we present an international literature review on the effectiveness of preventive strategies and

Table 4.1 Outcome, risk, output, input and trust indicators used in this chapter and corresponding data sources

Level	Indicators	Sources
Outcome	Number of violent offences recorded by the police	Eurostat / UNODC
	Number of robberies recorded by the police	Eurostat / UNODC
	Number of burglaries recorded by the police	Eurostat / UNODC
	Number of drug-related offences recorded by the police	Eurostat / UNODC
	Number of other offences recorded by the police	Eurostat / UNODC
Risk factors	Young men aged 15-29 (% of population)	UN data
	School-leavers aged 18-24 (% of population)	Eurostat
	Deceased due to alcohol or drug abuse (% of population)	OECD
	People at risk of poverty or social exclusion (% of population)	Eurostat
	Single-parent families (% of households)	OECD.Stat
	Low-educated aged 25-34 (% of population)	OECD.Stat
	Unemployed aged 15-29 (% of population)	OECD.Stat
	Non-Western immigrants (% of population)	Eurostat
	Income inequality	OECD Income Distribution Database
Unemployment rate	OECD: Economic Outlook 97 (2015)	
Output	Number of convicts in community service	European Sourcebook
	Number of convicts under electronic surveillance	European Sourcebook
	Share of different punishments	European Sourcebook
	Offender ratio (offenders as % of recorded crimes)	Eurostat
	Conviction ratio (convicted persons as % of suspects)	Eurostat
	Imprisonment ratio (prisoners as % of the population)	Eurostat
Input	Public expenditure on social safety	Eurostat
	Police and legal staff (per 100,000 of the population)	Eurostat
Perception	Feelings of safety walking alone in local area after dark	European Social Survey, 2012
	Trust in the police	European Social Survey, 2012
	Trust in the legal system	European Social Survey, 2012



interventions (Section 4.2). The desire to do justice to both pillars of social safety policy in this year's report explains why this chapter deviates slightly from the standard quantitative format of other chapters. The indicators for safety outcomes, for crime risk factors, and for the inputs and outputs of law enforcement which are used in this chapter from Section 4.3 onwards, are summarised in Table 4.1.

#### *Difficulties in comparative safety research*

True differences in crime rates between countries are obscured by incompatible definitions and records. The criminal code of each country is different for cultural and historical reasons. This has several implications. Actions that are regarded as criminal in one country may not be elsewhere; or activities classified as a criminal offence in one country may be classified as minor offences or misdemeanours elsewhere. These differences occur particularly when moral standards diverge, such as views on the legality of drug use, prostitution, abortion and euthanasia. Also, the precise definitions of offence categories often differ (e.g. the distinction between serious and common assault).

Furthermore, criminal justice systems are organised differently from one country to another. The precise tasks of the police and the public prosecutions department will affect the crime rate. Whether or not a reported offence is recorded as such will depend on the police's obligation to transmit offences to the prosecution authorities, even if no suspect has been identified. The Dutch police are under no such obligation, while the French police are. Hence, changes in the system of registration may have a huge impact on crime rates, as illustrated by evidence that previous growth in recorded Dutch crime rates is explained in about 75% of cases by better registration and in only 25% by an actual increase in crime (Wittebrood and Nieuwbeerta 2006). The question of whether the prosecutor has discretionary powers will also affect crime figures as recorded by the police, as well as the latter's decision to pass a case to the public prosecutions department. Another reason may be the insurance system. Citizens usually need a police report for insurance claims, though this varies between countries. Moreover, in countries where the police or judicial authorities are mistrusted or corrupt, citizens are likely to be much more reluctant to report offences. As emphasised earlier, poor policy performance and a reliable system of reporting and registration are competing causes of high crime rates, and vice versa.

The final drawback lies in the very nature of statistics. When compiling statistics certain choices have to be made. In the case of crime statistics, the most important choices concern the unit of measurement used and the point in time at which a case is counted. The unit can be offenders, offences or cases prosecuted; each country will make its own choice here. The moment at which a case is counted determines its characteristics. For instance, a case that is initially recorded as a murder by the police may be considered culpable homicide (manslaughter) after further examination by the public prosecutor.



However, the more effective a country is at solving crime and catching criminals, the higher its official crime rate will typically be. This is called the safety paradox. Likewise, if a new policy prioritises a certain type of offence, the number of arrested suspects will rise. Police organisations which do not have the means to live up to their duties or which turn a blind eye will effectively suppress crime figures, but hardly protect their citizens. We should bear this in mind when drawing conclusions about the effectiveness of a country's law enforcement.

In conclusion, shortcomings in the available data underline the need to be cautious when interpreting apparent differences found. In the case of police recorded crime, changes in levels are more interesting than the levels themselves. It is because of this safety paradox, as well as the wide international differences in definitions and recording of crime, that international victim surveys are generally considered better for comparing crime rates than police statistics. In victim surveys, inhabitants are asked whether or not they have actually been a victim of one or more predefined types of crime during a specific timeframe. At the same time, victim surveys have their own disadvantages (see next section).

#### *Structure of the chapter*

In this chapter we assess the international situation concerning crime and fear of crime in society. To be able to include prevention as one of the two pillars of safety policy, we start with a literature scan to assess current knowledge about effective crime prevention strategies (Section 4.2). We then present a comparison of the outcomes across countries and over time: the rates of violent, property and drug-related crime (Section 4.3). A theoretical inventory of individual and social risk factors is presented in Section 4.4, which may contribute to either high or low crime levels in different societies and which provide pointers for safety policy. In the empirical section (Section 4.5) we try to explain cross-national differences by relating national crime rates to national statistics for some of the most important risk factors (Section 4.5.1), to policy inputs i.e. the investments in law enforcement (4.5.2) and policy outputs, i.e. the productivity of law enforcement (4.5.3). In Section 4.6 we explore the association between national crime rates and levels of public trust and satisfaction vis-à-vis social safety institutions. We conclude by recapping the social and policy factors which have the strongest correlations with national crime rates and which may thus help to explain country differences in crime rates (Section 4.7).

## 4.2 Strategies for crime prevention

Prevention is pivotal to social safety policy. However, as explained in the introduction, the fact that it precedes rather than follows crime, as well as its decentralised and interdisciplinary nature, make it impossible to analyse its inputs, outputs and outcomes using the same statistical format as the other chapters. In order still to be able to present a balanced overview of social



safety policy, we instead opt for a literature review of prevention. Public policy in the vast area of social safety may be subdivided into four different strategies. A first main divide is between the strategies of prevention and law enforcement. Prevention may be understood as protective interventions without the necessary presence of an imminent threat, whereas law enforcement is the response to offences actually committed. In some parts of the world the scales tip towards repressive law enforcement, in others towards preventive efforts. Prevention is commonly subdivided into three strategies: developmental prevention, situational prevention and community prevention.

The division between prevention and law enforcement is far from absolute, however. Police arrests and court sentencing may not only punish offenders for the purpose of retribution, but are also assumed to prevent the convict from relapsing in the future (specific prevention) and to deter potential offenders among the general public (general prevention). Law enforcement may thus also be thought of as a means of prevention by repression. So although law enforcement is a response to crime and its primary objective is to punish individual perpetrators and restore legal order, prevention of future crime is an objective shared by all safety strategies. The plausibility of the preventive effectiveness of each of the four strategies is assessed on the basis of internationally available evidence.

### Prevention by law enforcement

As indicated earlier, law enforcement is often assumed to serve a dual purpose, one that is both repressive and preventive. This dual objective can be traced back to two different theories. The retributive theory suggests that punishment (output) is necessary to restore the legal order as well as society's trust in the rule of law (outcome). Retribution is achieved by having offenders suffer, as their victims and society as a whole have suffered because of them. The harm inflicted on the victim must also be relieved or compensated. Hence, offenders are mainly punished because they deserve to be punished.

The utilitarian or instrumental theory focuses on crime prevention via two separate mechanisms. Specific prevention occurs when punishment (output) deters the culprit from overstepping the mark again in the future (outcome). At the same time, law enforcement (input) creates the opportunity (output) to rehabilitate offenders (outcome) as part of their sentence. And in the case of detention (output), offenders are of course physically prevented from reoffending for the time being (outcome). General prevention is also thought to come about as a result of deterrence (outcome), but this time involving potential perpetrators among the general population rather than the actual convicts. Individual punishment then sets an example and confirms society's norms and values (De Keijser 2004). Countries vary in the emphasis they place on the different functions of law enforcement, as revealed for example in the types of punishments imposed, treatments



available and day-time programs for rehabilitation and after care. Evidence on general prevention is mainly found in economic literature. For evidence on specific prevention, we rely on an extensive international review by Van Noije and Wittebrood (2008, 2009) of – often criminological – impact evaluations. This review included only studies which met the criteria of a quasi-experimental design. Reference is made to the original review for a list of these underlying international studies, which will not be mentioned individually in the following sections.

#### *General prevention*

The impact on general prevention is expected to derive from both the *probability* and the *severity of punishment*. The probability of punishment is firstly the result of the probability of being arrested, and secondly, the probability of being convicted. The severity of punishment is determined by the type of punishment (e.g. fines versus imprisonment) and its severity (level of fines, length of prison sentence). These two variables determine the potential costs of criminal activities, which are weighed against the potential gains and legal alternatives. This logic is firmly rooted in rational theory and is most elaborately developed in economic literature. The underlying assumption, introduced by Becker in the 1960s, is that criminals are utility maximisers just like anyone else. If a potential perpetrator judges that the potential costs outweigh the potential gains, he or she is assumed to refrain from illegal activity: general prevention, in other words (Eide et al. 2006).

Eide et al. (2006) depict the distinction between economists and criminologists by their perspective on crime: it is considered rational behaviour by the former, but deviant behaviour by the latter. Broadly speaking, according to economists, individual preferences are more or less constant and the impact of changes in environmental incentives (such as sanctions and wages) are therefore highly predictable (since they are rational). Criminologists, on the other hand, assume that preferences are influenced by an individual's social environment, social norms and other personal characteristics. As preferences vary between individuals, their reaction to incentives such as the probability and severity of punishment is also highly personal and less predictable. They do not necessarily deny the rational impact of punishment, but add uncertainty in the precise responses to it. The evidence from empirical economic (criminometric) literature is most convincing regarding the effect of the probability of punishment, especially for juvenile crime. The evidence is less consistent regarding the severity of punishment. Myopia, a lack of risk aversion and imperfect knowledge about their criminal ability among offenders may explain its often modest effects (Eide et al. 2006; Pyne 2012).

#### *Specific prevention*

At the front line of law enforcement are the police. Apart from the inconsistent effects on general prevention of an increase in the number of police officers, effects which seem largely limited to police deployment



in problem areas, *police arrests* are a means of deterring the individual arrestee. This objective is certainly not achieved for all types of arrestees and offences. Once caught – minors especially, but also those who have committed less serious offences – have been found to be more prone to commit subsequent offences. Hence, arrests are not always an effective instrument to reduce recidivism.

There is also no empirical support for the common policy assumption that imposing *quicker punishments* would enhance the effect of the imposed sanction on recidivism. There is even some preliminary evidence to the contrary: an elongated threat of punishment was found to reduce the probability of recidivism among minors.

As regards types of punishment, the evidence is quite unambiguous about *incarceration*: detention alone is ineffective in reducing recidivism. Rather, adverse effects have been known to occur, undermining both general and specific prevention. This is not to say that detention is also ineffective if it is meant to prevent convicts from offending during the time they are locked away; detention may also serve to restore the legal order (retribution). Likewise, *alternative confinements* that restrict the physical freedom of movement of convicts emerge as ineffective if no guidance and treatment are offered. For a specific group of offenders – drug addicts – who typically move in and out of prison due to frequent but relatively minor offences, the chances of rehabilitation are better if detention is sufficiently long to enable addiction care and social support to be offered.

Once detention has been imposed, a primary objective is to prevent recidivism after release. The road towards desistance is a highly personal process and one-size-fits-all interventions do not work. Nonetheless, *cognitive behavioural therapy* and *social learning or social skills training* appear to have the best chance of reducing recidivism (see also Sapouna et al. 2011). For young people these programmes were found to be more effective in ambulatory than in residential settings, however: the share of young people relapsing is higher in the latter. Often, and preferably, such programmes include guidance to improve their future prospects in terms of *schooling or jobs*. Poor results are obtained by *authoritarian institutions*, camps or expeditions for re-education, where young people are temporarily removed from their familiar surroundings. They are expected to modify their behaviour under the influence of discipline and peer pressure. Ironically, critics point to peer pressure as one of the factors that stands in the way of behavioural improvements in these contexts.

Although as of yet no evaluation has demonstrated their actual effectiveness, attempts at resocialisation by guiding them towards *schooling or suitable employment*, and help them develop *prosocial networks* also emerge as promising for adult prisoners (see also Sapouna et al. 2011). This also applies to programmes in which prisoners are allowed the opportunity to acquire outside work experience during their period of detention, and to



continue after detention. As a rule of thumb, key events in offenders' lives such as a stable relationship, parenthood, employment and re-integration in the local community enhance offenders' motivation to stop reoffending, as do interventions which facilitate such events.

Finally, *aftercare* is generally found to be indispensable to the success of rehabilitation programmes. Most knowledge about effective aftercare concerns young people, which again indicates the importance of guidance and support alongside mere surveillance. In general, if intensive supervision merely involves reporting to social work offices, and is not accompanied by some form of support in addressing criminogenic causes, it is unlikely to lead to desistance (see also Sapouna et al. 2011).

### Situational prevention

The strategy of situational prevention is based on the idea that modifying the *opportunity structure* will prevent offences being committed, for example by making it more difficult or more unattractive for potential perpetrators or by physically stopping them. This preventive strategy has strong ties to law enforcement, as some of the security instruments (police, camera surveillance, DNA spray) may be used for preventive as well as investigative purposes. Also, some measures may only be used by authorised bodies (such as preventive body searches and identity checks by the police). This overview of situational prevention, based on international impact evaluations reviewed in Van Noije and Wittebrood (2008, 2009), is divided into interventions organised by public authorities on the one hand, usually in the public domain, and private initiatives on the other, usually in the private domain.

Starting with situational prevention in the public domain, a general conclusion is the convincing importance of *human surveillance*. It tends to discourage people from committing crimes. Functional surveillance, in particular, practiced 'on the job' was found to be effective. Concierges and train or bus conductors already carry out certain controlling tasks as part of their job description, but other examples include bar staff and landlords.

*Formal surveillance by the police* is especially effective in the event of more severe problems, when functional surveillance is insufficient. However, its impact is strongly related to the targeted deployment of police officers at hot spots and hot times. Random police surveillance, or larger number of officers without clear assignment, is not effective. Nevertheless, enhancing the visibility and availability of police officers has a positive impact on perceived safety. As pointed out earlier, the police may also seize the opportunity to invest in their legitimacy within the community, by using conflict mediation or by simply approaching all parties involved respectfully. The community, including potential perpetrators, will then be more inclined to uphold the desired norms and values.





A form of informal human surveillance that has been widely experimented with is *private street coaches or neighbourhood coaching*. Although international evidence is provisional and not unambiguous, it is overall optimistic about non-professional role models who spend time with young people, correct them and give constructive feedback: anti-social and delinquent behaviour have been found to reduce. It is unclear whether the same results apply when the coaches are no longer peers, but elders from the same ethnic community (so-called 'neighbourhood dads'), although Dutch research shows that those involved are quite happy with what is achieved (Van Noije and Wittebrood 2008). On the other hand, they are also criticised for being too soft and for sweeping incidents under the carpet in order not to present the community in a bad light (Van Noije and Wittebrood 2009). When street coaching is not carried out by volunteers, but by private-sector professionals (formal surveillance), the conclusions are different. These private street coaches are usually tough men who use their verbal and physical strength to command awe and respect. They function as an extension of the police (Van Steden and Jones 2008). According to Lub (2013), street coaches do indeed unburden the police as far as their presence at hot spots is concerned. However, their intensive surveillance does not pay off in terms of objective or subjective safety. Lub concludes that they produce lots of output, but little outcome.

Encouraging *informal surveillance* by means of interventions in the physical environment, for example by modifying the lay-out of buildings, open areas and green spaces, is another well-used technique within situational prevention. Dark, anonymous or abandoned shopping centres, parks and apartment blocks are turned into accessible, attractive and familiar meeting places. If the users of public spaces have a better view of the area, there should be less opportunity for offending and they should feel more at ease. One of the easiest instruments for achieving this is street lighting. Although it requires more research, street lighting emerges as promising from literature, especially in preventing violent crime and especially in residential areas. Unfortunately, there is not enough evidence available to comment on other urban planning techniques (see community prevention for redevelopment, which is as much a social as a physical planning instrument).

Also related to the physical appearance of the public space is the physical aspect of the broken windows theory. This promising strategy suggests that visible damage to property must be repaired quickly so as not to attract even more vandalism. The same goes for littering.

The impact of *camera surveillance* on crime and incivility has proved to be very context-dependent. Sometimes camera surveillance involves live monitoring during certain hours, enabling instant action to be taken; sometimes camera footage is only used after incidents have been recorded. In the former case the objective is primarily preventive, in the latter case it is mainly used for investigative purposes. Much remains unclear, but in general camera surveillance seems to be more effective against property





crime and vandalism than against violence, where it does not seem to work at all. This is explained by the fact that violence is often used under the influence of alcohol or heated emotions, when reason is no longer a factor and perpetrators are not deterred by the presence of a camera (Gill and Spriggs 2005; Van der Knaap et al. 2006). Camera surveillance is also found to be more effective in parking facilities than in public transport or in city centres, another illustration of its context-dependency. No impact has been found on feelings of safety, irrespective of public opinion that may be in favour of camera surveillance, as pointed out by the British Home Office (Gill and Spriggs 2005). Of course, there is no question that the use of camera footage is very effective in identifying and incriminating offenders. However, it is then no longer a preventive measure, but part of law enforcement.

Last but not least, we discuss private initiatives in the context of situational prevention. For the most part these initiatives may be summarised as *technical securing* of potential (private) targets. Citizens placing good-quality locks on their doors, automatic lighting in their gardens and alarms and engine immobilisers in their cars are effectively reducing property crime. This seems to apply both to burglaries in private houses and shoplifting (e.g. techniques to render stolen property useless or worthless). The fact that technical security has become more advanced and is applied more widely is frequently singled out as one of the most important explanations for the international drop in property crime since the turn of the century (e.g. Vollaard et al. 2009).

To summarise, many potentially effective strategies are available for situational prevention, but their effectiveness seems to be highly dependent on the specific situation in which they are applied. There is little evidence of the relocation of crime, for which the strategy is sometimes criticised.

### Community prevention

With urban development at the heart of crime prevention policy – which led to what is sometimes sceptically called a carousel of small-scale projects for and with inhabitants, especially in deprived neighbourhoods – community prevention has flourished over recent decades (ICPC 2014). The lion's share of the evidence presented here regarding community interventions is borrowed from a recent and detailed international review by Lub (2013). It is important to note that Lub bases his conclusions on a broad range of empirical studies, not just studies that meet the (quasi-)experimental criteria of impact evaluations. He distinguishes between several types of interventions, with varying degrees of scientific support.

The first is *encouragement of social cohesion* among local residents, for which policy theory often posits a three-way effect. First, social cohesion is



thought to encourage social control, which in turn reduces social incivilities and crime. Second, social cohesion is expected to mobilise inhabitants to become actively involved in their neighbourhood, and subsequently improve local safety conditions. Lub concludes that there is little scientific basis for these intervention theories and that there is more evidence for a reversed causality: the presence of active inhabitants and those who exert social control encourages local social contacts. Activism and social control strongly depend on individual characteristics, such as personal competences, motivation, sense of duty and neighbourhood attachment. Third, social contacts between deprived social groups and middle-class inhabitants are thought to enhance the cultural and social resources of the former. Along with their prospects, the prospects of the neighbourhood itself improve. Once again, Lub finds that social contacts between these two groups – ‘bridging social capital’ in Robert Putnam’s terminology (2000) – hardly occur in reality. Neighbourhood improvements are more often due to a changed composition of the population with the influx of middle-class families, than to bridging social contacts. Hence, according to Lub’s review of international evaluations, the preventive impact of local social cohesion is overrated.

A second type of intervention revolves around *policy involvement of inhabitants*. Here, the evidence is slightly more persuasive regarding the underlying logic of the assumptions, but almost as critical regarding the actual effects on crime and livability. First, it is assumed that policy interventions become more focused and effective when citizens provide authorities with local information. Second, the same is assumed if citizens are allowed to decide on neighbourhood priorities. Both policy assumptions have been poorly tested, but the little evidence that is available points to weak or no effects on crime and incivilities. Sherman and Eck (2002) confirm the lack of effect of community meetings and information points where citizens can meet police officers. The results of contacts between citizens and authorities tend to be more promising for feelings of safety. Several studies have however observed that, if an active group of inhabitants happens to be successful in conveying their concerns to authorities, the latter may disproportionately focus on issues that may not be shared or may even be contested by other groups. This is undesirable from the perspective of social cohesion and local democracy.

A more promising strategy involving social contacts between citizens and authorities is *community policing*, also known as reassurance policing. To strengthen their legitimacy and establish trust, the police invest in long-term relationships within the community. They do this by treating inhabitants, victims and offenders alike with respect and by lending them a listening ear. Once trust in the police has been established, citizens are more willing to conform to local norms as well as the law (Sherman and Eck 2002).



The results for informal surveillance through *neighbourhood watch* schemes are quite ambiguous. An extensive meta-analysis by Sherman and Eck (2002: pp. 315-317) is very clear about the lack of effect of neighbourhood watch schemes on crime. They even seemed to incite fear of crime, rather than reduce it. By contrast, the majority of evaluations in a later meta-analysis by Bennett (2006, in: Lub 2013) found positive and substantial effects for neighbourhood watch in reducing crime. This positive finding is more in line with visible human surveillance in general (see *situational prevention*), whether by the police or other public officials (Van Noije and Wittebrood 2008).

*Sports and other leisure activities* for youngsters are popular neighbourhood interventions. Such projects are thought to contribute to a safer community in several ways. First, such interactive activities are thought to enhance social competences and promote prosocial behaviour. Little or no effects on community safety have been found. Causality is a major issue here, as it is often socially competent youngsters who engage in sports and games. Moreover, the competitive nature of sports can also trigger aggression. Lub concludes that it is not sport per se, but the combination with moral and pedagogic guidance, that may make a difference. Second, sport and game facilities are intended to function as venues for new social contacts within the community, enhancing social cohesion and neighbourhood safety. In practice, however, these venues are used by existing networks of youngsters, excluding others. They are even known to become a source of nuisance for other inhabitants, with negative effects on social cohesion and neighbourhood safety. Third, and most promising, engaging young people in leisure activities has been shown to substantially reduce crime and nuisance, due to the simple fact that time spent on sports cannot be spent on offending. Hence, sport may serve as a substitute, but is unlikely to fundamentally change behaviour (Lub 2013).

Social projects in the form of *self-regulating codes of conduct* have proved unable to improve neighbourhood safety. This is most likely because the neighbourhood – or even the street – no longer functions as a community in which effective group norms can be enforced. Hence, often only limited and selective groups of inhabitants are willing to comply. Note, however, that this critique applies specifically to codes of conduct within neighbourhoods; there is evidence to suggest that they might work in schools to reduce criminal and aggressive behaviour among students, if embedded in a broader and well-structured school policy (Gottfredson et al. 2002).

*Redevelopment*, a drastic physical neighbourhood intervention, has been evaluated to a considerable extent. The objectives of redevelopment are not so much physical as social. By replacing old rented housing with new homes, not only are better living conditions realised for existing residents, but often a new population with a better socioeconomic position can be attracted. Mixing inhabitants with weaker and stronger cultural,



social and economic capital dilutes the concentration of social problems. At best very small effects (Wittebrood and Van Dijk 2007; Wittebrood and Permentier 2011) or no effects (Ouwehand and Davis 2004; Bolt and Torrance 2005; Van Beckhoven and Van Kempen 2002, 2006; Van Bergeijk et al. 2009) should be expected from this mixed population on social cohesion (as was mentioned at the start of this section) due to the fact that different social groups tend to prefer to keep to themselves. Nonetheless, several quasi-experimental evaluations have reported effects of redevelopment on crime (most consistently on violence), feelings of safety and/or neighbourhood satisfaction (Wittebrood and Van Dijk 2007; Wittebrood and Permentier 2011; Permentier, Kullberg and Van Noije 2013). Effects seem larger when social housing is replaced by new owner-occupied homes than when social housing is replaced by social new-builds (Wittebrood and Permentier 2011). Effects were also found to be larger for large-scale and long-term interventions (Permentier, Kullberg and Van Noije 2013).

Overall, current research seems at odds with the zest with which social projects have been launched in the neighbourhood over the past years. This is confirmed by a technically advanced impact evaluation of a recent government perennial investment programme in the 40 most deprived urban areas in the Netherlands, which – overall – hardly seems to have made any difference in these intervention areas compared to other deprived areas (Permentier, Kullbert and Van Noije 2013). A note of caution is in order, however, as the review evidence is mostly disappointing with respect to impact on actual crime and incivilities, less so on feelings of safety. Limited effects of community prevention on objective safety and greater potential for subjective safety are also found in Van Noije and Wittebrood (2008), especially as far as social activities by and for inhabitants are concerned. This effect of social mobilisation on subjective safety may be explained by the fact that activities in the neighbourhood are open for everyone to see and may give the impression of an active social network that is making an effort to improve local safety, apart from the actual improvements. Similarly, it is quite possible that social community projects make a valuable difference for other subjective indicators, such as neighbourhood satisfaction or even the level of perceived incivilities (Welsh and Hoshi 2002).

### Developmental prevention

The strategy of developmental prevention is intended to prevent individuals from developing criminal and antisocial behaviour. The assumption is that individual offending is determined by a combination of risk factors including life circumstances, peer pressure, quality of parenting and future prospects. Interventions in this strategy are targeted mainly at young people, as effectiveness is thought to depend on how early they take place. Whereas community prevention primarily fights social problems in the



public domain, developmental prevention tackles the roots of those social problems. In practice, it is often a mix of both strategies that is applied (e.g. surveillance of and activities for young people, but also visits to their families to offer assistance with the multiple socioeconomic problems they may be facing). The conclusions presented here are again largely based on the quasi-experimental impact evaluations reviewed by Van Noije and Wittebrood (2008, 2009).

International conclusions about *family-based interventions* are predominantly positive. There is great diversity among family interventions, but a common point of departure is the idea that educational risk factors for later delinquency (neglect, lack of parental controls, inconsistent or over-authoritarian disciplining) can be corrected based on the principle of rewarding children for good behaviour and punishing them for anti-social behaviour. Family programmes that have achieved the best results internationally were based on the *social learning theory* (behaviour modification) or the *attachment theory* (enhancing the sensitivity of the parent to the child) (Konijn et al. 2007). Family interventions are found to be especially promising when they are combined with assistance in other social environments (systems) of a youngster where the roots of the individual problems may lie, according to *multisystem therapy (MST)* (Farrington and Welsh 2002; Rubin et al. 2006; Konijn et al. 2007). In MST, children or adolescents typically undergo individual treatment during several months, such as cognitive behavioural therapy, while attention is paid to their interpersonal relationships at home, at school, on the streets, and so on.

The school context also provides ample opportunity for effective interventions. Two clusters of interventions appear to be most favourable. The first is creating *order and discipline in the school* and in the classroom through a general policy aimed at norm confirmation. Young people tend to react positively to an environment in which rules are applied consistently and desired behaviour is rewarded. The second cluster consists of intensive programmes, in the classroom, in groups or individual, in which cognitive behavioural therapy is combined with social skills training. These are interventions of long duration. Simply providing information in the classroom has not proved successful in preventing crime. At best it may confirm norms for children who run little risk of going off the rails in the first place. Note that public education is not dismissed as a means of increasing knowledge among young people, for example about sex and drugs. However, it is dismissed as a means of stopping antisocial behaviour or delinquency.

#### 4.3 Outcome: recorded crime rates

Comparability of crime rates is a much discussed topic, as explained in the introduction. Eurostat cautions against comparing crime levels based



on absolute figures, as they may be affected by many distorting factors, including:

- different legal and criminal justice systems;
- differences in recording and reporting rates;
- differences in the point at which crime is measured;
- differences in the way multiple offences are counted;
- differences in the types of offences included in the overall crime figures.

Victim surveys of reported crime offer a more reliable alternative for cross-country comparisons than police recorded crime. Victim surveys are less biased by the large dark figure (hidden crime) in official police records. However, they may still suffer from cultural differences regarding the interpretation or tolerance of certain offences, for instance unwelcome sexual advances. This is likely to affect the probability that citizens report such offences in a survey, but will certainly affect the probability that they report them to the police. According to the 2014 Dutch victim survey, two-thirds of the number of offences experienced were not reported to the police. According to the British Crime Survey, about half the committed crimes are recorded by the police, but the dark figure has clearly become smaller (except for theft from motor vehicles and burglary) (Jansson 2007). Victim surveys are organized to circumvent the problem of the dark figure in recorded crimes, although they shed no light on crimes without immediate and individual victims (for example crimes against organisations, homicide and drug offences).

The International Crime Victim Survey (icvs), the most far-reaching programme of standardized victim surveys, was initiated in 1987 and funded by the Dutch Ministry of Justice. This project ended in 2005. But there was a widely felt need to gather information on crime and safety by means of victim surveys. The European Commission decided to continue this programme of victim surveys, to be implemented by Eurostat. However, the proposal for designing a standardised survey in all Member States (Van Dijk et al. 2010), was rejected by the European Parliament in September 2012. An important argument was that results from national surveys were already available for many Member States and that the added value of this project was doubtful (Van Dijk 2013). By contrast, The European Sourcebook (2014) states that these national surveys cannot be compared because of serious methodological differences. Furthermore, six of the selected countries in this report (Austria, Cyprus, Germany, Greece, Malta and Slovak Republic) have never conducted a national victimisation survey, and only nine countries (Belgium, Bulgaria, Denmark, France, Ireland, Italy, the Netherlands, Sweden and the United Kingdom) conduct one periodically.

Hence, the only international data source available to us are police records. Fortunately, data collection by Eurostat has improved and definitions are better maintained. Nonetheless, caution remains imperative when



interpreting the results (see Section 4.1). Comparative analyses can focus on three aspects: distributive comparisons of types of crime and offenders, comparisons of crime levels between countries and trend comparisons within and between countries (European Sourcebook 2014). Owing to methodological problems, comparisons of crime levels between countries in particular should be handled prudently.

We distinguish between more and less serious crime (Figure 4.1). More serious crime comprises violence, robbery, burglary, motor vehicle theft and drugs offences. In the Netherlands, these offences made up around 25% of total recorded crime in 2012. Less serious crimes include other theft (no motor vehicles, no violence used), which constituted about 43% of total crime, destruction, vandalism and arson (12%), traffic offences (11%) and other crimes (9%). The mean share of more serious crimes in all selected countries amounts to 25%, but values range from 8% (Germany) to 80% (Cyprus).

Figure 4.2 shows the number of recorded serious crimes per 1,000 inhabitants in 2012. This figure illustrates the need for caution when interpreting differences in crime rates. In Sweden, for example, the number of violent crimes is based on the number of persons involved in a crime. Moreover, Swedish crimes are classified the moment they are first reported and retain this classification even if they turn out to be unsubstantiated.

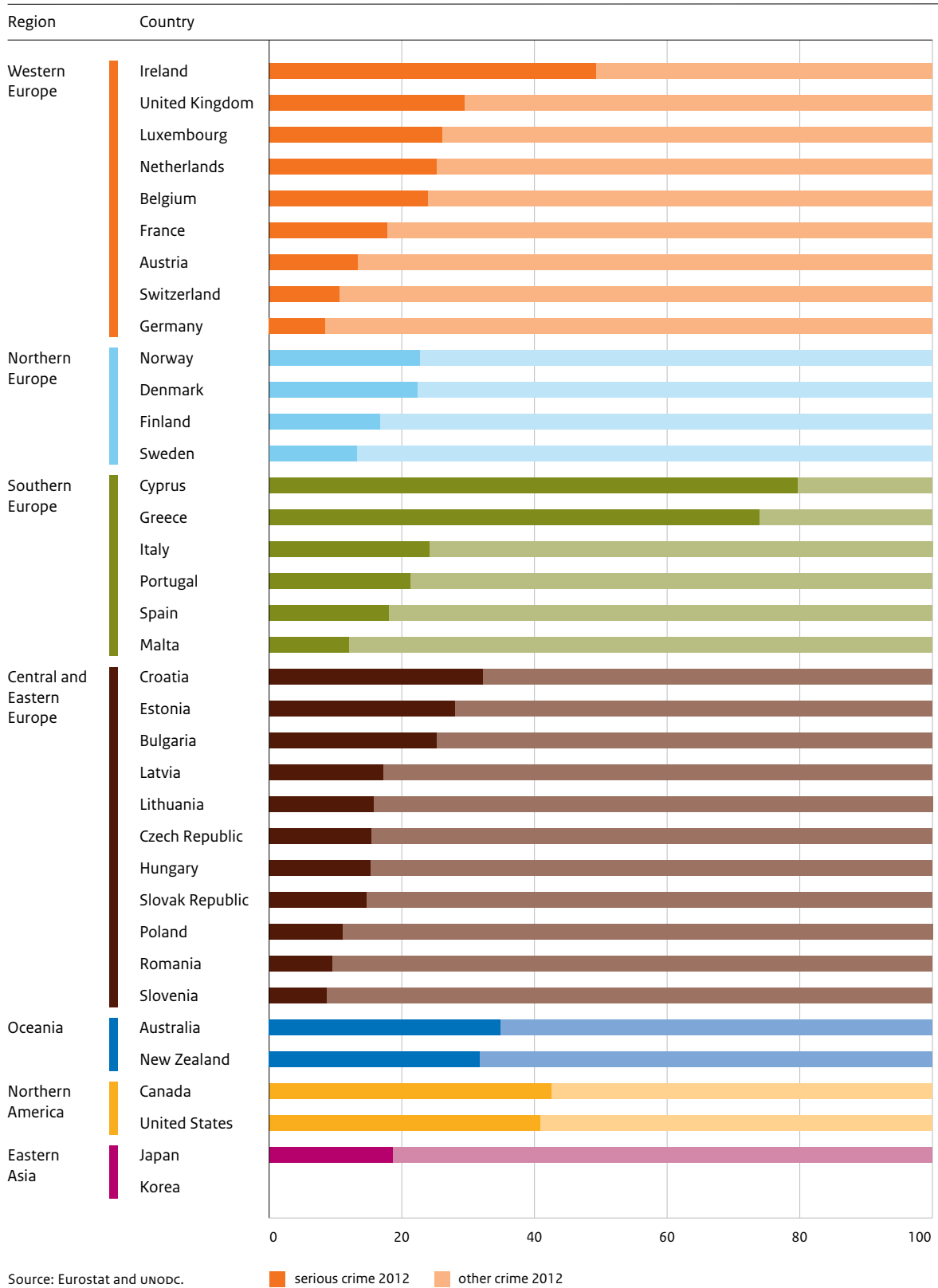
Substantial country differences emerge in levels and types of crime. As indicated, these differences will be partially real and partially artificial/methodological. To obtain a first impression of the extent to which these differences may be real, we compare them with the national victim surveys reported in the European Sourcebook 2014. Unfortunately, only a small sample of countries participate in victim surveys, but if we select countries with the highest levels of reported violence (Finland, Belgium and Sweden) and countries with the lowest levels (Ireland, Poland and Bulgaria), we can conclude that differences in recorded violence do not diverge much from differences in reported violence, although differences in levels are undoubtedly biased by methodological issues. With regard to domestic burglary, the similarities between recorded (police) and reported (victim) figures are less clear. According to national victim surveys, for example, inhabitants of Belgium and Croatia report high levels of burglary and inhabitants of Finland and Sweden report low levels. As a general finding, levels of recorded violence are high in parts of Oceania, Northern America, as well as in Western and Northern Europe, and low in some Central and Eastern European countries. Robbery tends to be more common in Southern Europe, domestic burglary in Oceania and Northern America, and motor vehicle theft in all types of countries, except Central and Eastern Europe. The last observation is the most salient: the least crime seems to occur in Central and Eastern European countries, if we base this conclusion merely on recorded crime rates.

More interesting, and more reliable, are trends in crime rates. Figures 4.3a-4.3d report changes in crime rates between 1995 and 2012 for four types of



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

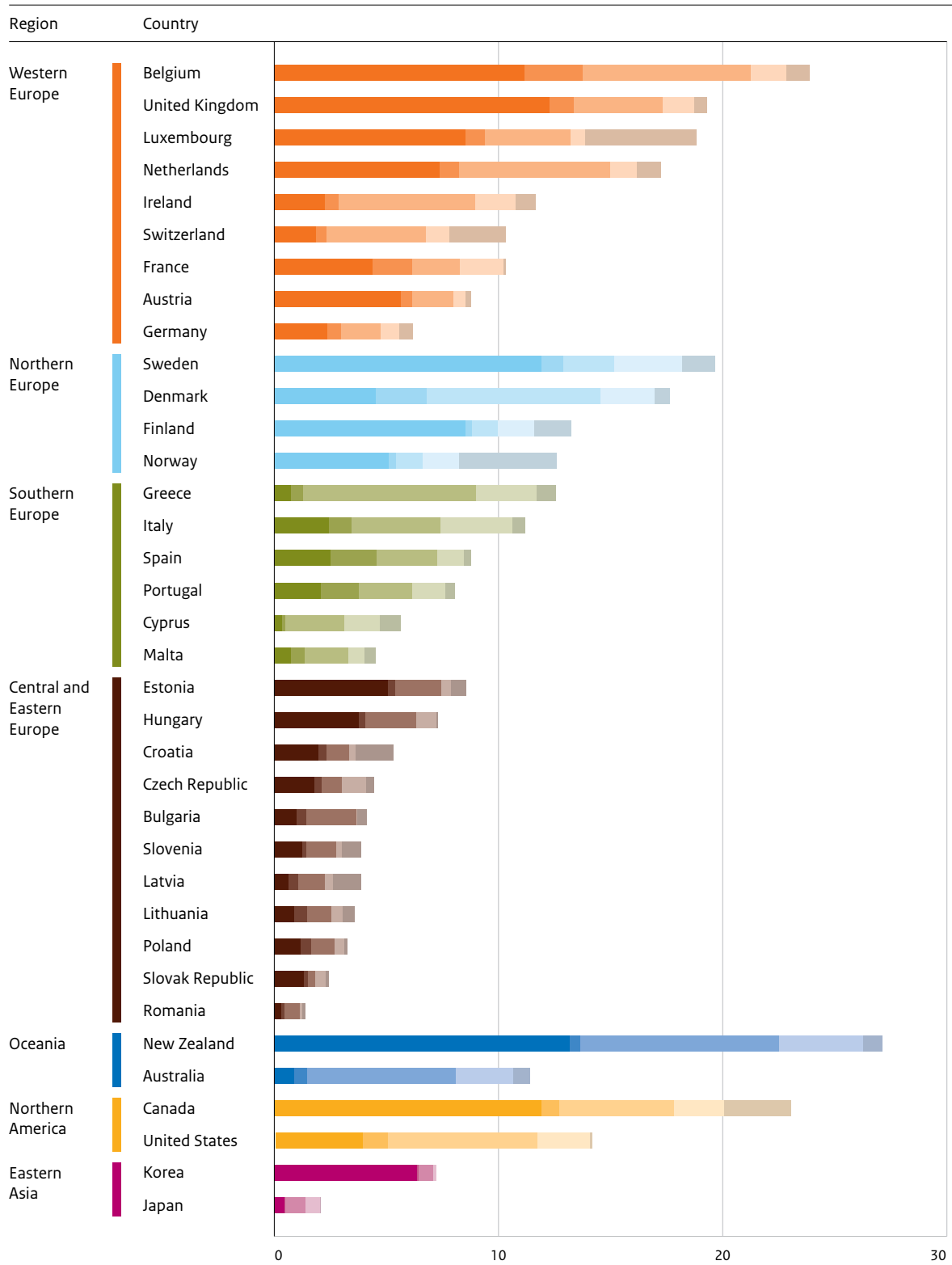
Figure 4.1 Share of serious crime in total recorded crime, 2012 (%)





SOCIAL SAFETY

Figure 4.2 Recorded serious crime rates (per 1,000 of total population), 2012 (not weighted)



Source: Eurostat and UNODC.

■ violence 
 ■ robbery 
 ■ burglary 
 ■ motor vehicle theft 
 ■ drugs



offences. Violence rose significantly between 1995 and 2012, but not in all countries. In twelve of the 35 countries violence declined, predominantly in Central and Eastern European countries but also in the USA. Croatia, Switzerland and the United Kingdom show the biggest increase, all occurring between 1995 and 2005.

Trends in robbery are partly increasing and partly decreasing. Trends are favourable in Estonia, Latvia and, again, the USA. In some countries with very low levels of robbery in 1995 (Cyprus, Croatia and Austria) levels of crime rose sharply, but were still below the mean level in 2012. In general, there appears to be a convergence towards mean levels of robbery.

The trends in burglary are more favourable, falling on average from 4.8 per 1,000 inhabitants in 1995 to 3.1 in 2012. No general country group pattern can be detected, and we therefore conclude that this general trend applies to all types of countries. Decreasing levels of burglary have been attributed to increasing security measures taken by businesses and citizens to protect (and insure) their property and valuables by means of better locks and alarm systems.

Most spectacular is the diminishing incidence of motor vehicle theft. Countries with high levels of theft in 1995, in particular, succeeded in lowering the rates of crime. However, some countries with low levels of theft in 1995 – Greece and Cyprus – saw rising figures. A major reason for decreasing motor vehicle theft is the security measures taken by car manufacturers, such as better alarm systems, door locks and engine immobilisers. Unfortunately, organised crime is regaining ground, so constant innovation is needed to stay ahead of the game.

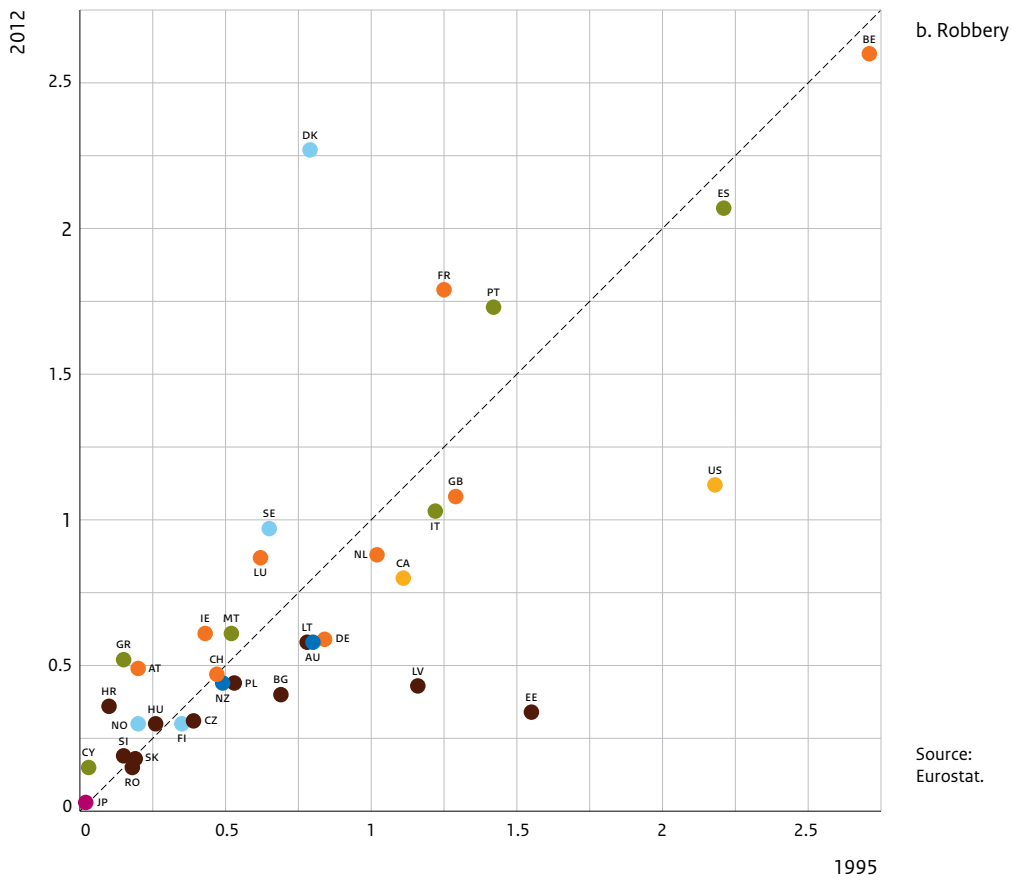
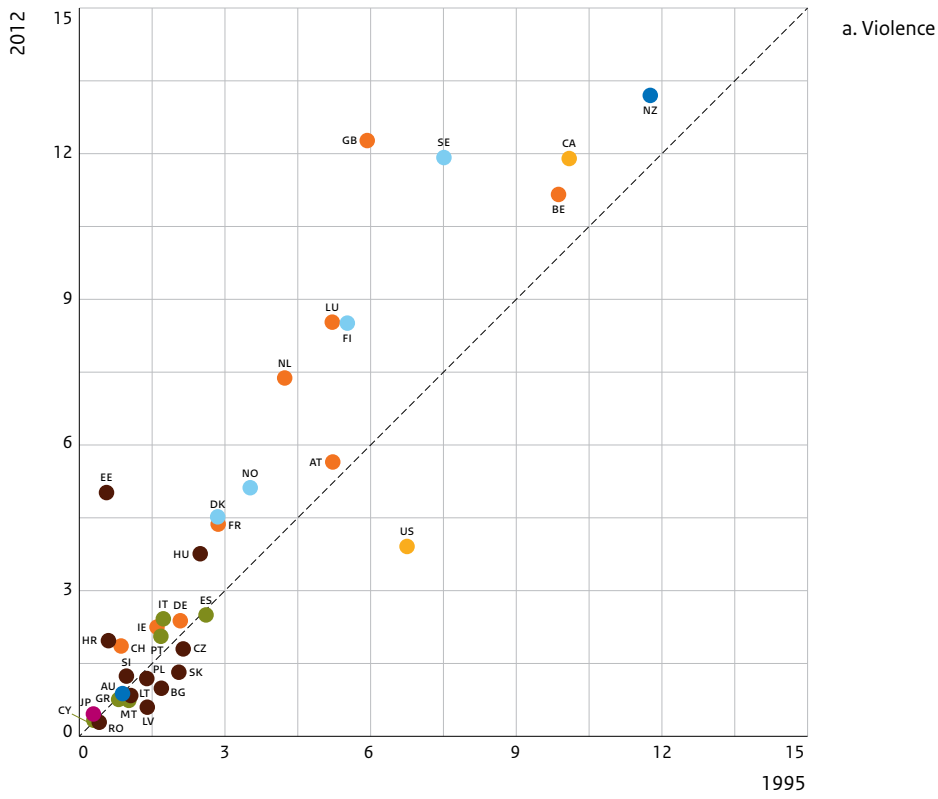
Different types of crime can be added together in one figure by weighting them according to the severity of the offence. We use a weighting scheme derived from Statistics Canada (2009) to produce statistics about the severity of crime. The specific weight assigned to any given type of offence consists of two parts: the incarceration rate (proportion of people convicted), which is multiplied by the average length of the prison sentence.<sup>1</sup>

<sup>1</sup> The weights assigned to offences in this study are divided by the mean value of less serious crime (which has the default value of 1). The mean weight of 'assault' is calculated by using the Dutch distribution of types of assault. The resulting weights are: homicide: 175; assault: 4; robbery: 15; burglary: 5; motor vehicle theft: 2; drugs abuse: 2; other (less serious) crime: 1.



SOCIAL SAFETY

Figure 4.3 Recorded crime rates in 1995 and 2012, per 100,000 of total population

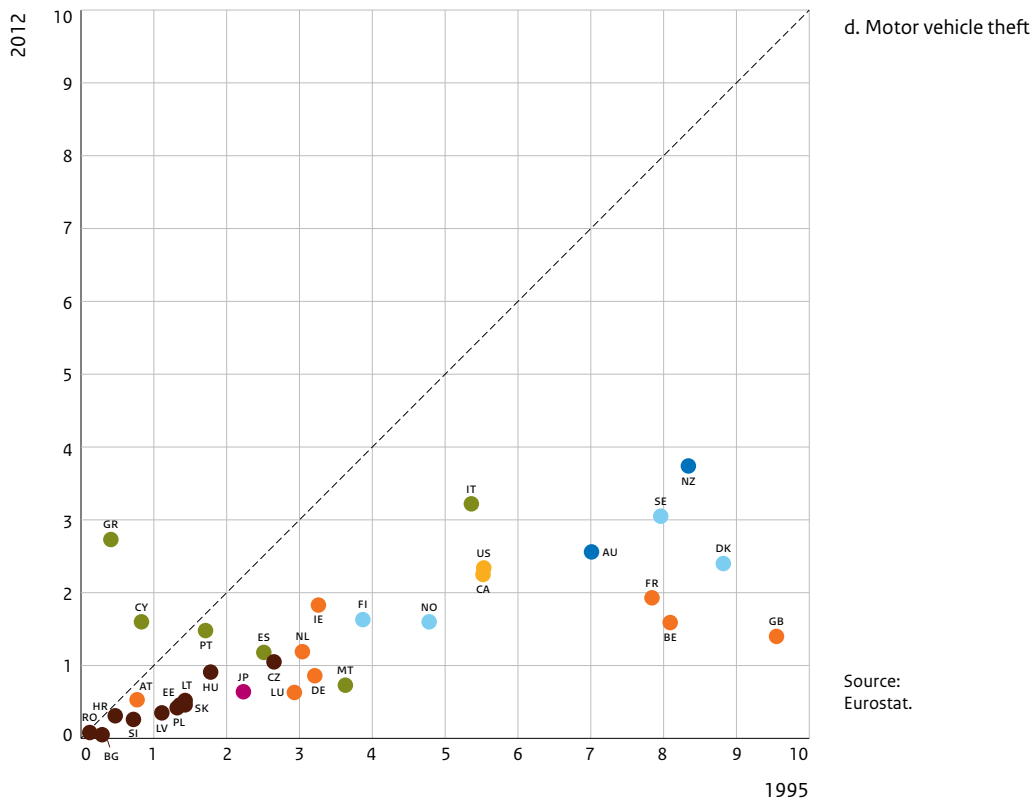
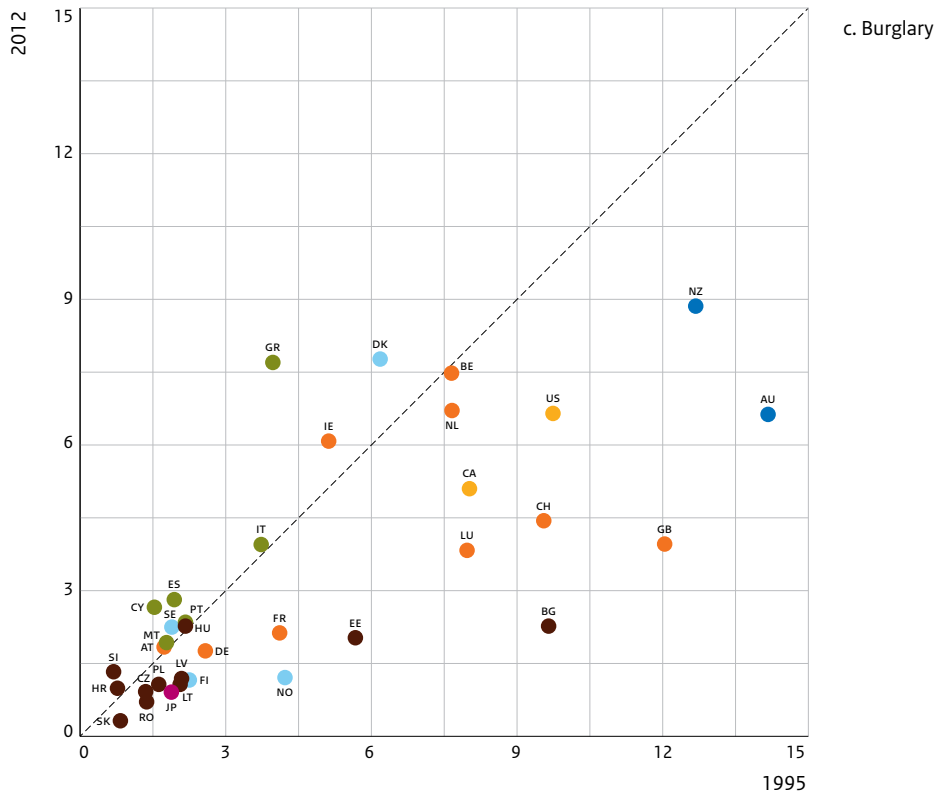


Source: Eurostat.



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Figure 4.3 Recorded crime rates in 1995 and 2012, per 100,000 of total population (continued)



Source: Eurostat.



In general, crime stabilised between 1995 and 2012 (Table 4.2). Exceptions are Bulgaria, Estonia and the United Kingdom, which experienced a strong downward trend in crime severity. By contrast, Slovenia, Portugal and Sweden saw a substantial increase in crime severity between 1995 and 2012.

Of all 29 countries with information about recorded (weighted) crime rates, 11 countries had less crime in 2012 compared to 1995, ten countries had about the same crime levels and in eight countries crime increased. In general, we observe a shift in crime rates from burglary and motor vehicle theft to violence. Violence carries a higher weight than burglary and motor vehicle theft in terms of severity, so that more violence offsets the sharp decrease in other types of crime. The changes in the crime rates of the United Kingdom are noteworthy, in this regard, with the highest increase in violence but also large reductions in burglary and motor vehicle theft as well as a modest fall in robbery, which apparently are large enough to outweigh the increase in violence. Sweden, on the other hand, saw a considerable drop in motor vehicle theft, but also a large increase in violence, dominating the country's negative trend.

Overall (weighted) recorded crime rates tend to be high in Northern and Western European countries and low in Central and Eastern European countries. Within these regions, Norway and Ireland score relatively favourably, due to moderate to low occurrences of all crime types. Estonia and Hungary score relatively unfavourably, largely due to a high level of violence in both cases.

For the sake of comparability across policy sectors in this report, an outcome index for social safety was constructed. We cannot stress enough that the resulting ranking of countries should not be interpreted as country performance in any way, and especially not in the area of social safety, with only one available outcome indicator which, as explained, suffers from comparability issues. The outcome indicator used is the weighted recorded serious crime rate (see also Table 4.2), which consists of a weighted average of violence, robbery, burglary, motor vehicle theft and drugs offences. When crime is low, the outcome index is high. The index-scores are listed in Figure 4.4.

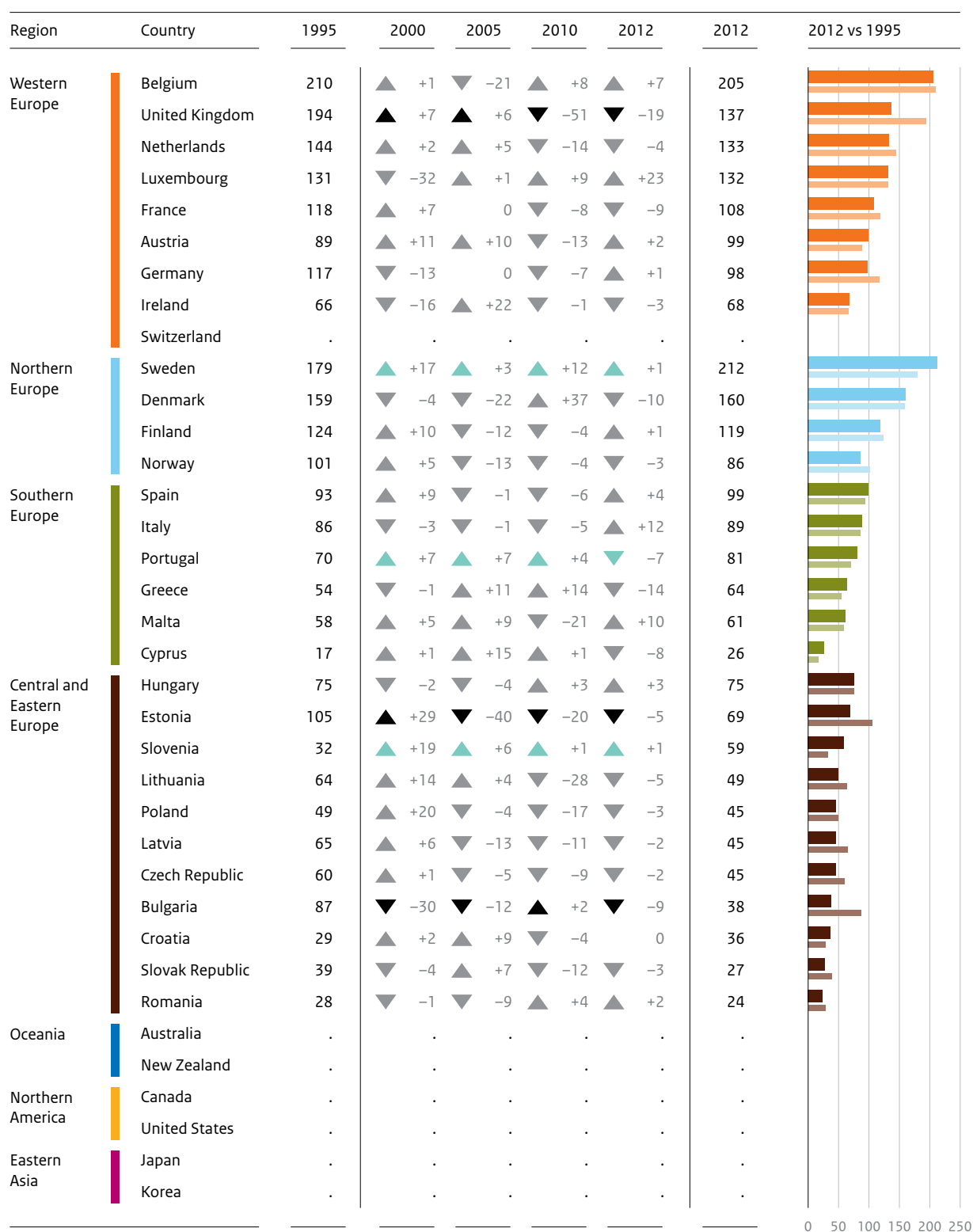
We only have data for the regions Western Europe, Northern Europe, Southern Europe and Central and Eastern Europe. The outcome index also points to Central and Eastern Europe as the region with the lowest (weighted) recorded serious crime rate on average in 2012, especially in Romania, Slovak Republic and Slovenia. The highest serious crime rates were recorded in Northern and Western European countries, especially in Belgium, Denmark and the United Kingdom. Germany is a noteworthy positive exception. The countries of Southern Europe are located in the middle.



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Table 4.2 Level of total recorded crime in 1995 (weighted) and changes in 2000, 2005, 2010 and 2012<sup>a</sup>

For reading instructions see page 49



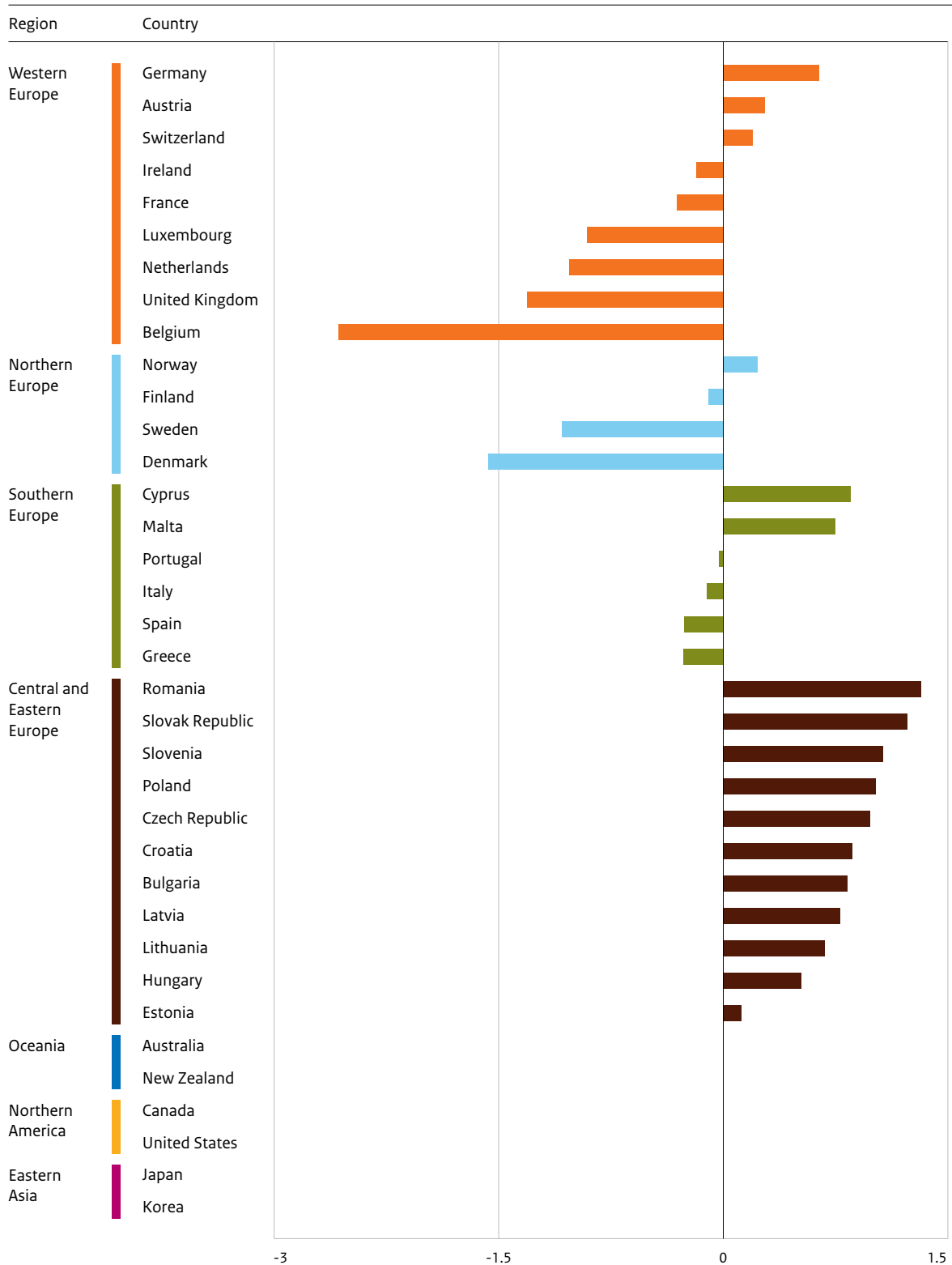
<sup>a</sup> Compared to five years earlier (compared to two years earlier in the case of 2012). Source: Eurostat (except non-European countries).

▲ largest increase  
▼ largest decrease  
2012  
1995



SOCIAL SAFETY

Figure 4.4 Social safety outcome index, 2012 (in index scores based on weighted recorded serious crime)



Notes: The outcome index is constructed as follows. First, we identify the 24 countries with available outcome data for all sectors: AT, BE, DE, FR, GB, IE, LU, NL, DK, FI, SE, ES, IT, PT, BG, CZ, EE, HU, LT, LV, PL, RO, SI, and SK. We calculate the 2012 mean and standard deviation of serious crime for this reference group of 24. We then compute standardised 2012 scores for this outcome indicator by transforming positive into negative scores (so that less crime means a higher index score), subtracting the mean and dividing by the standard deviation. Source: Eurostat and UNODC (2012) (SCP treatment).



#### 4.4 Risk factors for crime

Crime can be seen as the result of individual determinants, societal factors and public and private action to prevent and fight crime. Government attempts to reduce crime contribute more or less effectively to the overall crime rate, but attempts are most effective if they target the individual, social, economic and international causes of crime. Hence, private and public prevention and repression are pull factors, reducing crime, whereas individual and social risk factors and physical opportunities are push factors, inducing crime. In this section we will review some of the individual and social push factors that figure most prominently in the literature.

In the contemporary literature it is commonly acknowledged that individual and contextual factors should not be treated as mutually exclusive, and multilevel analysis is used to unravel the complementary contributions of each factor to crime. The general opportunity theory, dominant in criminology, ties in with these single and multilevel approaches, as crime is thought to occur when three conditions coincide in time and space, all of which can be defined both at the individual and the contextual level (the dynamic multi-contextual criminal opportunity theory propounded by Wilcox et al. 2003):

- 1 The presence of and exposure to existing and potential offenders;
- 2 The presence of attractive targets; and
- 3 The level of technical or social protection of the targets (Cohen and Felson 1979),

To illustrate, on the individual level an offence may simply depend on whether or not a potential assault victim (2) carries a pepper spray (3) when passing a motivated perpetrator (1). From a contextual perspective, the opportunity theory suggests that countries with a comparable number of equally motivated offenders (1) and equally attractive targets (2) will have different crime rates due to the level of protection they organise around the targets, i.e. due to the effectiveness of their preventive safety policy (3). Additionally, crime rates will vary due to the way countries deal with offenders and succeed in discouraging other potential offenders, i.e. due to the effectiveness of law enforcement in reducing the number of potential offenders (1). Of course, not everything is determined by policy. The very fabric of society, such as the level and distribution of welfare provisions, confronts countries with different challenges from the outset. We will now take a closer look at risk factors at these varying levels.

#### Individual risk factors

##### *Demography*

The probability that an individual will develop delinquent behaviour is higher among men, especially young male adults, followed by male





adolescents. Delinquency drops off steeply when men approach their thirties, start a family, and value having a steady job to pay the mortgage (see e.g. Vercaigne et al. 2000). Women have been doing some catching up recently. Whereas in the past female offenders were typically associated with non-violent property crime, the range of offences is also broadening (e.g. violence and traffic offences). This is often explained as a side-effect of emancipation, which has not only allowed women to share the privileges previously enjoyed by men, but has also lured them into adopting some of the vices of an independent lifestyle.

Delinquency is also higher among migrant minorities than among indigenous inhabitants of Western societies. In part this can be explained by the larger share of young men in migrant groups, their less advantageous socioeconomic position, their overrepresentation in large cities (Blom et al. 2005; Eggen and Kessels 2012) and their social exclusion (Vercaigne et al. 2000). However, demographic and social factors prove insufficient to entirely explain the overrepresentation of certain migrant groups in crime statistics (Van Noije and Kessels 2012). Therefore, theories that focus on cultural aspects and on integration itself might add to the explanation (see e.g. Van der Leun et al. 2010)

#### *Socioeconomic factors*

The fewer a person's chances in the mainstream world, the more lucrative and appealing illicit means of earning a living may become. The relationship between low education level, poverty and unemployment on the one hand and crime on the other has been repeatedly confirmed in criminological and economic literature (Bushway and Reuter 2002). Growing up in less advantageous neighbourhoods may also contribute to deviant and delinquent behaviour. Depending on the stability and structure the school, the community and the family is able to provide, youngsters may spend a lot of their time on the streets, associating with the wrong kind of friends. This lack of social control and the concentration of poverty in certain neighbourhoods are among the many reasons why delinquency significantly increases with the level of urbanisation (Walker 1993; Findlay 1999).

Children from single-parent homes, where the parent typically has a hard time making ends meet and lacks the time to spend with and watch over the children, are especially at risk. In this context, it has been suggested by the economists Donohue and Levitt (2001), that the legalisation of abortion in the 1970s is one of the main explanations of the decline in crime in the US and the UK during the 1990s, simply because it prevented many underprivileged children and potential future delinquents from being born. This finding has been widely challenged for not being replicable with alternative data or tests (Joyce 2009), but has not as yet been discarded (Eide et al. 2006).

#### *Mental abilities*

The final individual factors that we will mention briefly are those relating to a person's mental abilities. The offender population contains a relatively



high share of individuals with mental disorders, mental impairments and substance abuse (Côté and Hodgins 1990; Mumola and Karberg 2006; Peay 2007). Complex pathology aside, such disabilities are generally related to self-restraint, the ability to oversee the consequences of one's behaviour and the ability to pass over instant gratification in favour of long-term benefits. Alcohol and drug abuse are widely recognised risk behaviour inducing crime (Loeber et al. 2001), in the short term lowering the mental threshold for aggression and violent crime in particular, and in the long run causing potential mental and social damage.

### Social risk factors

Social risk factors for crime often determine the presence of individual risk factors. For example, the state of the economy influences the number of unemployed and financially deprived individuals. The level of immigration determines the number of people having difficulty integrating in society. The level of inequality in society, in part influenced by political ideology, is thought to increase the need of deprived people to have their (fair or unfair) share of the national wealth (relative deprivation) (Vollaard et al. 2009). We will therefore try to avoid repetition and only mention the most significant factors on the social or macro-level.

#### *Economy and income inequality*

Rather than the actual level of welfare, it has been suggested that the level of inequality has the greatest impact on crime. Both decreases and increases in wealth tend to be distributed unequally, impacting on the position of the lower classes in relative rather than absolute terms. Inequality and the instability of social relations brought about by both downturn and growth appear to be key factors in the rise in crime (Josten 2003; UNSDRI 1976). It is for this reason that some scholars have pointed out that, especially in times of prosperity, "the loot is there for the taking" (Vollaard et al. 2009): the profits of crime are relatively high.

On the other hand, international studies show a strong relationship between high unemployment, which grows as the economy worsens, and crime rates (e.g. Eide et al. 2006). The impact of unemployment and income inequality seems largely limited to property crime, however (see e.g. Vollaard et al. 2009; Hooghe et al. 2011).

#### *Social disintegration*

A structure of opportunity arises where social control is lacking (Janowitz 1975). Social control is a likely product of strong social integration of a community. The notion that social integration is relevant to (fear of) delinquency in a neighbourhood has its roots in the social disintegration theory developed by Shaw and McKay (1942) of the sociological Chicago School of sociology. Although conceptualisations vary greatly, it seems justified to say that social integration is at least characterised by formal



and informal community networks in which residents participate (Bursik and Grasmik 1993; Franklin, Franklin and Fearn 2008). In addition to social contacts, there should be a shared framework of norms and expectations, notably rejecting deviant behaviour. Collective trust in others to stand up for shared interests is also known as collective self-efficacy in this research tradition, and considered beneficial to both actual safety (Bellair 2000; Hirschi 1969; Sampson et al. 1997) and perceived safety (Lee and Earnest 2003).

#### *Globalisation and European integration*

Globalisation decreases the importance of borders, distances and time lags across the world. The expansion of international mobility in recent decades has encouraged immigration from non-Western countries. The populations of the host countries have become increasingly heterogeneous, especially in urban areas, with the risk of segmentation along ethnic lines. One phenomenon that has sprung from globalisation is international terrorism, which is increasingly directed against Western societies. Organised crime and its involvement in human trafficking and drug trafficking, cybercrime, child pornography and sex tourism, evasion of tax and labour laws are other transnational forms of crime that profit from the fading of national borders.

Table 4.3 shows a selection of relevant and measurable risk factors and the country values available for 2012. There are no countries with systematically high or low scores on risk factors for crime. In general, Switzerland, Norway and Sweden have few risk factors to deal with and Greece and Spain many. Note that some risk factors show little variation at the country level, which suggests that they will not sufficiently explain crime differences. The share of young men, for instance, differs little between countries, whereas the strong involvement of young men in crime, not only as offenders but also as victims (Wittebrood and Van Wilsem 2000), is beyond doubt.

## 4.5 Interpreting crime rates

In this section we relate crime rates to risk factors for crime, as well as inputs and outputs of safety policy in subsequent sections. We only use data from 2012, so causality may be an issue. But because the risk factors are selected and confirmed in the international literature on crime, we assume that the observed figures in Section 4.5.1 can be interpreted causally. We only present bivariate relationships, but in the background we used simple regression models to check their sustainability. Finally, we present two groups of recorded crimes: total crime and more serious crime. More serious crime consists of violence, robbery, burglary, motor vehicle theft and drugs offences. By adding theft (not of motor vehicles and with no use of violence), destruction, traffic offences and other offences, we obtain the total crime rate.



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Table 4.3 Selected risk factors for explaining crime, 2012 (% of total population)

Region	Country	crime	ym	sp	im	sl	le	ne	ad	po	in	un
Western Europe	Austria	42.3	9.5	6.6	2.4	7.8	11.4	9.7	7.3	18.5	4.0	4.9
	Belgium	129.2	9.3	7.7	3.4	12.0	18.1	15.0	3.2	21.6	4.0	7.7
	France	60.2	9.1	7.3	5.4	11.5	16.7	16.6	4.6	19.1	4.9	9.4
	Germany	31.3	8.8	5.5	.	10.5	13.2	9.9	6.0	19.6	4.5	5.4
	Ireland	56.2	9.7	8.8	1.2	9.7	14.1	21.1	.	30.0	4.7	14.7
	Luxembourg	78.5	9.7	5.9	2.2	8.1	13.9	8.2	3.4	18.4	4.7	6.1
	Netherlands	82.3	9.3	5.5	6.2	8.8	16.9	6.7	1.2	15.0	4.2	5.8
	Switzerland	44.8	9.3	4.4	4.4	5.5	10.6	9.6	.	17.5	4.4	4.1
	United Kingdom	90.9	10.0	8.5	4.4	13.4	15.2	16.3	2.9	24.1	6.1	8.0
Northern Europe	Denmark	98.9	9.4	6.2	2.9	9.1	18.3	12.0	11.6	19.0	3.6	7.5
	Finland	53.7	9.5	5.5	0.5	8.9	10.0	11.9	3.7	17.2	3.9	7.7
	Norway	43.9	10.1	7.2	2.9	14.8	17.9	8.4	3.5	13.7	3.6	3.1
	Sweden	83.8	9.9	6.6	3.9	7.5	9.2	9.7	1.8	15.6	4.2	8.0
Southern Europe	Cyprus	24.7	11.8	4.8	.	11.4	.	.	.	27.1	.	.
	Greece	59.1	8.7	4.2	2.1	11.3	17.5	27.0	.	34.6	5.8	24.4
	Italy	54.0	7.9	5.4	1.4	17.3	28.2	24.6	0.5	29.9	5.3	10.6
	Malta	28.0	10.6	6.2	.	21.1	.	.	.	23.1	.	.
	Portugal	51.7	8.4	6.1	3.9	20.5	42.1	16.6	0.9	25.3	5.8	15.5
	Spain	58.8	8.3	5.9	2.5	24.7	35.8	25.3	0.7	27.2	5.5	24.8
Central and Eastern Europe	Bulgaria	25.5	9.2	4.7	.	12.5	.	.	.	49.3	.	.
	Croatia	24.4	9.4	.	.	5.1	.	0.0	.	32.6	.	.
	Czech Republic	20.9	9.3	8.3	0.3	5.5	6.3	13.4	1.2	15.4	3.7	7.0
	Estonia	47.1	10.0	8.5	.	10.3	13.6	15.9	7.2	23.4	5.7	10.0
	Hungary	34.9	9.4	8.3	0.1	11.8	12.5	18.9	2.8	32.4	4.4	11.0
	Latvia	26.9	10.0	11.5	.	10.6	14.6	19.1	.	36.2	.	15.0
	Lithuania	30.0	10.5	9.6	.	6.5	.	.	.	32.5	.	0.0
	Poland	19.4	10.8	7.7	0.1	5.7	5.6	16.0	3.8	26.7	4.6	10.1
	Romania	10.5	9.6	5.7	.	17.8	.	.	.	41.7	.	0.0
	Slovak Republic	13.1	10.8	6.5	0.0	5.3	5.9	18.8	0.0	20.5	3.5	14.0
Slovenia	17.9	9.0	7.9	.	4.4	5.8	11.0	5.9	19.6	3.6	8.8	
Oceania	Australia	65.9	10.7	.	7.5	.	13.4	11.7	1.4	.	5.5	5.2
	New Zealand	129.3	10.8	.	7.4	.	20.0	14.8	0.6	.	5.7	6.9
Northern America	Canada	115.8	10.3	.	8.0	.	7.8	13.2	2.2	.	5.1	7.3
	United States	86.8	10.6	.	7.9	.	10.7	15.2	2.7	.	8.3	8.1
Eastern Asia	Japan	12.3	7.8	.	0.8	.	.	.	0.2	.	5.9	4.3
	Korea	.	.	.	.	.	1.8	18.5	1.4	.	4.7	3.2

Notes: Crime = total weighed serious crime rate; ym = young men 15-29 years (un-data); sp: single-parent families (Eurostat); im = non-Western immigrants (oecd); sl = school-leavers 18-24 years (Eurostat); le = low-educated 25-34 years (oecd.Stat); ne = not employed 15-29 years (oecd.Stat); ad = deceased due to use alcohol/drugs (oecd.Stat); po = at risk of poverty or social exclusion (Eurostat); in = income inequality (oecd Income Distribution Database (idd)); un = unemployment rate (oecd: Economic Outlook No 97 - June 2015).



#### 4.5.1 Risk factors and crime rates

Which of the selected risk factors appears to contribute to the explanation of cross-national differences in recorded crime rates? We observe little correlation between risk factors and crime. The link between serious crime and risk factors is consistently stronger than the relations between total crime and risk factors. The difference is not large, but it is consistent. Hence we continue this analysis using figures exclusively for serious crime.

##### *Share of young men*

One important candidate for explaining differences in crime rates is the share of young men in the population. At the micro-level there is unambiguous evidence of its relevance, but at the country level we find no significant relationship.

##### *Share of non-Western immigrants*

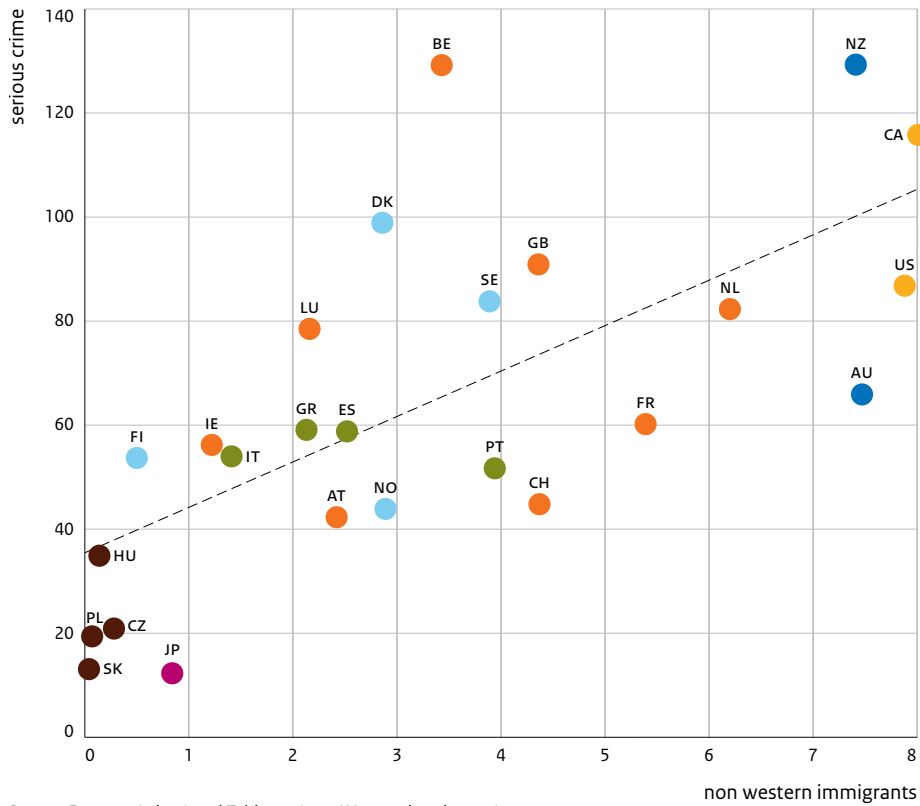
A stronger and significant relationship exists between crime and the share of non-Western immigrants (Figure 4.5). There is a chance that this is an illusory association, as competing risk factors for crime, such as low incomes, low education or city-dwelling, are overrepresented among non-Western migrants. However, these factors appear to be uncorrelated with national crime rates at country level. Other unobserved factors may still explain the link between immigrants and crime, whether socio-economic, cultural, psychological or relating to the process of immigration and integration itself (Van der Leun et al. 2010). One such factor may be the transmigration of criminality. In a review of the international literature on this relationship, Bell and Machin (2011) found a significant relationship with property crime but no relationship with violent crime. They suggested that this was caused by the poor labour market opportunities for migrants. A final intruding factor that should be mentioned is the fact that the well-off countries of Northern America, Oceania, Western and Northern Europe, in particular, attract and receive large amounts of non-Western immigrants, as is clearly visible in Figure 4.5. Reasoning in line with the safety paradox, it is these same countries which are likely to have relatively high recorded crime rates for institutional and cultural reasons. Earlier research indicates that immigration is sure to have an impact on crime rates (Easton et al. 2010), but the possibility cannot be ruled out that the correlation is somewhat inflated by national systems of crime reporting and recording.

##### *Income inequality*

A third risk factor that seems to add marginally to the explanation of differences in recorded crime rates is the level of income inequality. However, no significant relationship is found between income inequality and serious crime. According to earlier studies (see Section 4.4), this connection becomes stronger when wealth increases or decreases, which is often distributed unequally. The literature also indicated that a worsening of the relative position of low-income groups is likely to be of more importance



Figure 4.5 Relationship between share of non-Western immigrants and level of serious crime, 2012



Source: Eurostat (crime) and Table 4.3 (non-Western immigrants).

than income differences in absolute terms. That would suggest that our figures, which represent inequality in static terms, perform suboptimally in explaining crime rates.

*Youth unemployment*

Finally, no significant relationship is found between crime and youth unemployment. The theory suggests a positive relationship. Youth unemployment is very high in some Southern European countries (Greece, Italy, Spain), but these countries show moderate levels of recorded crime. On the other hand, youth unemployment is very low in some Northern European countries (Sweden, Denmark, Norway), which show moderate to high levels of crime. It may be that the recent global economic crisis has distorted the impact of youth unemployment. Some countries were hit hard, with especially devastating effects on job opportunities for young people. These unemployed youngsters from all walks of life will not have resorted to crime overnight. Therefore, an indicator for structural youth unemployment might have worked better than our indicator for youth unemployment in 2012.



*Preliminary conclusion*

If all selected risk factors are simultaneously regressed on the levels of serious crime, no statistically significant factors remain. Removing insignificant determinants step-by-step results in one remaining significant risk factor: the share of non-Western immigrants ( $p < 0.01$ ). To obtain an impression for subsequent relevant factors, we removed non-Western immigrants from the list of determinants and regressed again. Then, only the share of young men and the share of low-educated youth remain, but the relationship is marginally significant ( $p < 0.10$ ). We conclude that the risk factors in our data set are inadequate to explain the country differences in recorded crime. Let us turn our attention to policy inputs and outputs and see whether they do a better job.

## 4.5.2 Inputs and crime rates

In this section we relate two input indicators to crime rates: the share of public expenditure devoted to public safety and the share of police officers working on public safety. Deployment of more resources is expected to reduce crime. Resources may be used to increase the probabilities of being caught and punished: important outputs of law enforcement which we will review in the next section. Additional expenditure and manpower may be used to increase social safety in many other ways as well. Compared to output measures, they therefore give a more indirect indication of the effective elements in safety policy.

*Expenditure on social safety*

Expenditure ranges from 1.0% of GDP to just over 2.5% (Figure 4.6). In relative terms, the Northern European countries spend the least on social safety and the Central and Eastern countries, as well as the United Kingdom, the most. This result is the opposite of the (weighted) crime rates in Table 4.2, with Northern European crime rates at the top end and Central and Eastern European crime at the bottom.

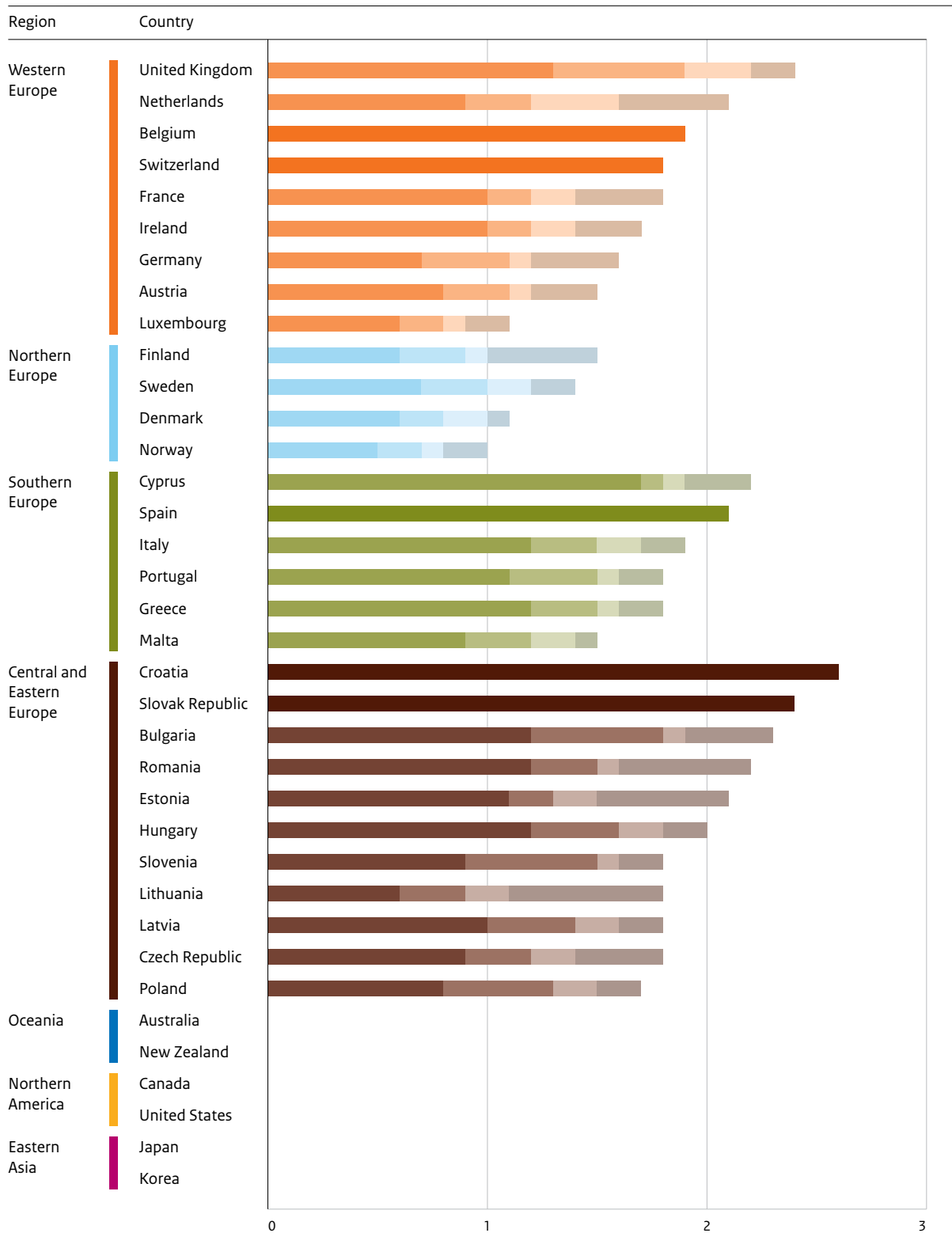
In general, most of the public order and safety expenditure at the national level is allocated to the police (65%), followed by the courts (23%) and prisons (12%). However, these shares differ substantially between countries. Police shares in expenditure are high in Southern European countries (especially Cyprus and Greece) and low in Lithuania and Finland. Court shares are relatively high in Slovenia and Poland and prison shares in Denmark. No other regional patterns could be detected.

In general, expenditure on public order and safety increased between 1995 (1.7% of GDP) and 2012 (1.8%), but this increase mainly took place between 2005 and 2010. Expenditure on public order and safety increased in a majority of countries (Figure 4.7).



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Figure 4.6 National expenditure on public order and safety, 2012 (% share of GDP)



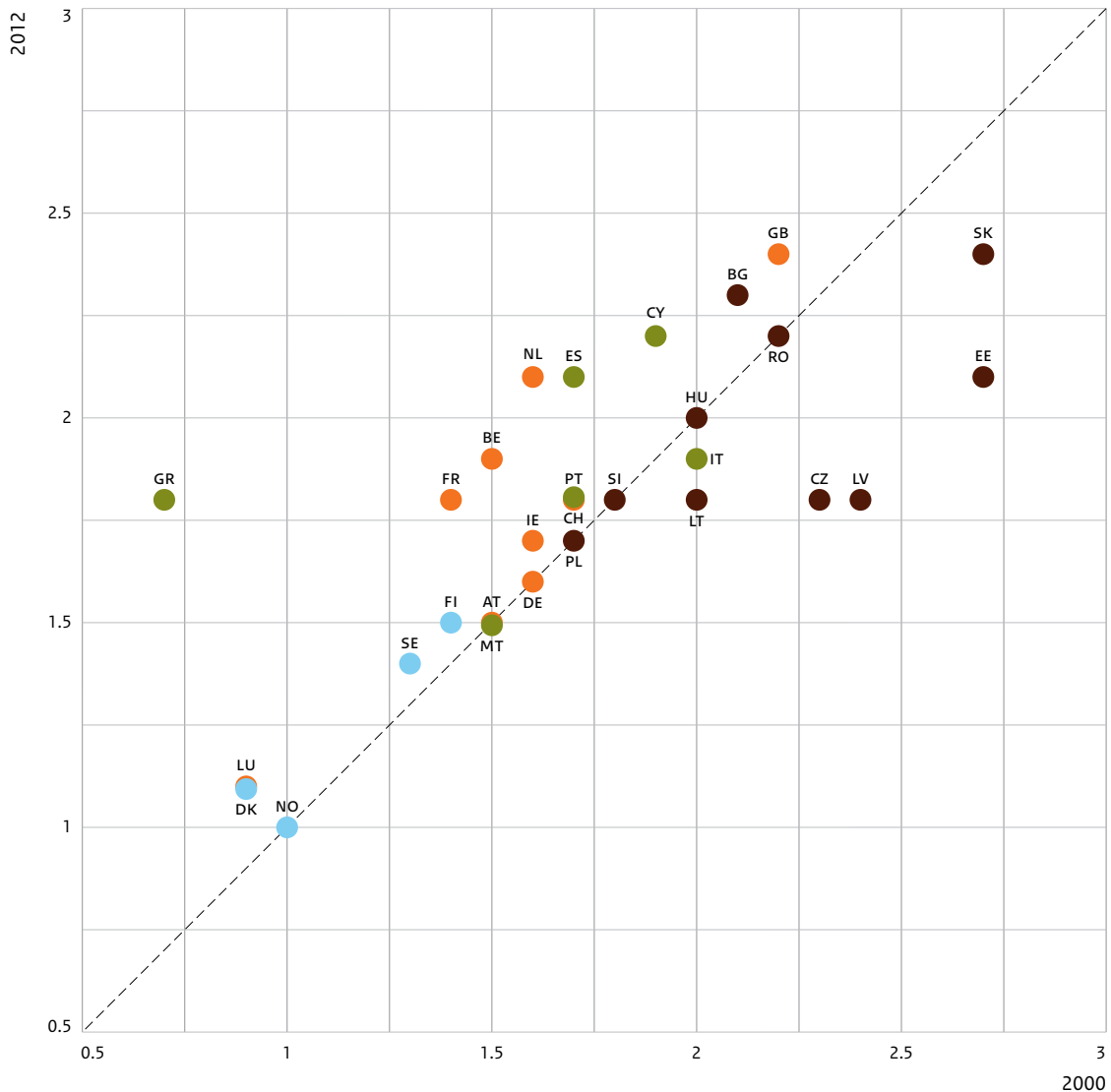
Source: Eurostat (except non-European countries).

exp 2012 total exp 2012 police exp 2012 courts exp 2012 prisons exp 2012 other/indivisible





Figure 4.7 National expenditure on public order and safety in 2000 and 2012 (share of GDP in %)



Source: Eurostat (except non-European countries).

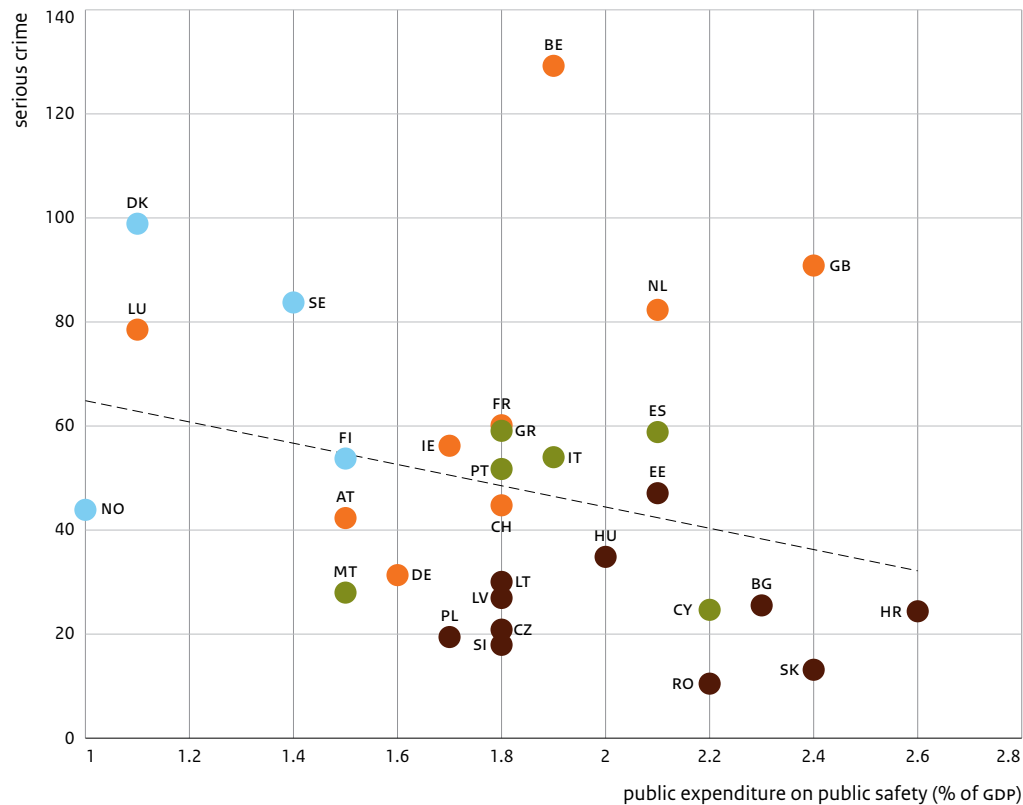
Countries with low initial expenditure levels now spend more (like Greece) and countries with high initial levels (such as Slovak Republic, Estonia, Lithuania and Latvia) now spend less on public safety. We therefore conclude that expenditures have converged in Europe. In terms of standard deviations, the differences in expenditure between countries decreased by 40% between 2000 and 2012.

We will now examine whether additional expenditure is indeed associated with lower crime rates, as logic suggests. The relationship between expenditure and serious crime at the country level operates in the expect-



ed direction, but is not statistically significant ( $p < 0.01$ ). Belgium and the United Kingdom are the main outliers, with crime levels that are much higher than would be expected on the basis of their relatively high expenditure. Furthermore, there are many countries with the same level of expenditure but different levels of crime (Figure 4.8).

Figure 4.8 Relationship between share of public expenditure on public safety and level of serious crime, 2012



Source: Eurostat.

*Police officers*

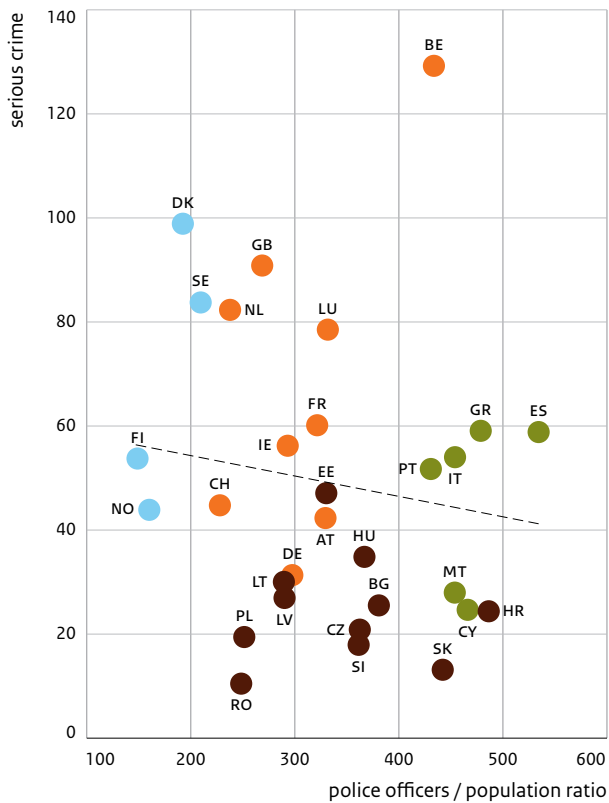
If we move from the investment of money to the investment of labour, and more specifically the number of police officers per inhabitant, the overall picture is rather similar to that for expenditure (Table 4.4). Northern European countries have low levels of police deployment and Southern European countries have high levels. Central and Eastern European countries show moderate to high levels and Western European countries low to moderate levels.

In most countries, the figures change little over time, but some countries have substantially expanded their police capacity (Slovak Republic), while some have reduced their capacity (Cyprus, Latvia). Again levels have converged, so that differences in police capacity decreased by 14% between



2000 and 2012. This reduction is smaller than in the case of expenditure. A higher number of police officers shows a significant, albeit weak, association with less recorded serious crime at the country level (Figure 4.9). Here again, similar numbers of police officers per capita generate different levels of crime.

Figure 4.9 Relationship between share of police officers in the population and level of serious crime, 2012



Source: Eurostat.

*Preliminary conclusion*

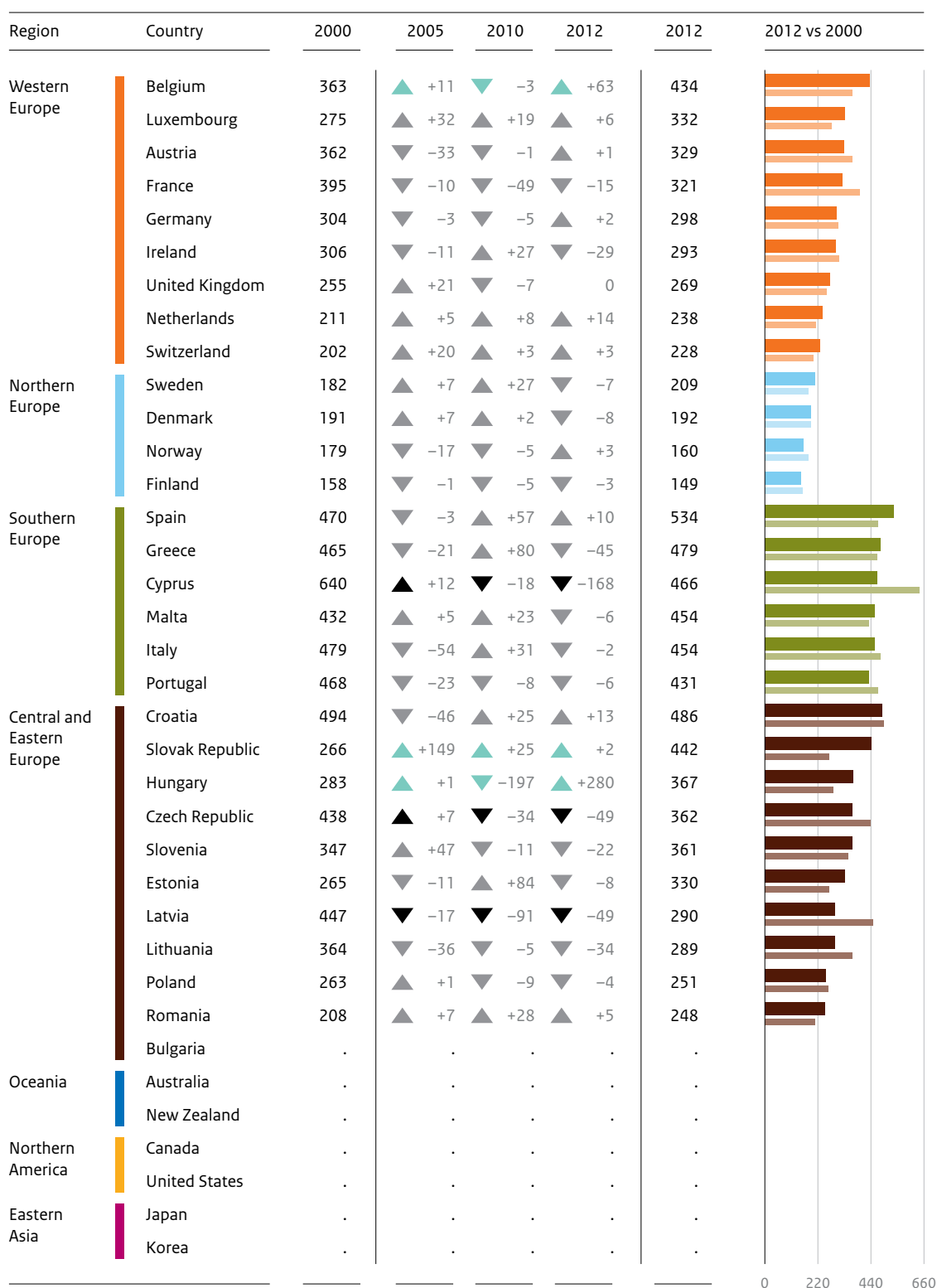
Simultaneously including the inputs of money and labour in a regression model of serious crime does not yield significant effects. Although the additional deployment of resources, whether in money or police labour, is associated with a reduction of crime, this combined effect is weak and not statistically significant ( $p < 0.35$ ).



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Table 4.4 Police officers in 1995 and changes in 2000, 2005, 2010 and 2012 (per 100,000 of the population)

For reading instructions see page 49



a Compared to five years earlier (compared to two years earlier in the case of 2012). Source: Eurostat (except non-European countries).

▲ largest increase  
▼ largest decrease  
2012  
2000



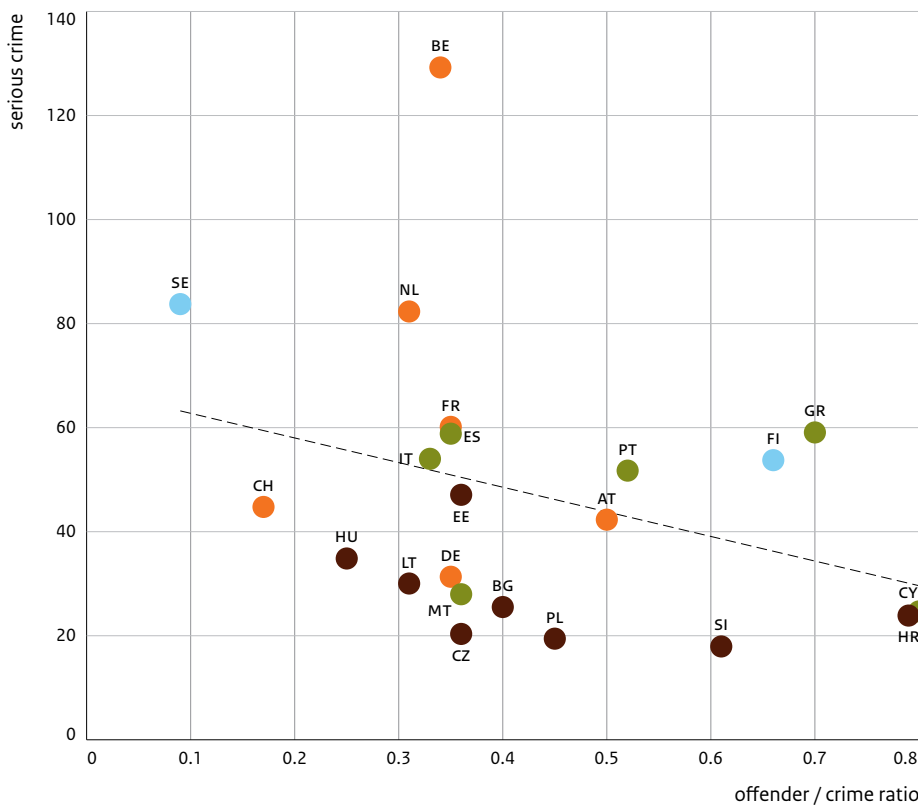
### 4.5.3 Outputs and crime rates

In this section we assess the association between several key policy output indicators and crime rates. We distinguish between three successive steps in the judicial process: the probability of being caught, the probability of being punished and the probability of being imprisoned. High probabilities are characteristic of a repressive system, assumed to render criminal activities less attractive, enhancing both specific and general deterrence.

#### *The probability of being caught*

The probability of being caught reduces crime rates at a country level (Figure 4.10); however, this relationship is insignificant ( $p < 0.15$ ) and weak. Similar probabilities of being caught coincide with different levels of recorded crime. So the explanatory power of this probability is weak.

Figure 4.10 Relationship between offender/crime ratio<sup>a</sup> (proxy for the probability of being caught) and level of serious crime, 2012



a Number of suspects divided by number of recorded crimes. Source: Eurostat.

#### *The probability of being punished*

Arrested perpetrators are not always convicted of a crime and sentenced. There are many reasons why a case may be dismissed. There may be a lack of evidence, a technical error may have occurred while gathering evidence,



the prosecutor may deem it not to be in the public interest to prosecute, or the prosecutor may prefer a conditional dismissal, as a tactic to prevent recidivism. The inevitability of actually having to undergo a punishment is expected to reduce the appeal of offending. Unfortunately, no complete and consistent inventory is available on the distribution of types of sanctions. Table 4.5 gives an impression of national enforcements of different sanctions. In 2010, Finland, Denmark and the United Kingdom imposed most sanctions per capita, which by and large consisted of fines. Community service orders were especially popular in Poland, Estonia, the Netherlands and the United Kingdom. Electronic monitoring was still a rare practice in 2010, except in the United Kingdom. Bulgaria, Lithuania and Austria imposed the most prison sentences. No clear regional patterns emerge.

The ratio of the number of convictions to the number of suspects is used as a proxy for the probability of being punished. No relationship was found with the level of serious crime. At country level, therefore, a higher probability of being punished if caught seems to have no effect on rates of recorded crime.

#### *The probability of being imprisoned*

In most Western societies, imprisonment is the most severe sanction that a judge can impose. Imprisonment rates are very high in the United States (730 per 100,000 in 2010). No European country comes anywhere near this level (Table 4.6). In 2012, Lithuania achieved the highest level (about 300 per 100,000), closely followed by Latvia and Estonia. Northern European countries tend to show fairly low levels of imprisonment. No other regional patterns of imprisonment emerged, although some Southern European countries (Cyprus, Greece) show low levels of imprisonment and most Central and Eastern European countries (except Croatia) show high levels of imprisonment.

In most countries, the level of imprisonment changed little between 1995 and 2012. Some countries show substantial increases (Cyprus, Malta, Slovenia, Croatia and Greece), but these countries started out with low levels of imprisonment in 1995. In some other countries the level of imprisonment decreased substantially (Romania, Lithuania, Latvia and Estonia), but these countries started out with high levels in 1995. This leads us to conclude that levels of imprisonment have converged in Europe, especially between 2000 and 2005. In terms of standard deviations, the differences in levels of imprisonment between countries decreased by 27%.

Moving on to the probability of being imprisoned, we find that a higher probability is significantly associated with a lower crime rate (Figure 4.11).

However, the association is weak. Countries with low imprisonment rates, in particular, have varying levels of serious crime. Where crime levels are high, such as in the Northern European states, the safety paradox or other



SOCIAL SAFETY

Table 4.5 Types of sanctions imposed, 2010 (rates per 100,000 of the population)

Region	Country	Total	Fines	Community services	Electronic monitoring	Imprisonment	Unkown / other
Western Europe	Austria	458	145	82	1	230	.
	Belgium	.	.	111	32	.	.
	France	1,082	427	42	.	193	420
	Germany	1,005	703	.	.	54	248
	Ireland	.	.	.	.	.	.
	Luxembourg	.	.	.	.	.	.
	Netherlands	578	225	191	.	133	29
	Switzerland	1,339	.	.	4	94	1241
	United Kingdom	2,458	1,605	161	211	184	297
Northern Europe	Denmark	2,611	2,191	.	.	178	242
	Finland	3,851	3,385	54	.	119	293
	Norway	.	.	54	21	.	.
	Sweden	1,479	386	59	38	142	854
Southern Europe	Cyprus	.	.	50	.	.	.
	Greece	384	184	.	.	.	200
	Italy	.	.	0	.	.	.
	Malta	.	.	4	.	.	.
	Portugal	732	494	82	7	59	90
	Spain	.	.	.	.	.	.
Central and Eastern Europe	Bulgaria	517	28	78	.	297	114
	Croatia	670	30	22	.	105	513
	Czech Republic	672	33	80	.	112	447
	Estonia	.	.	224	10	.	.
	Hungary	892	289	103	.	103	397
	Latvia	.	.	.	.	.	.
	Lithuania	471	146	.	.	249	76
	Poland	1,134	241	311	1	104	477
	Romania	.	.	.	.	.	.
	Slovak Republic	.	.	23	.	.	.
	Slovenia	395	12	.	.	59	324
Oceania	Australia	.	.	.	.	.	.
	New Zealand	.	.	.	.	.	.
Northern America	Canada	.	.	.	.	.	.
	United States	.	.	.	.	.	.
Eastern Asia	Japan	.	.	.	.	.	.
	Korea	.	.	.	.	.	.

Source: European Sourcebook of Crime and Criminal Justice Statistics 2014.



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Table 4.6 Number of prisoners in 1995 and changes in 2000, 2005, 2010 and 2012 (per 100,000 of the population)

For reading instructions see page 49

Region	Country	1995	2000	2005	2010	2012	2012	2012 vs 1995
Western Europe	United Kingdom	101	▲ +22	▲ +17	▲ +12	▲ +1	153	
	Luxembourg	111	▼ -19	▲ +69	▼ -29	▼ -11	121	
	France	92	▼ -9	▲ +14	▲ +9	▲ +10	116	
	Belgium	74	▲ +11	▲ +5	▲ +12	▲ +2	104	
	Austria	78	▲ +8	▲ +23	▼ -7	▲ +2	104	
	Switzerland	81	▼ -2	▲ +4	▼ -2	▲ +4	85	
	Ireland	56	▲ +20	0	▲ +4	▲ +3	83	
	Netherlands	70	▲ +10	▲ +30	▼ -24	▼ -5	81	
	Germany	75	▲ +10	▲ +11	▼ -11	▼ -5	80	
Northern Europe	Norway	60	▼ -3	▲ +11	▲ +6	▲ +2	76	
	Denmark	65	▼ -2	▲ +12	▼ -4	0	71	
	Sweden	71	▼ -9	▲ +16	▼ -5	▼ -5	68	
	Finland	61	▼ -5	▲ +18	▼ -15	0	59	
Southern Europe	Spain	114	▼ -2	▲ +29	▲ +19	▼ -13	147	
	Malta	51	▲ +11	▲ +10	▲ +72	▼ -4	140	
	Portugal	117	▲ +6	▼ -3	▼ -11	▲ +18	127	
	Greece	55	▲ +18	▲ +15	▲ +23	▼ -2	109	
	Italy	86	▲ +9	▲ +6	▲ +11	▼ -4	108	
	Cyprus	31	▲ +10	▲ +29	▲ +6	▼ -15	61	
Central and Eastern Europe	Lithuania	364	▼ -116	▼ -15	▲ +33	▲ +34	300	
	Latvia	379	▼ -9	▼ -66	▼ -3	▼ -27	274	
	Estonia	305	▲ +36	▼ -13	▼ -75	▼ -8	245	
	Poland	171	0	▲ +46	▼ -5	▲ +8	220	
	Czech Republic	189	▲ +30	▼ -33	▲ +24	▲ +9	219	
	Slovak Republic	149	▼ -17	▲ +40	▲ +12	▲ +18	202	
	Hungary	121	▲ +31	▲ +4	▲ +8	▲ +9	173	
	Romania	200	▲ +18	▼ -49	▼ -38	▲ +18	149	
	Bulgaria	108	▲ +10	▲ +29	▼ -21	▲ +8	134	
	Croatia	58	0	▲ +20	▲ +39	▼ -9	108	
	Slovenia	33	▲ +24	0	▲ +10	0	67	
Oceania	Australia	.	.	.	.	.	.	
	New Zealand	.	.	.	.	.	.	
Northern America	Canada	.	.	.	.	.	.	
	United States	.	.	.	.	.	.	
Eastern Asia	Japan	.	.	.	.	.	.	
	Korea	.	.	.	.	.	.	

Source: Eurostat (except non-European countries).

▲ largest increase  
▼ largest decrease

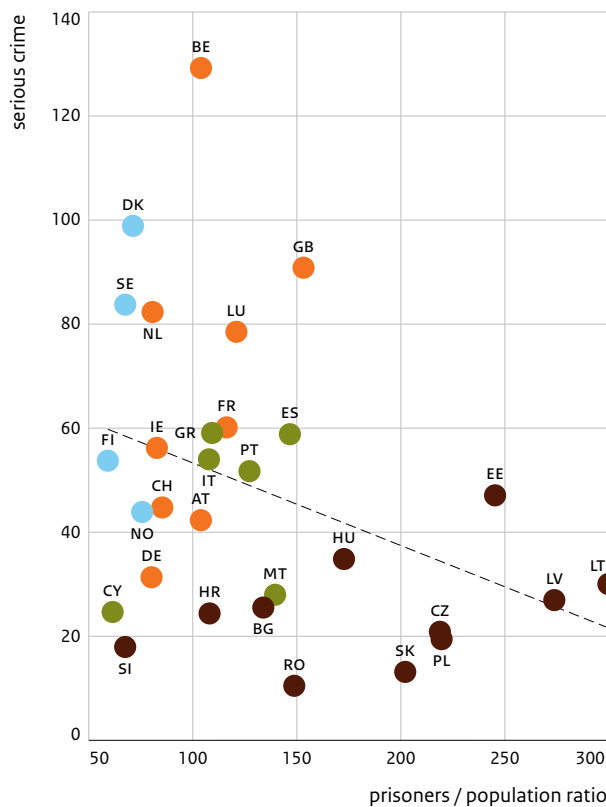
2012  
1995





institutional and cultural differences may be part of the explanation. We therefore need to be cautious in interpreting the relationship between imprisonment and serious crime as causal. Nonetheless, our finding suggests that imprisonment and crime rates are related, whether artificially due to the safety paradox, due to incapacitation, due to in-prison resocialisation programs, or due to deterrence.

Figure 4.11 Relationship between imprisonment ratio and level of serious crime, 2012



Source: Eurostat.

*Preliminary conclusion*

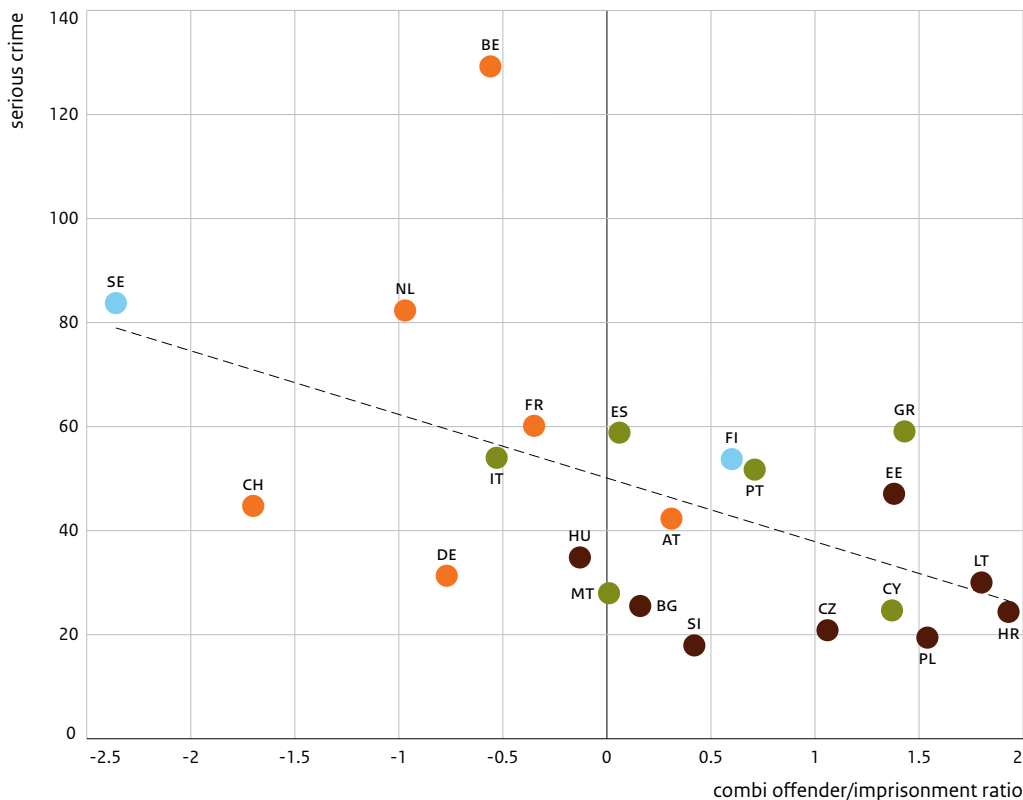
When the risk factors and inputs and outputs of the safety system are combined in one regression model, only the probability of being caught and the probability of imprisonment turn out to be significant. The share of non-Western immigrants is highly correlated with – and therefore overshadowed by – the level of imprisonment. Together, these factors only explain one third of all differences. Figure 4.12 presents the combined association of the probability of being caught and of imprisonment on the one hand, and serious crime on the other. The share of non-Western immigrants is not included, because there would be too many missing countries. Many unexplained differences remain. In particular, the crime rates



in Belgium are hardly explained by the combined arrest and imprisonment ratios, but the serious crime rates in the Netherlands and Greece are also clearly higher than expected based on their arrest and imprisonment ratios. On the other hand, Switzerland, Germany and Slovak Republic show lower levels of serious crime than might be expected.

All in all, our findings suggest that both the probability of arrest and the probability of imprisonment may contribute to effective law enforcement. Durlauf and Nagin (2011) argue that it is more effective to shift available resources from severity-based policies (risk and severity of punishment) to risk-based policies (risk of arrest). Scholars disagree about the deterrent effect of the *severity* of punishment. Some claim that the *certainty* of punishment is much more effective (Lee and McCrary 2009; Wright 2010), whereas others do find a significant effect of the duration of imprisonment (Abrams 2011; Drago et al. 2009). Impact evaluations are generally pessimistic about the contribution of incarceration to desistance. Sober and strict prison regimes have been found to foster deviance rather than combating it. This is different when the time spent behind bars is used effectively for individual rehabilitation programmes, which actually further a convict's future prospects (Van Noije and Wittebrood 2008; Sapouna et al. 2011). However, this is a costly strategy that is by no means equally adopted across our selection of countries. Nonetheless, imprisonment also contributes to lower crime rates by temporarily incapacitating convicts, and potentially by deterring others in the outside world.

Figure 4.12 Relationship between combination of offender/imprisonment ratio and level of serious crime, 2012



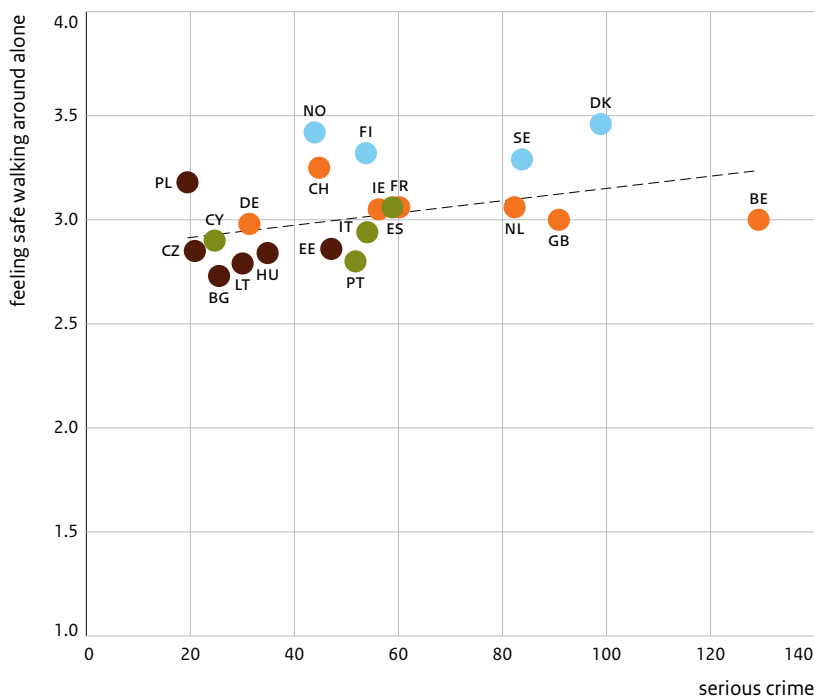
Note: Adding together of standardized values of two variables. Source: Eurostat.



#### 4.6 Citizens' perceptions of social safety policy

Subjective safety has become a major policy objective in recent decades. Apart from *objective safety*, quality of life depends on citizens' perception of their freedom of movement. Subjective safety has many intangible components, the most important of which are the perception of crime, the perceived risk of personal victimisation and fear of crime. The relationship between objective safety (crime) and subjective safety is a complex one, which has been the subject of innumerable studies and much debate. A discussion of the literature on this matter extends beyond the scope of this chapter, but we are able to illustrate the often counterintuitive nature of the relationship, which is also found with local and national data. Broadly speaking, people more often indicate feeling safe when walking alone after dark in countries with higher crime rates, and vice versa (Figure 4.13), although the link is not statistically significant. Inhabitants from Northern Europe feel safer than might be expected given the actual recorded crime levels. However, most nationalities feel less safe than might be deduced on the basis of their actual safety. This suggests, as is often confirmed in literature, that crime is a weak determinant of subjective safety, and is often overruled by other situational, social, cultural and psychological factors.

Figure 4.13 Relationship between feeling safe walking alone in local area after dark and the level of recorded serious crime, 2012



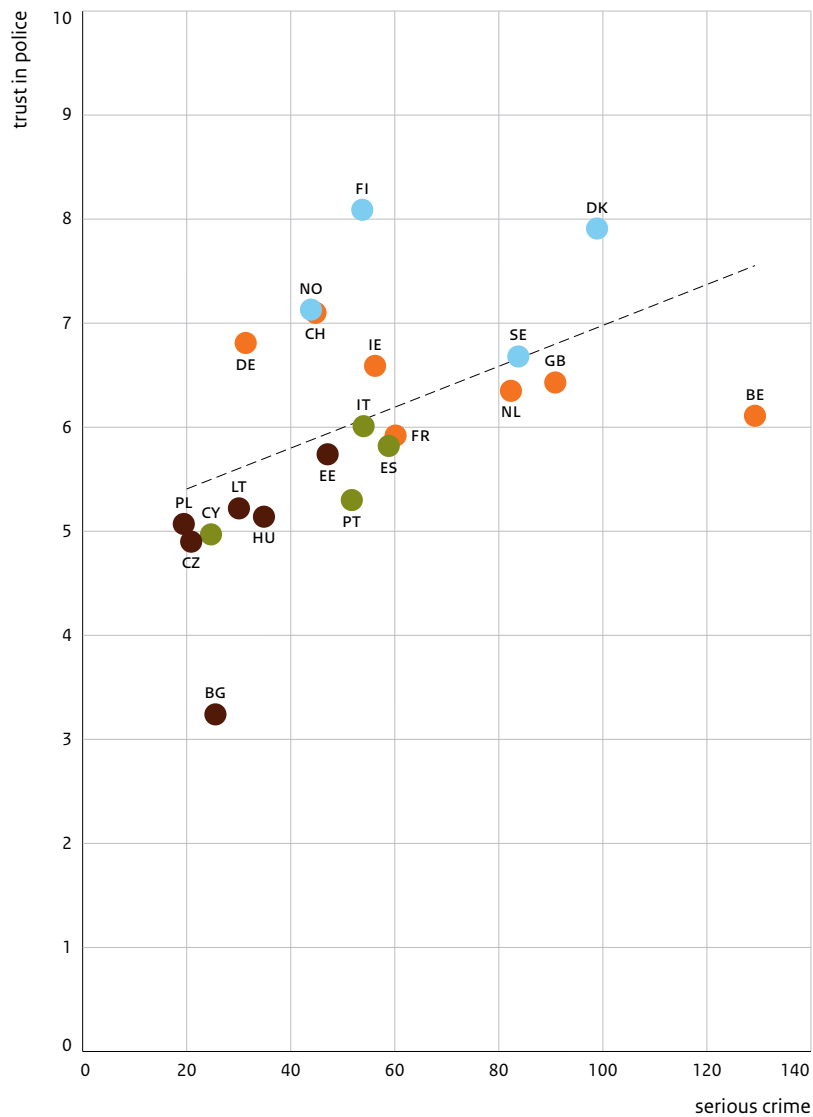
Source: European Social Survey 2012.



One such factor is citizens' trust in the public authorities whose job it is to protect society against crime, and in the legal system to which they are themselves subjected. Do people feel they can rely on adequate and just action and protection from the police and the judiciary when they or their children risk being victimised, but also when they provided valuable information as witnesses, or intervene as bystanders?

Similar to feelings of safety, it is the inhabitants of Northern Europe, but also the Swiss, Germans and Irish, who report high levels of trust in the police (Figure 4.14). In Central and Eastern Europe, Cyprus and Portugal report the lowest levels of trust. Trust in the legal system (figure 4.15) is slightly but consistently lower than trust in the police. Northern European

Figure 4.14 Relationship between trust in the police and the level of recorded serious crime, 2012



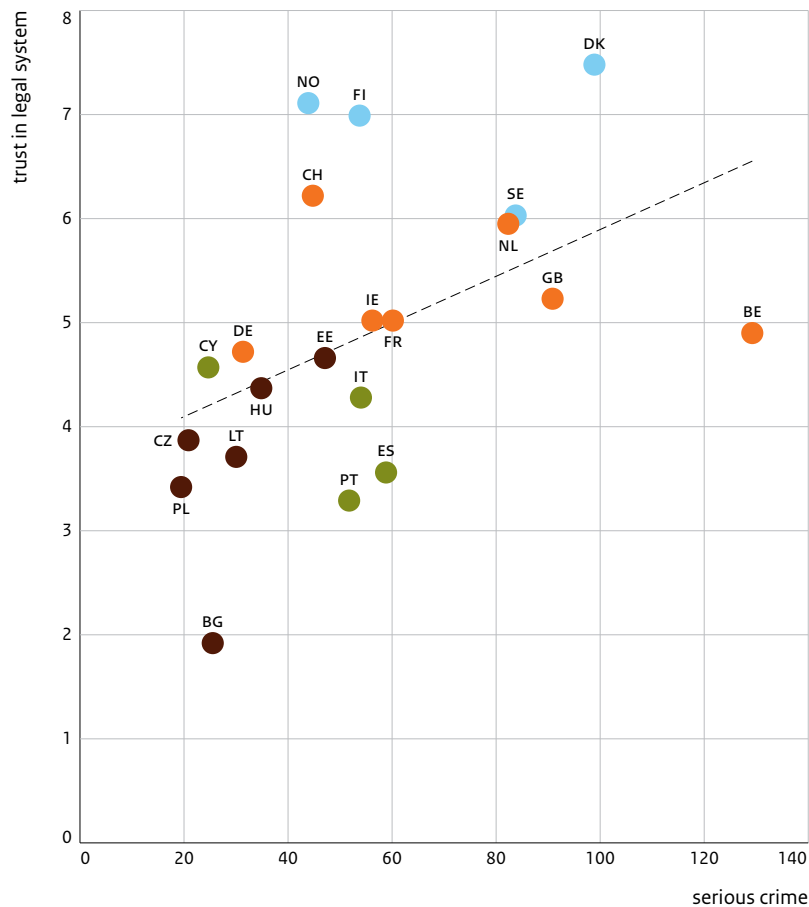
Source trust: European Social Survey 2012.



citizens again report the highest levels of trust, together with the Swiss and the Dutch. Central and Eastern Europeans, Portugal and Spain report the lowest levels.

What about the association between trust and crime at the country level? Two arguments, each explaining one of the opposite relationships, help

Figure 4.15 Relationship between trust in the legal system and the level of recorded serious crime, 2012



Source trust: European Social Survey 2012.

us to understand why we expect a relationship in the first place. First, high crime rates may signal a lack of control by the authorities, which in turn may undermine the public's trust. Here, high crime rates are the *cause* of low trust. Second, in high-trust societies citizens are more likely to report crimes to the police, boosting recorded crime and crime levels. Here, high crime rates are a *result* of high trust, via more reliable records. Trust seems to be slightly higher in countries with higher crime rates (see Figures 4.14 and 4.15), although the relationships are not statistically



significant. Our data from the European Social Survey thus seem to favour the latter of the two arguments: trust as an explanation for higher crime reporting and subsequent registration. If this logic holds, its implications are more widespread, as it suggests that the high crime rates of the high-trust Northern European countries, the United Kingdom and the Netherlands, as compared to low-trust Central and Eastern Europe, are in large part explained by more reliable reporting and registration.

#### 4.7 Conclusion

Western politicians have been responsive to the increasingly vocal calls from citizens to protect them from crime, incivilities and feelings of unsafety. Accordingly, they have allocated a good deal of public spending to safety policy. However, not everything has been invested in stricter law enforcement. Prevention is an integral part of safety policy, which is highlighted or downplayed depending on the incumbent government, the *zeitgeist* and the financial resources. In many countries, extensive local programmes have been implemented to improve the physical and social fabric of deprived urban areas. Private actors, including citizens, have been given responsibility for the safety of their immediate surroundings. No international inventory of inputs and outputs of this diverse and decentralised set of private and public measures is readily available, which is why our analysis focused on law enforcement, the ultimate remedy when a criminal act has actually occurred. However, we must be aware that differences in national preventive strategies may be key to understanding differences in national crime rates.

Confining our analysis to law enforcement still does not solve all the data problems. For reasons that have been discussed extensively, the comparability of national recorded crime rates themselves is problematic. Different cultures and procedures regarding the reporting and recording of crimes, different penal codes in terms of definitions and legalisation, and different counting bases, lead to artificial differences in recorded crime rates. Differences in crime trends therefore provide more insights than differences in levels at a given point in time. Using reported crime rates from international victim surveys would enable us to circumvent many of these problems, but these were discontinued from 2005. We therefore resort to recorded crime rates, while always bearing the safety paradox in mind: the more effective a country is in detecting crime and catching criminals, and – strongly related to this – the more its citizens are inclined to report offences to the police, the higher its official crime rate tends to be.

To calculate the total crime rate, weighted scores for offence severity published by Statistics Canada (2009) were used. Overall recorded crime rates tend to be high in Northern and low in Central and Eastern Europe. In eleven countries crime diminished, in ten countries it remained stable



and in eight countries crime increased. We observe a shift from burglary and motor vehicle theft to violence. Since violence outweighs burglary and motor vehicle theft in severity, an increase in violence nullifies any decrease in other types of crime. Violence, robbery and sexual offences rose between 1995 and 2012, with big differences between countries. In about one third of the countries, violence declined. National robbery rates seem to be converging towards the international mean score. More favourable is the drop in burglary, which is general across all types of countries. Decreasing levels of burglary have been attributed to private security measures in homes and businesses. Most spectacular is the decrease in motor vehicle theft, especially in countries where levels of theft were high in 1995. Again, technical security improvements by car manufacturers are the reason for this.

We compiled an inventory of risk factors for crime as proposed in literature, both at the individual and social level. The more a country is burdened with risk factors, the more effective policy is needed to defuse them and prevent crime. Only the share of non-Western immigrants seems to make a difference. Many other risk factors come together in this section of the population; for example, young males, unemployment, lower incomes and city-dwellers are overrepresented among immigrants. Yet these factors cannot explain the significant association with crime rates at the country level. We must keep in mind that the well-off countries of Oceania, Northern America, Northern and Western Europe, in particular, attract and receive large amounts of immigrants, and these are the same countries which are likely to have relatively high crime rates for institutional and cultural reasons. This may well have inflated the correlation.

Does it make a positive difference if a country allocates high resources to its safety policy, both in terms of expenditure (share of GDP in %) and number of police officers (per capita)? Again, only weak associations were found, with only the number of police officers being significant. The number of police officers may have a repressive (arresting offenders) as well as a preventive effect, depending on how many police officers actually patrol the streets. Having sufficient uniforms on the street may both scare off potential offenders and reassure the public. The literature confirms the preventive value of police *visibility*.

With police capacity being both a public investment and an intervention, the step towards policy outputs is easily made. We distinguish between three different outputs of law enforcement, at three successive stages of the judicial chain: the probability of being caught, the probability of being punished and the probability of being imprisoned. All three are assumed to prevent the perpetrator from reoffending (specific prevention) and to deter the general public from ever offending (general prevention). Imprisonment has the added effect of temporary incapacitation of the offender. Only the national probabilities of being caught and being



imprisoned show a significant relationship (when combined) with national crime rates. Together, they explain about one third of country differences in levels of serious crime. The effects of expenditure and police personnel (inputs) disappear when combined with these output measures, suggesting that these input measures leave their mark via the law enforcing interventions that they have generated.

Impact evaluations are positive about the deterrent effect of the probability – especially where this is visible – of arrest, but are generally sceptical about the value of imprisonment itself for desistance. It is more likely that the temporary incapacitating function of imprisonment suppresses crime and/or that the threat of imprisonment deters others. Also, imprisonment may create an opportunity to work with prisoners and prepare them for an honest life in the outside world. However, it is unlikely that the selected countries with both high imprisonment and low crime rates – typically in Central and Eastern Europe – will all opt for this costly, knowledge-based strategy, which makes it a shaky explanation for our findings. We would therefore caution once more against causal inferences; if the high crime rates of Northern European countries and the low rates of Central and Eastern Europe are in part an institutional and/or cultural artefact, then so may the apparent effects of arrests and imprisonment be.

An additional indication that our findings may be a partial reflection of the safety paradox was found when exploring the relationship between trust in the police and the judicial system and crime rates. Although no significant association was found, more trust was generally reported in countries with higher crime rates. As higher crime levels do not earn authorities bonus points in terms of trust, it is more likely that trust generates higher crime levels, as a result of people's willingness to report crime. This would explain the high recorded crime levels in many Northern and Western European countries in particular, which are generally wealthy and have the least social inequality, extensive social security systems and preventive social policies, to name but a few advantages for effective safety policy. All in all, our findings suggest that judicial institutions which enjoy high levels of trust are likely to trigger reporting and recording of crime, boosting recorded crime rates as a necessary evil for effective safety policy. Meanwhile, noticeably raising the probabilities of arrest and imprisonment may help to suppress crime, most likely through general deterrence (for example in response to police visibility) and incapacitation.

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# Housing

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5

## *Shelter matters*

Housing matters because it provides shelter which can be associated with feelings of security and a stable (family) life. This impacts on citizens' health and participation in the labour market and in society. Historically, governments in Western countries have integrated housing policies in their welfare states. This chapter focuses on how well citizens are being 'served' in the field of housing in the European Union (EU) Member States. The concept of service, however, may differ from that offered in other policy domains. There are several reasons for these potential differences. First, the longevity of housing stock means that the present services of the housing system to the citizen are likely to be strongly influenced by the past performance of the housing system. Pushing this notion to the extreme, it could even be argued that present housing outcomes will be almost completely determined by the past. Similar historic effects may exist in other domains, such as education (average skill level of the population) and public administration (organisational structure). Second, housing has been called the 'wobbly pillar' of the welfare state (Torgerson 1987). This is mainly because, in contrast to most other areas of public policy, by far the largest share of housing production and consumption takes place through the market and market contracts (see the 2012 edition of *Countries compared on public performance* in Haffner et al., 2012a; Bengtsson, 2001).

In addition to the market, the family helps in providing housing. The Southern European countries are characterised by the well-known strong role of the family in the provision of housing. An example is where the family provides funds when an owner-occupied dwelling is acquired (Juntto and Reijo, 2010). Inheritance of owner-occupied dwellings and other forms of help by the family in acquiring these dwellings also plays an important role in Eastern Europe (Doling and Elsinga, 2013).

## *Housing policy operates as state corrective to the market...*

Government (most likely across various levels from local to central) also influences the outcomes on the housing market. Bengtsson (2001) argues that housing policies are best understood as state correctives to the market. These correctives come in different types (Barr, 1998; Haffner et al., 2012a; Kemp, 1997, 2007). Supply side subsidies make the dwelling itself cheaper, while demand side subsidies paid to households help to pay housing costs. In the latter case, they sometimes form part of the social security system. The subsidies may be paid directly to the housing supplier or consumer (tenant or owner-occupier), either in cash, as in the case of housing allowances, or indirectly via the tax system, as in the case of the

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favourable tax treatment of owner-occupiers, or where saving for the purchase of a dwelling is subsidised. A third type of subsidisation is more implicit if it follows from the regulation of rents or house prices, or from the reserving of certain dwellings for lower-income households only.

Not all government interventions that impact on the housing market are the result of (explicit) housing policy instruments. The tax or social security system may for example have side-effects on housing. Last but not least, some instruments that are not rooted in housing policy, e.g. planning regulations, may impact on the housing market; for example, supply inelasticity caused by planning restrictions will lead to higher house prices and rents.

It is impossible to separate out all these types of influences on the housing market in European countries within the framework of this study for different types of households. We will therefore show the outcomes for all households, as well as for lower-income households. We assume that intended government intervention is likely to be focused on lower-income households, and we judge housing problems to be more serious for lower-income households, because their resources to solve problems are limited.

*... resulting in a tenure pattern*

Current tenure patterns are mainly the result of the housing system in the past, stemming from interactions between market, family and government. In that sense, they are a delayed effect in the public sector part of the heuristic model used in this study. On the other hand, societal factors in the past also undoubtedly had an influence on the housing system. The need for housing construction (demography, social circumstances) and the budgetary options and choices (economy, state of public finance) shaped the housing stock and its tenure pattern. For example, Haffner et al. (2012a) show that affordability based on an expenditure-to-income ratio tends on average to be more of a problem among tenants than among owner-occupiers. Outcome tenure differences have also been found in problems of overcrowding and housing quality. Tenure patterns are discussed more fully in Section 5.1.

*(Composite) indicators for inputs, output and outcomes*

In line with the heuristic model described in Chapter 1, we use separate indicators for inputs, outputs and outcomes, which are specified in Table 5.1. Despite its limited role, the public sector does invest in and subsidise housing in various ways. For *inputs*, we refer to the best available (but indicative) data on public expenditure. For *outputs*, we use characteristics of dwellings relating to quality, space and affordability (in relation to income). For example, the presence of a toilet or a bath is considered as a housing output related to quality. It is not possible to show an output measure such as public or social housing, because no comparable data exist on the number of publicly financed or subsidised dwellings, or on the

extent to which these dwellings are rented out below their market rent level. *Outcome* is measured as a more specific combination of outputs to reflect the goals of housing policy. We select the outputs that are (implicitly) considered relevant by households, and the share of households without problems on all these selected outputs is used as an outcome measure.

Table 5.1 Housing outcome, input and output defined

Level	Indicators	Source
Outcome	Share of households with no housing problems, based on variables that matter for 'overall satisfaction with the dwelling'. The variables are clustered in three main outcomes: <ul style="list-style-type: none"> <li>• good quality of dwellings</li> <li>• sufficient availability of dwellings (sufficient space)</li> <li>• good affordability of housing</li> </ul>	EU-SILC
Input	Expenditure data on infrastructure investments and housing allowances	COFOG
Output	Measure of all available variables on what is delivered: <ul style="list-style-type: none"> <li>• on quality (e.g. share of homes that are too dark or have inadequate electrical installations);</li> <li>• on sufficient space in dwellings (share of homes that are overcrowded and have a shortage of space);</li> <li>• on affordability (share of homes where households are in mortgage or rent arrears or are at risk of affordability problems)</li> </ul>	EU-SILC

#### *What is the goal of this chapter?*

The general goal of this study, to compare countries on public performance, is not always easy to achieve. This is particularly true for housing: as mentioned earlier, the state often only functions as a corrective to the market, and housing outcomes should therefore not be interpreted as direct effects of housing policy. Nonetheless, it is worthwhile, and this will be our goal in this chapter, to investigate housing outcomes and try to relate them to the characteristics of the different countries. We will also relate outcomes to the results of past policy: the tenure structure. Furthermore, we will try to unravel the results of the (complex) composite housing indicator into the scores on the partial indicators for quality, space and affordability.

#### *Structure of the chapter*

As indicated, performance measurement is broken down into a number of concepts for which the results are presented in the remainder of the chapter. Differences in tenure patterns are discussed in Section 5.1. Section 5.2 presents the outcomes of the housing system for 2007 and 2012 for the housing policy domain. The measurement of these outcomes is based on what can be regarded as basic goals of housing policy, but may not necessarily be on the list of all national governments. The three cornerstones used here are good quality of dwellings, sufficient availability (space) of



dwellings and good affordability of dwellings. Section 5.3 focuses on the inputs of housing policy in relation to the outcomes of the housing system. Section 5.4 presents the output indicators for the three cornerstones separately. Before conclusions and reflections are presented, Sections 5.5 and 5.6 respectively seek to explain differences in outcomes based on income and inputs, and to relate them to citizens' perceptions of the quality of the housing sector.

## 5.1 Tenure patterns

Figure 5.1 reflects the diversity of the tenure structure. The information on the housing situation of households stems from the database EU-Statistics on Income and Living Conditions (EU-SILC). Germany and Switzerland are the only countries where the rental sector dominates the housing market in 2012, with a share of more than 50% of stock; in the other countries, the owner-occupied sector is the largest. The Western and Northern European countries generally have below-average home-ownership rates. These differences can be ascribed to various developments.

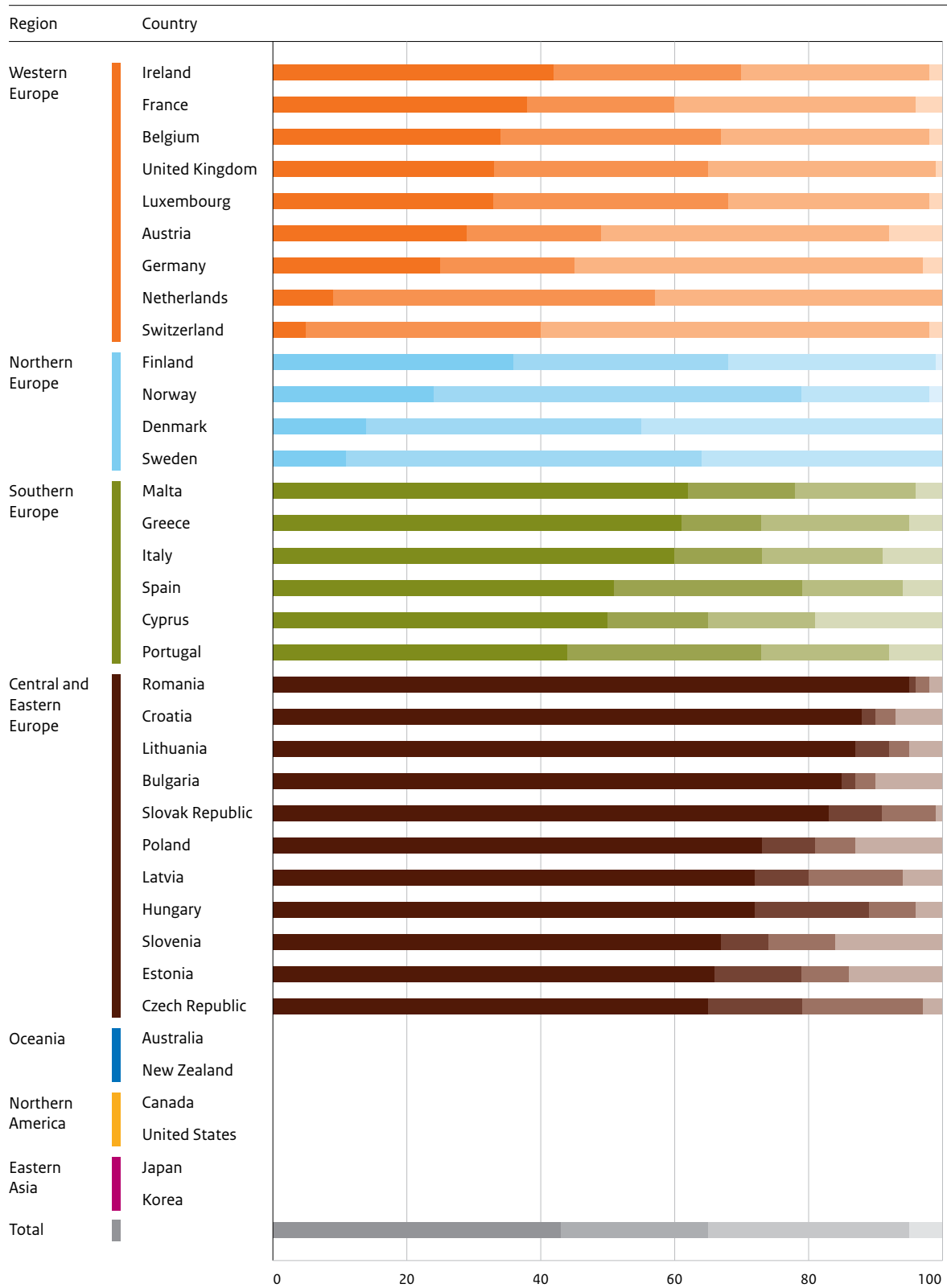
Generalising, the lower rates of home ownership in Western and Northern Europe have been caused by housing policy, which has enabled the rental sector to operate as an acceptable alternative to home ownership. At the same time the rates of home ownership have been increasing steadily, most prominently in the second half of the twentieth century (Scanlon and Whitehead, 2004). One of the better-known policy measures that stimulated home ownership was the right-to-buy scheme, in Ireland and the UK, which allowed social tenants to buy their rental dwelling (Haffner et al., 2009). In these schemes, discounts were introduced at a certain point in time (in Ireland from 1936 on and in UK in 1980) so that tenants could afford to buy. In the UK, the scheme was introduced to reflect the changing norms on individualisation and enabling government (Van der Heijden et al., 2002). Both countries now have relatively high rates of home ownership. As stated above, Germany, by contrast, (still) has a large rental sector; apparently, German households did not perceive the need to become homeowners. Behring and Helbrecht (2002) conclude that the system of social welfare has adequately covered the risks for households in Germany. The fact that taxation (the depreciation deduction in income tax) made renting relatively more affordable than home ownership will also have contributed to the size of the rental sector (Braun and Pfeiffer, 2004).

Generally, Central and Eastern European countries have the highest rates of (outright) home ownership, mostly as a result of the 'privatisation' of housing stock after the fall of the Berlin Wall. Increases in home ownership of more than 40 and even up to over 60 percentage points within 20 years occurred (Dol and Haffner, 2010; see Appendix Tables A5.1 and A5.2, [www.scp.nl](http://www.scp.nl)). Lowe (2003: xvii) explains that the countries where 'rapid privatization' occurred (Hungary, Slovenia, Croatia and Romania), usually built upon high levels of traditional rural and self-built homeownership.



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Figure 5.1 Tenure structure, households, 2012 (in percentages)



Note: Other forms of tenure are not shown for Norway 2012 (2%) and Sweden 2012 (1%). Within the rental sector, social and private renting cannot be distinguished in the EU-SILC database. The total is not weighted. See Appendix Table A5.3 for data, also for the EU-SILC'07-data. Source: EU-SILC'12, SCP/OTB treatment.

outright owner owner paying mortgage rent provided free





For Poland, cooperative homeowners have been included among 'homeowners' since 2010, also causing a high rate of home ownership in the statistics (Eurostat 2010).

The rates of home ownership in the Southern European countries are mostly somewhat above the mean. In this region, home ownership is generally achieved with the help of the family (Allen et al., 2004). Because of this family help, outright home ownership is generally higher here than in Western and Northern European countries, but lower than in the Central and Eastern European countries.

Housing provided free of charge may have different forms. Fessler et al. (2014) report that in Austria this group consists of parents who have passed on the home to the next generation but still live in it, but also of young adults who live in family-owned apartments. Another possibility is housing provided by employers. Generally, this type of housing is more likely to be provided in the Southern and Central and Eastern European countries, as can be observed in Figure 5.1. This category is excluded from the analyses from the next section on, as housing policy usually does not focus on housing provided rent-free.

*Is the tenure structure different for lower-income households?*

Figure 5.2 presents the tenure structure twice: for all households and for households with the 30%<sup>3</sup> lowest incomes.<sup>4</sup> The tenure structure does differ, but not in all countries.<sup>5</sup> As expected, households with lower incomes are overrepresented in the rental sector and in accommodation provided rent-free. They live relatively less often in the owner-occupied sector paying a mortgage. For outright owners the balance could tip either way. As they have no ongoing mortgage outlays, this type of home ownership does allow for relatively low incomes. This effect has been called property asset-based welfare: the previous accumulation of housing equity frees a (mostly older) household from having to pay rent as cash outflows which can be used for other purposes (Doling and Elsinga, 2013). On the other hand, it must be remembered that the acquisition and ownership of a dwelling is always an investment that comes with risks, for example in the form of capital gains or losses.

3

The 30% level is chosen as proxy for the group of lower-income households in a country.

4

In EU-SILC, 'income' usually refers to the previous calendar or tax year (in our research mostly 2006 and 2011, respectively). Other periods were used for the UK (current year) and Ireland (last twelve months).

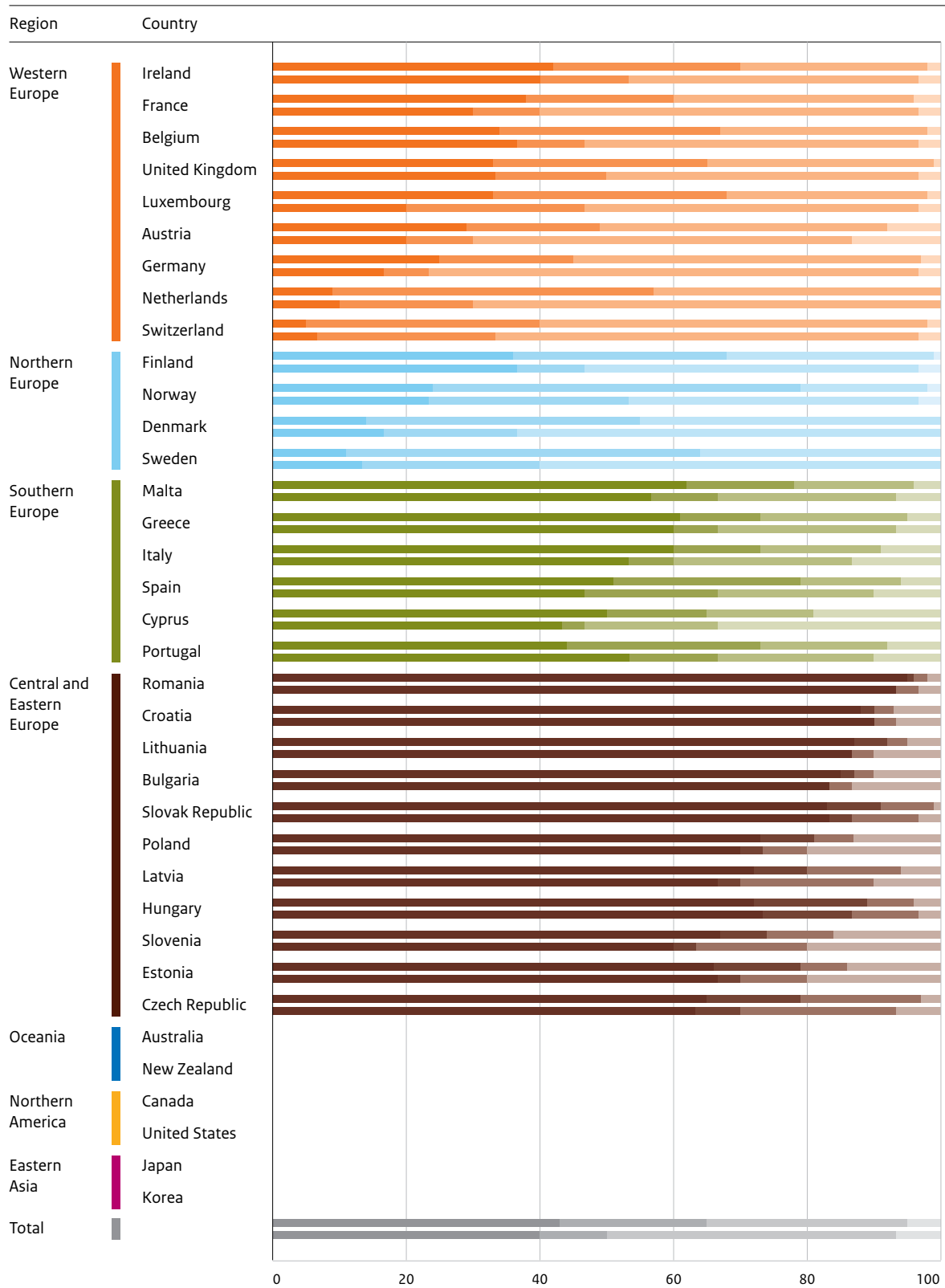
5

An in-depth analysis of different results for different countries goes beyond the scope of this study.



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Figure 5.2 Tenure structure<sup>a</sup> by all households and 30% of households with lowest income, respectively, households, 2012 (in percentages)



<sup>a</sup> The tenure structure is shown for all households (upper bars) and for the 30% households with the lowest incomes (lower bars). Source: EU-SILC<sup>12</sup>, SCP/STB treatment. The category 'other tenure' is excluded. Within the rental sector, social and private renting cannot be distinguished in the EU-SILC database. The total is not weighted. See Appendix Table A5.3 and A5.4 for data.



## 5.2 Outcomes

*Data source: EU-SILC*

Comparative information on the housing situation of households in European countries is available in the EU-SILC, in particular information on households (composition, income and tenure status) and their dwellings. Questions concerning housing situation are included in all available EU-SILC years (2004-2012). The EU-SILC database provides data for the 28 EU Member States plus Norway and Switzerland. The starting point mostly is the 2012 edition (EU-SILC'12); where relevant these results are compared to those from the EU-SILC'07, which is a different cross-section. In these two years, the EU-SILC contains a number of additional items, e.g. citizen satisfaction and broad information on dwellings. This makes it possible to use information at the household level on many quality aspects of the dwelling, its neighbourhood, its size and financial aspects. As Croatia, Greece, Malta and Switzerland were not present in the 2007 database, they could not be included in the analysis, leaving 26 countries. The countries included in the analysis are Austria, Belgium, France, Germany, Ireland, Luxembourg, the Netherlands, the United Kingdom (Western); Denmark, Finland, Norway, Sweden (Northern); Cyprus, Italy, Portugal, Spain (Southern); and Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia (Central and Eastern Europe). Of course, limitations of the EU-SILC also apply to this research.<sup>7</sup> We also had to make some slight alterations in the data.<sup>6</sup> It should be noted that in this section we report on the outcomes only, as some explanations for the differences based on the underlying variables can be found in Section 5.5.

### *Selection of variables*

In Figure 5.3 we present the variables as the share of households having problems, per item. The focus is on the actual housing situation, not plans (a wish to renovate or move) or barriers (waiting lists, costs of alternatives). Some questions reveal subjective information, such as the respondent's opinion/feeling about shortage of space in the dwelling. Information on overcrowding and financial aspects of the dwelling (cost) in relation to household income was constructed. The extent to which dwellings are overcrowded was calculated according to Eurostat's definitions (see Appendix). For affordability we created an own variable based on income-after-housing-costs (residual income); see Appendix. To select the variables that matter for households, we used the question on 'overall satisfaction with the dwelling'.<sup>8</sup> Only variables that appeared to be statistically relevant for housing satisfaction were included in the composite outcome indicator. The categories satisfied/very satisfied were used for a regression analysis on all separate indicators. Only variables significant at the 99% level were taken to be relevant and included in the construction of the outcome variable.<sup>9</sup> We do not use 'overall satisfaction with the dwelling' itself as a housing outcome indicator, because people may get used to

6

For some variables, imputations had to be made by Eurostat. International income data are generally difficult to harmonise, although a good deal of effort was invested in this. Some changes in the wording of questions may have led to differences in responses over time.

7

In the 2007 data, we imputed 'Dwelling comfortably cool during summer time' for unknown responses in Bulgaria and Romania, 'Dwelling comfortably warm during winter' for Ireland, 'Adequate plumbing/water installation' for four Central and Eastern European countries and Portugal. In the 2012 data, we imputed 'Adequate plumbing/water installation' for Norway, Latvia and Lithuania.

8

As this variable is available for the analyses, the methodology is adapted in comparison to the pilot study in Haffner et al. (2012a). The variable refers to the respondent's opinion/feeling about the degree of satisfaction with the dwelling in terms of meeting the household needs/opinion on the price, space, neighbourhood, distance to work, quality and other aspects (including the availability of a garage or parking space).

9

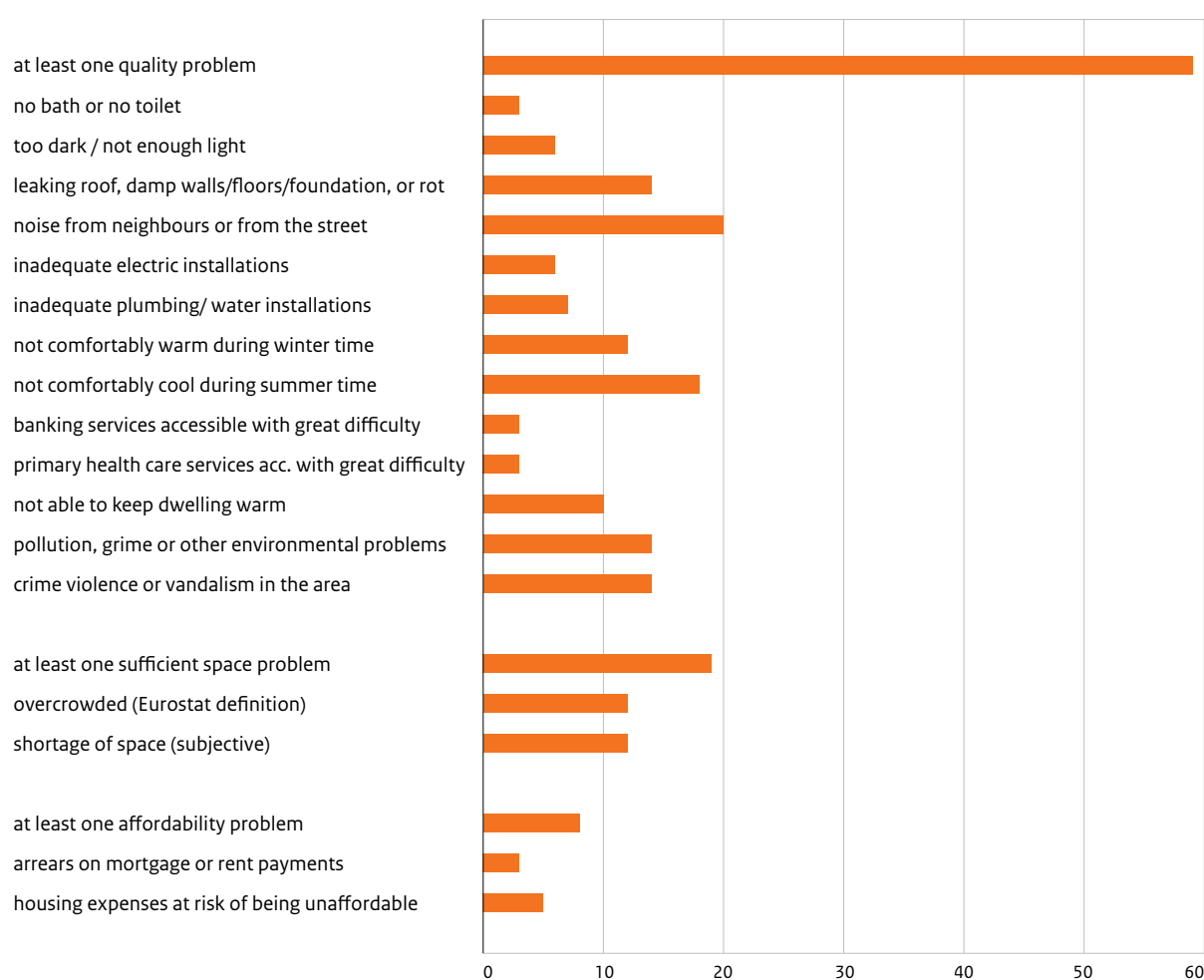
Using this selection mechanism, five variables were excluded: the absence of heating facilities, and difficult access to grocery services, postal services, public transport and compulsory schooling.



their dwelling and to the standards in their country, thus obscuring relevant differences between countries.

- 1 Figure 5.3 shows that 59% of households on average have at least one quality problem related to their dwelling in 2012. Most prominent are problems with noise (20%) and lack of comfort in summer (dwelling not comfortably cool; 18%). Leaking roof, damp or rot account for 14%.
- 2 Space problems seem less prevalent (19%), although part of this lower value may be explained by the fact that only two variables are available to construct the space indicator.
- 3 Affordability problems occur less frequently (8%) than space problems. This may seem surprising, but can be explained partly by the large share of outright owners.

Figure 5.3 Problem indicators that score on 'overall satisfaction with the dwelling', grouped by quality<sup>a</sup>, sufficient space and affordability problems, households, 2012 (in percentages)

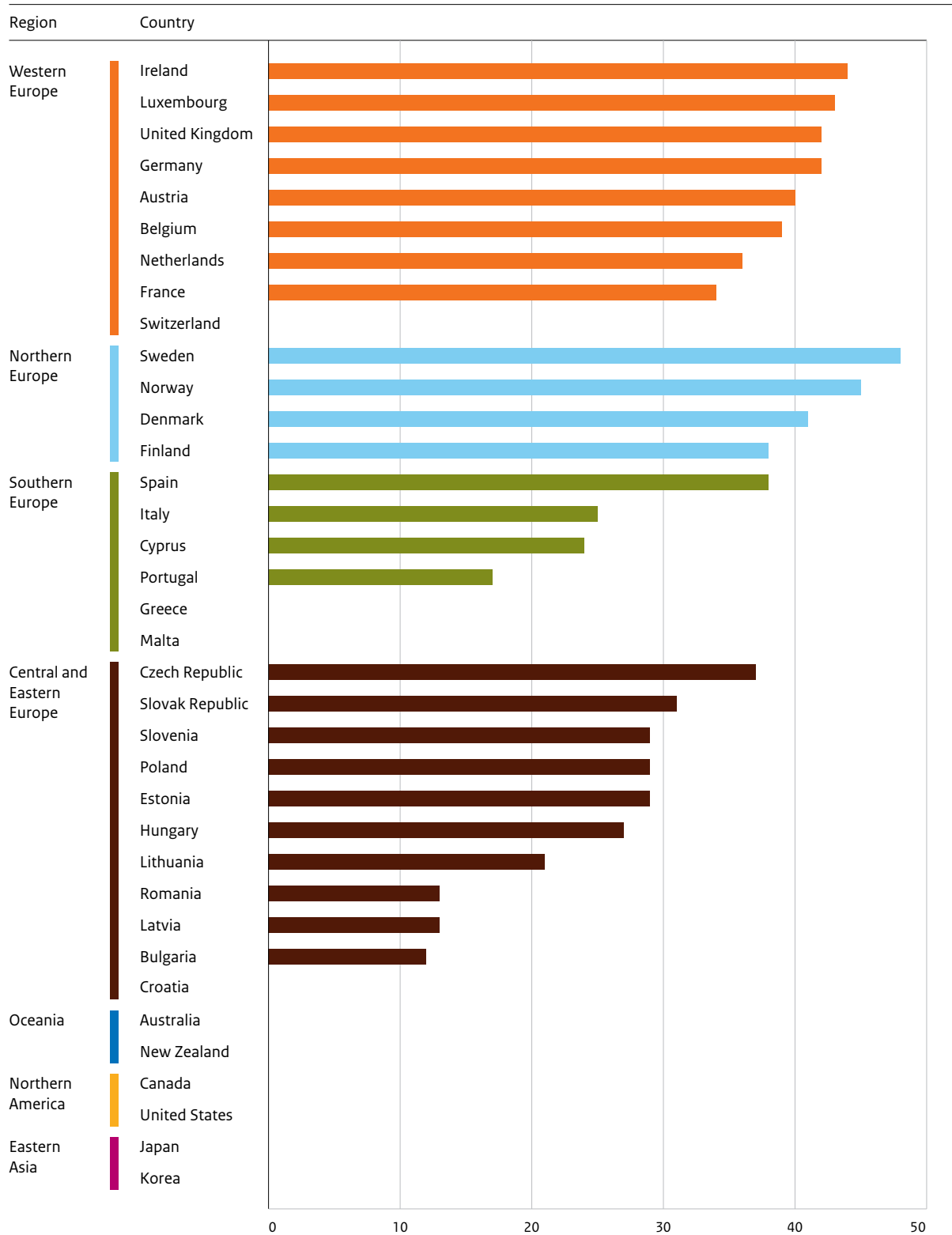


<sup>a</sup> Accessibility of services is in terms of physical and technical access, not in terms of quality, price and similar aspects. The technical form (phone-banking and pc-banking) is relevant for banking services, if it is actually used by the household. Source: EU-SILC<sup>12</sup>, SCP/OTB treatment for 26 countries surveyed in both 2007 and 2012. See Appendix Table A5.5 for the data.



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Figure 5.4 Composite outcome indicator by country (share of households without any housing problems), households, 2012 (in percentages)



Source: EU-SILC'12, SCP/OTB treatment for 26 countries surveyed in both 2007 and 2012. See Appendix Table A5.6 for the data.



### 5.2.1 Composite housing outcome indicator

We aggregated the variables to construct a composite outcome indicator, based on the absence of housing problems. A household is considered to have no housing problems if no problem is reported on all variables together. The indicator is computed at the household level and as such is not present in published statistics, where only overall scores on variables (e.g. 'too dark / not enough light') are available.

The variables are clustered around three main housing outcomes: quality of dwelling (e.g. no bath or toilet) and surroundings (e.g. noise from neighbours), sufficient space (overcrowding and shortage of space) and affordability (arrears and at-risk-of-unaffordability problem). In this way objective and subjective information is combined into a measure that gives an indication of whether the dwellings in a country meet the needs and financial capabilities of the population. All items are weighted equally. Of course, it is possible that some items are considered more important by most households than other items. Within the scope of this study, it was not feasible to assess and correct for possible differences in item weights. As indicated earlier, all outcomes must be considered as resulting from the present housing system, including present and past interventions by all housing actors.

- 1 In general, the shares of households without housing problems are largest in the Northern European countries, closely followed by the Western European countries. The Southern and Central and Eastern European countries have the smallest shares, with a good deal of variation between countries.
- 2 In 2012, the largest share of 'no housing problem' households was found in Sweden, as Figure 5.4 shows. Norway, Ireland, Luxembourg, Germany and the United Kingdom followed. Bulgaria, Latvia and Romania had the smallest shares, as was also the case in 2007 when Sweden and Norway were also the top two countries.
- 3 In 2012, the countries form a fairly continuous list when placed in ascending order. Distances of more than two percentage points appear only between Latvia (13%), Portugal (17%), Lithuania (21%) and Cyprus (24%), further on between Slovak Republic (31%) and France (34%), and between Norway (45%) and Sweden (48%).

In the remainder of this section, we use the normalised housing outcome indicator (composite housing outcome index). The average value and standard deviation of the 24 countries for which data are available for each policy field (chapter) in the publication are used as a reference for the index. Figure 5.5 shows the effect of this scaling.

#### *Outcome indicator versus overall satisfaction*

Figure 5.6 shows the relationship between the composite housing outcome indicator and the variable 'overall housing satisfaction'. It shows that the outcomes are relatively robust. More households are satisfied with their



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Figure 5.5 Composite outcome indicator by country (share of households without any housing problems), households, 2012 (index)

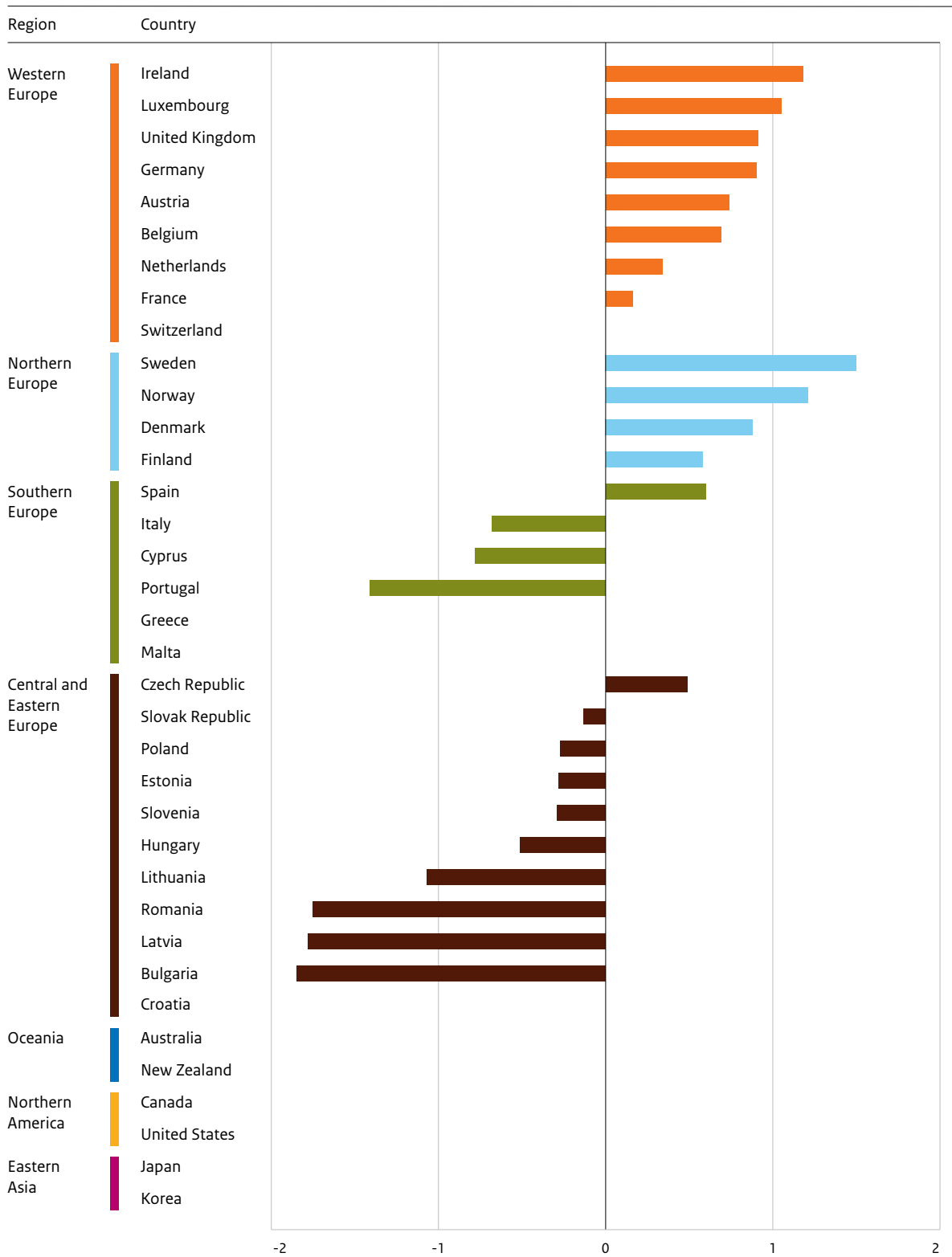
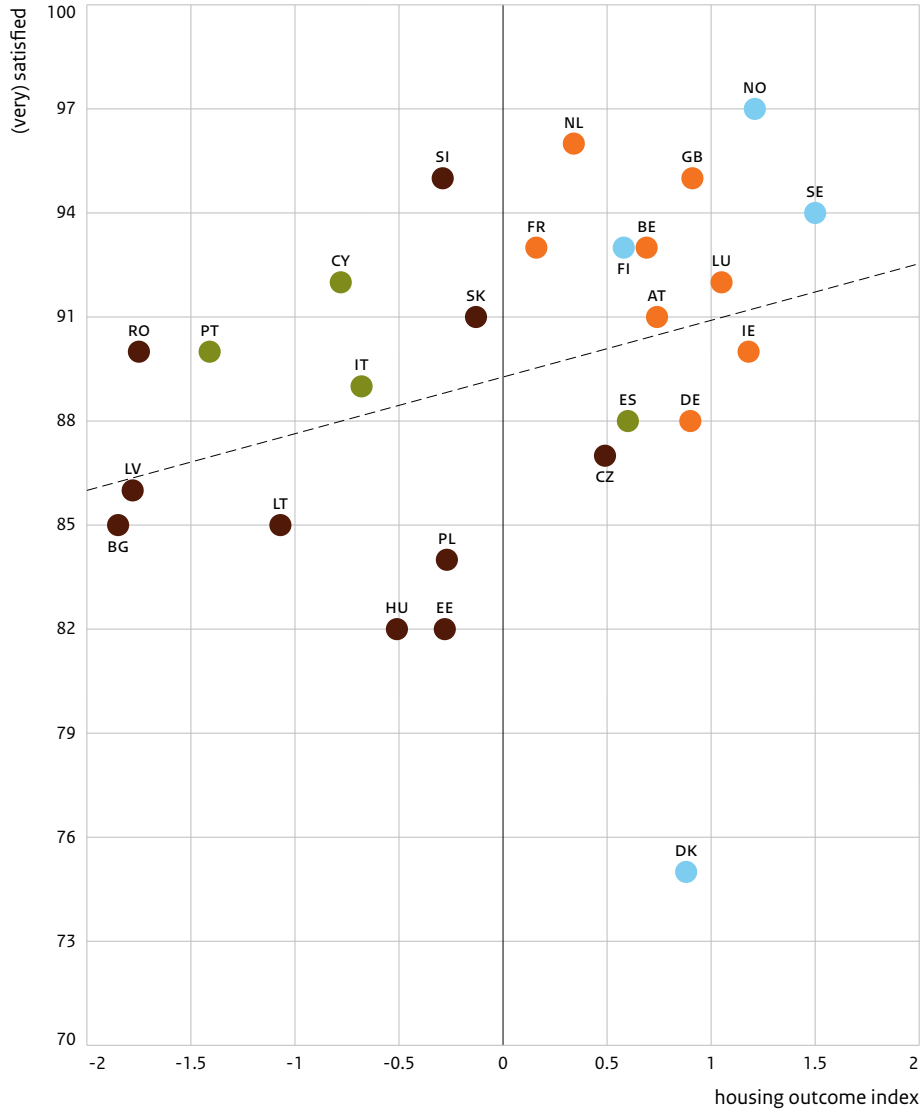


Figure 5.6 Overall satisfaction with the dwelling by composite outcome index, households, 2012 (in percentages and index)



R-squared=0.10 (without Denmark: 0.25)

Source: EU-SILC'12, SCP/OTB treatment for 26 countries surveyed in both 2007 and 2012. See Appendix Table A5.7 for data.

dwelling when the composite outcome index score is higher, but it clearly is not a one-on-one relationship. Overall judgements of households may differ from simply adding together all the variables. Households will also aim as far as possible to choose dwellings that suit their needs best (self-selection). These mechanisms may contribute to explaining why satisfaction reaches much higher levels (75-97%) than the composite indicator (12-48%).





*According to both measures, the shares of households with housing problems are lowest in two Northern European countries, followed by the Western European cluster and the two other Northern countries.<sup>10</sup> None of the countries in the other two clusters reaches the 'composite indicator /satisfied' level combinations of the Northern and Western European countries. Southern European countries combine somewhat above-average satisfaction levels with strongly varying indicator shares. Central and Eastern European countries show a wide range of indicator and satisfaction shares.*

### 5.2.2 Outcomes for lower-income households

Housing policy will be (mainly) focused on lower-income households (see above). To assess this possible impact of housing policy, it will therefore be helpful to take a closer look at lower-income households. Figure 5.7 gives an insight into the housing problems of the 30% households with the lowest incomes per country in 2012. The indices are presented relative to the levels for all households.

- 1 The outcome scores for the 30%-group are lower (by 8 to 14 percentage points) than for all households. This indicates that lower-income households encounter more housing problems. Zooming in on the 30%-group, Norway and Sweden remain first and second on the list, with the smallest share of households that encounter housing problems, and the position of the last five countries is also unchanged compared with the figures based on all households.
- 2 However, some countries change their relative position when the focus is on lower-income households. Finland shows the largest relative 'improvement' (from 10th to 6th position), and Belgium the largest 'deterioration' (from 9th to 12th position). Fourteen countries maintain their relative positions.
- 3 The Western and Northern European countries score relatively high; only the Netherlands and France produce worse outcomes than Spain and the Czech Republic, both for all households and for lower-income households. A number of quality problems (notably damp/rot, noise, comfort in summer and crime) cause these differences. For lower-income households, the Netherlands and France show similar outcomes to those of the Slovak Republic.
- 4 Of the lower-income households in the three countries with the lowest scores (Bulgaria, Latvia and Romania), 3% to 5% have no housing problems in 2012. In 2007, that figure ranged from 1% to 3%.

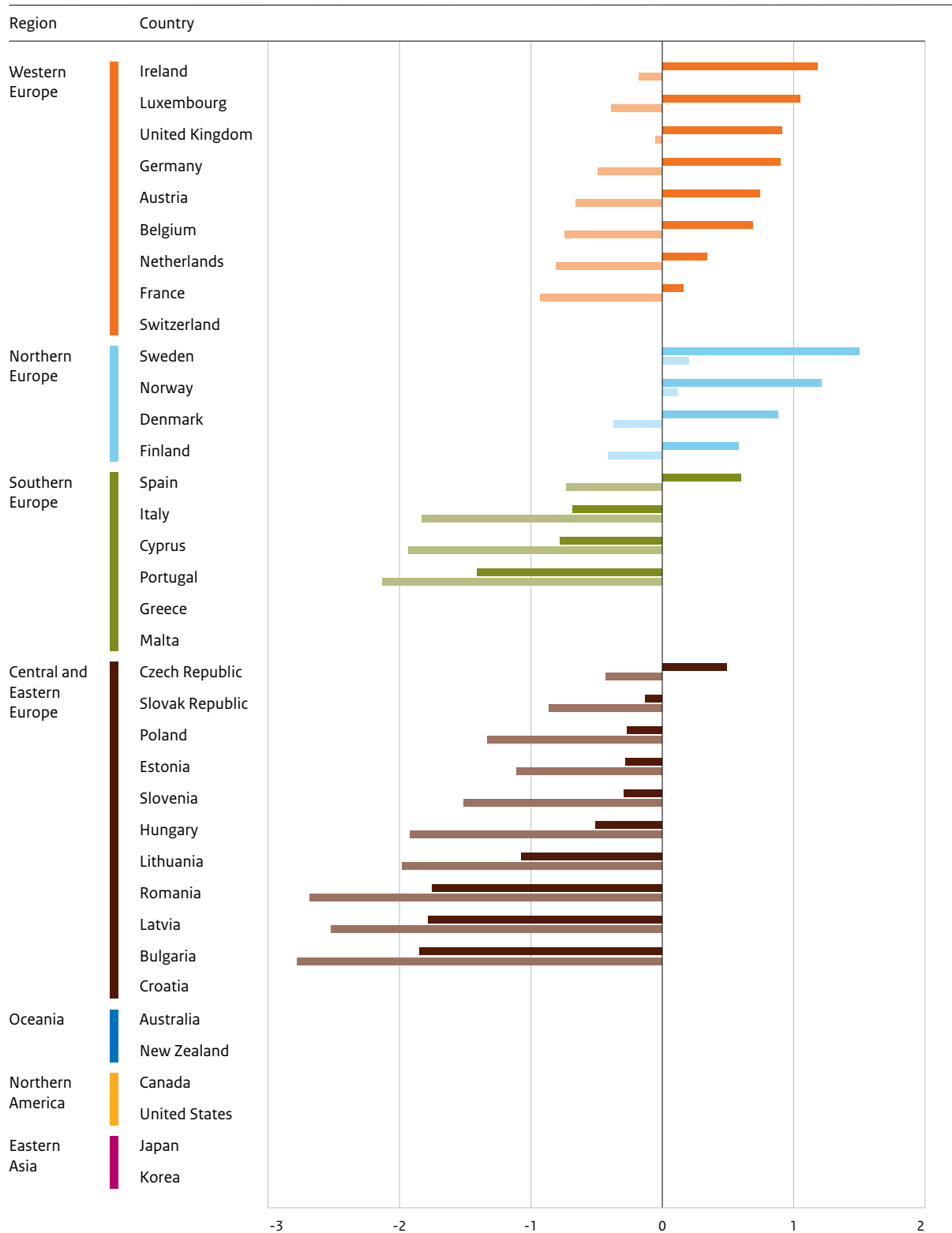
The Czech Republic attains the same score as Germany for lower-income households. This suggests a good public sector performance, partly achieved through a large share of tenants among lower-income households (largest among the Central and Eastern European countries; see Figure 5.2). But the main reason might be more historical, as its housing subsidies are reported to be ineffective and inefficient (Lux, 2009): the Czech Republic

<sup>10</sup> Denmark showed a remarkable drop in satisfaction between 2007 and 2012.



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Figure 5.7 Average score of all, and lower-income households, respectively, on composite outcome indicator, households, 2012 (index)



Source: EU-SILC'12, SCP/OTB treatment on 26 countries surveyed in both 2007 and 2012. See data in Appendix Table A5.8.

all households lower-income households



had a large rental sector and better housing quality before the transition period.

### 5.2.3 The three dimensions of the composite outcome indicator

Concluding that the composite outcome scores are fairly robust for the total population and the lower 30% incomes, we turn to the three dimensions of the indicator which can be observed and compared to the indicator in Figure 5.8: affordability, space and quality.

- 1 By geographical cluster, Northern and Western Europe score higher on the composite outcome indicator than Southern, and Central and Eastern Europe. This pattern is also found in all three indicator dimensions, as Figure 5.8 shows.
- 2 Northern Europe has better composite scores than Western Europe on average because of better quality indicators, and Central and Eastern Europe have lower composite scores than Southern Europe mainly because of the lower scores on the sufficient space (quantity) indicator.
- 3 The highest scores per country are mostly related to quality (Sweden, Norway and Ireland). Good sufficient space scores (Belgium, Ireland, Netherlands) are only partly related to a high overall score.
- 4 Luxembourg and Germany score highest on affordability, but take fourth and fifth position on the composite outcome indicator. The low scores of Bulgaria, Latvia and Romania are mainly related to quality.

### 5.2.4 Discussion of outcome measure

The composite outcome indicator can be designed differently (see e.g. Haffner et al., 2012a, 2012b; Palvarani and Pavolini, 2010). Alternatives mainly focus on the correlations between indicators (Appendix Table A5.6) and the definitions used for the variables that are included.<sup>11</sup> The weights to be given to the separate indicators is another item for discussion, especially whether one unfavourable variable should be a sufficient basis to categorise a household as having a housing problem. For instance, with affordability, having arrears without having a low income ‘after housing costs’ or vice versa might be considered too narrow a basis. The ranking of countries by composite outcome score, however, hardly changes when we only count households with more than one housing problem (see Appendix Figure A5.1).

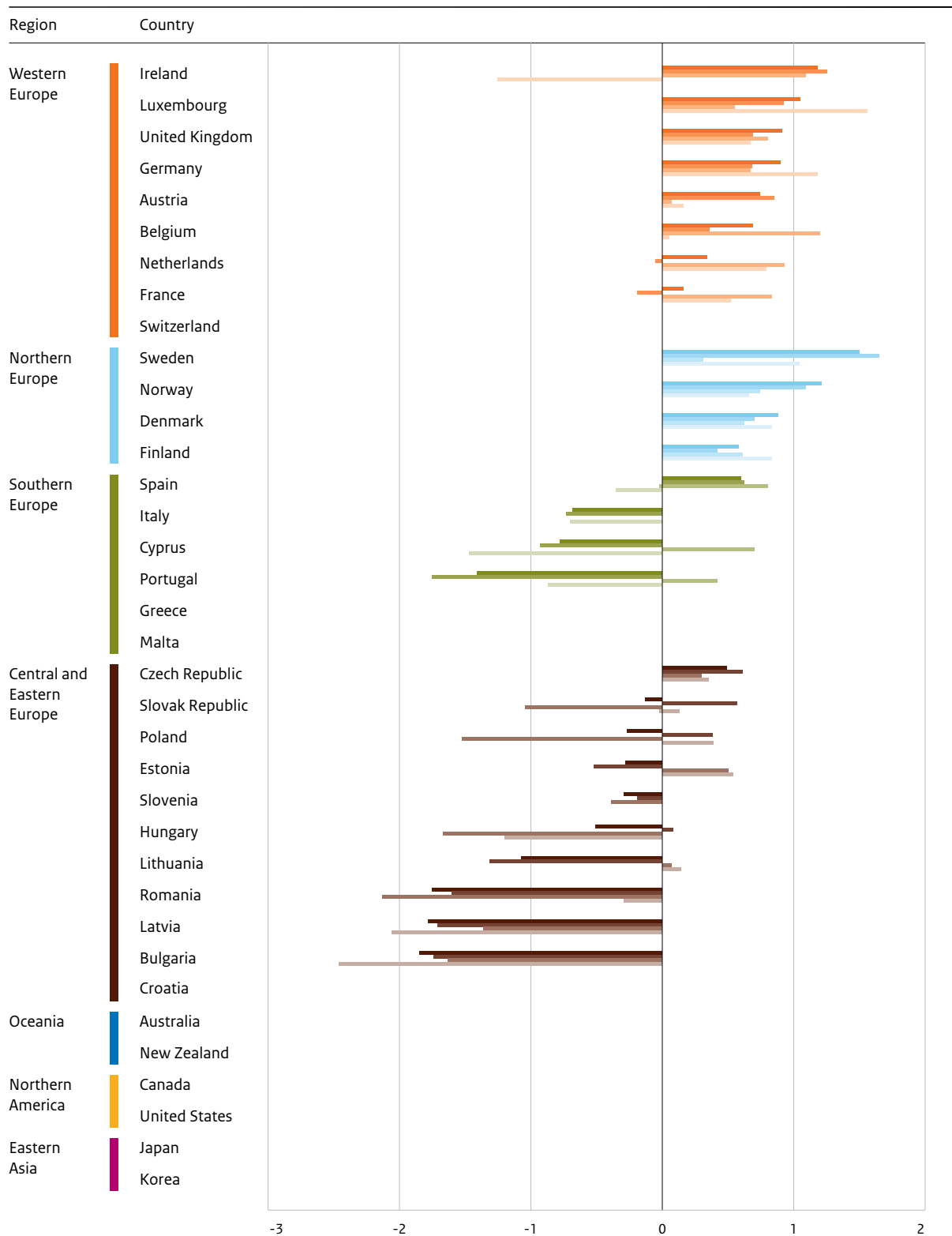
Affordability is measured partly on the basis of the (objective) income-housing cost combination. For comparability reasons, housing cost was based on the common information for 2007 and 2012. In 2007, information is available for mortgage interest payments, but not for principal repayments. If we were looking at 2012 only, the inclusion of principal repayments would clearly be preferred in our expenditure measure.

<sup>11</sup> Housing expenses (rent and mortgage interest payments) may be at risk of being unaffordable, given the relationship between income and cost. Several definitions of housing costs of home owners exist (see Appendix).



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Figure 5.8 Composite outcome indicator and its dimensions, households, 2012 (index)



Source: EU-SILC'12, SCP/OTB treatment for 26 countries surveyed in both 2007 and 2012. See for data in Appendix Table A5.9.

outcome index    quality index    sufficient space index    affordability index



A comparison of 2012 results with and without mortgage repayments shows little change in the ranking of countries, however (see Appendix Figure A5.2).

Furthermore, in some tenures in some countries, income 'before housing costs' includes some income effects of housing policy, such as housing allowance. There, housing costs do not include these income effects, thus obscuring the true housing cost effects.

### 5.2.5 Housing problems over time

Moving on from 2012, in this section we focus on changes in the housing outcome index over time, between 2007 and 2012 (Table 5.2). We use the 2012 average and standard deviation for the scaling of the index. We cannot follow individual households, but we can compare national outcome scores.

- 1 Most of the composite outcome indicator changes are positive, implying that the share of households without housing problems increased; only Norway and Austria show a decrease. The largest increases are found in Poland, Estonia and the Czech Republic.
- 2 In 2007 almost all Northern and Western European countries have higher scores than all other countries in the analysis (except for France). In 2012 this partly changes: Spain and the Czech Republic are at higher levels than the Netherlands and France.
- 3 Regional clusters have moved closer to each other in 2012 compared to 2007: Southern European and Central and Eastern European countries move up by eight points on average, Western European countries by four points; Northern European countries do not change on average.

The higher scores in 2012 than in 2007 in the Central and Eastern European countries – the countries with lower outcome scores – can possibly be explained by the perception that improvements are more necessary than in countries where the scores are already relatively high. These are mainly countries with lower average incomes, but some have experienced a rise in average income recently. In fact there is some correlation (0.39) between their income increase and the trend in outcomes.

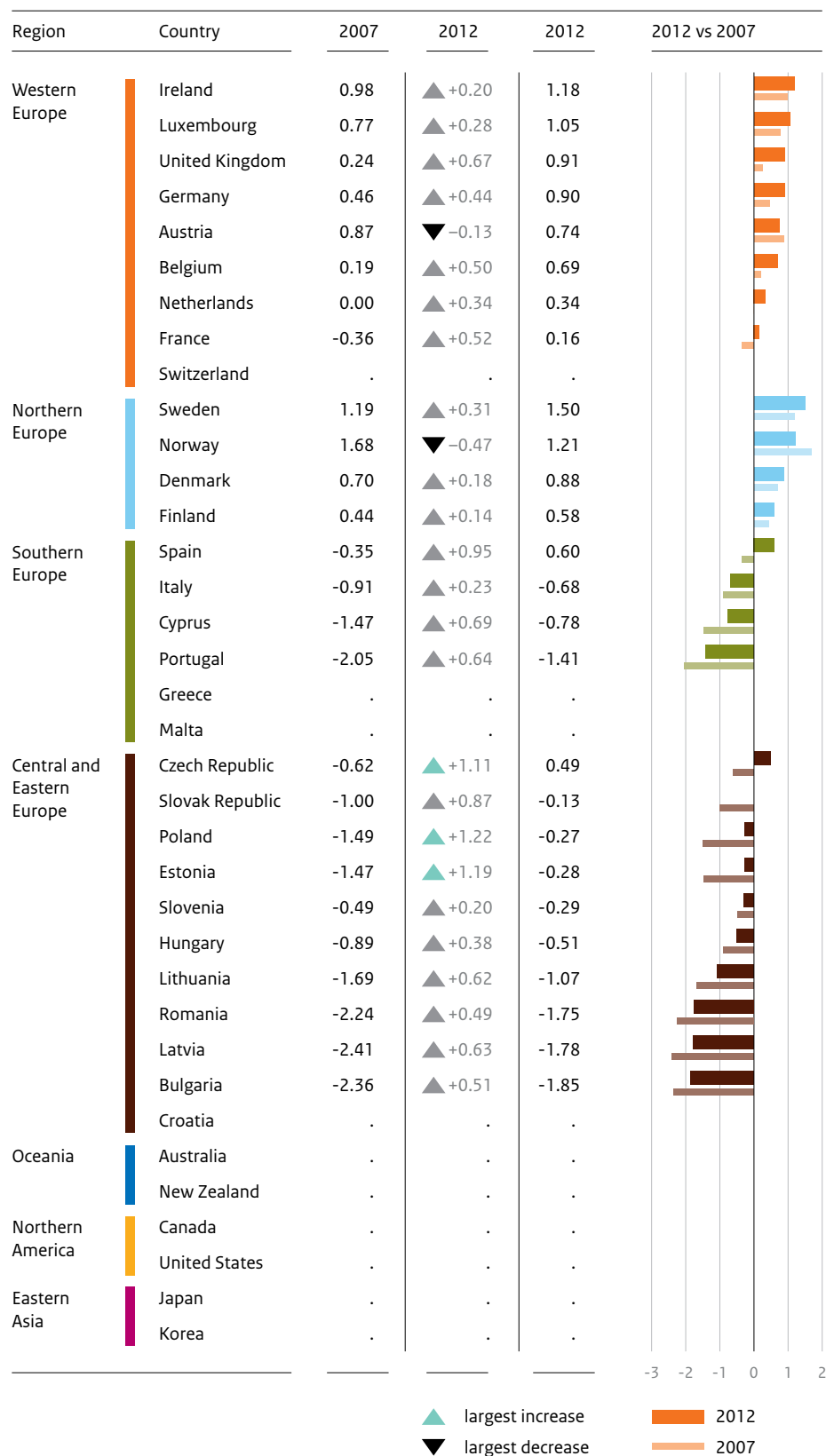
In times of economic crisis, it is remarkable that almost all countries experience an increase in the composite outcome indicator. The minimum composite indicator value of 6% in 2007 went up to 12% in 2012. The mean increase is five percentage points. Quality changes account for most of this change. Sufficient space improved by one percentage point, while affordability deteriorated by one percentage point, mainly due to changes in Southern Europe. The small changes in affordability may seem surprising during a period of economic crisis. We know for example that hundreds of thousands of families evicted in Spain underwent very serious financial and housing problems in the 2008-2012 period (Cano Fuentes et al., 2013).



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Table 5.2 Composite outcome indicator over time, households, 2007, 2012 and change 2007-2012 (index)

For reading instructions see page 49



However, much of the income information in our 2012 data refers to 2011, so not all effects of the economic crisis may be visible yet. For affordability problems to increase, incomes have to decrease and/or costs have to increase. Apparently, this did not occur in combinations that change the prevalence of affordability problems dramatically in the data. On average, household income increased for all geographic clusters. In Spain the increase in affordability problems was one or two percentage points of the whole population. Furthermore, some households may already have been classified as having an affordability problem in 2007.

Lower-income households (Appendix Figure A5.3 and Table A5.10) show the same pattern, but the changes are generally less favourable. Lower-income households in Northern and Western European countries experience a small decrease in the composite indicator on average. In the other regional clusters, the composite indicator increases at relatively the same rate as all households, but by only half as much in absolute terms.

## 5.3 Inputs

### 5.3.1 Government expenditure

This section focuses on inputs, even though no useful indicator for personnel can be presented; as a second-best solution, government expenditure is used. Expenditure is based on the only reliable and comparable source for government spending on housing, based on COFOG (Classification Of Functions Of Government) developed by the OECD and by the United Nations Statistics Division (United Nations Statistics Division, 2015). COFOG includes direct government expenditure on housing as part of social protection (means-tested support to households) and housing and community amenities (housing and community development, including R&D, and water supply and street lighting).

Even though COFOG is the best available measure of government expenditure in the housing market, it is cumbersome for various reasons. In a sense, it is at one and the same time 'too broad' (including community amenities) and 'too narrow' (excluding indirect expenditure such as tax subsidies). As explained at the start of this chapter, only when all relevant effects are added together can we compare government interventions across countries. Thus whether the results of the housing system stem from spending on community amenities or on housing (an incomplete measurement of government involvement in housing), market influences or effects from the past remain a topic for further study. We use the COFOG data for their indicative value.

As housing outcomes are probably also influenced by government expenditure from the past – new construction is slow and dwellings have a long lifetime – the aim would be to take into account the average expenditure over as long a period as possible. See the Appendix for our considerations



and the resulting data (Table A5.11). It appears that with the exception of Denmark, the United Kingdom and Greece, government expenditure on housing and community amenities exceeded the expenditure on social protection in the 2007-2011 period. This might indicate that many governments have a preference for object subsidisation in the broadest sense (including investment in amenities) rather than housing-related income support for households.

Figure 5.9 shows that the five-year averages of total government expenditures on housing range from 0.5% to 3.0% of GDP per year (2007-2011). Low and high scores are not limited to one or two geographical clusters; clusters are mixed. All clusters are present in the 0.5-0.8% range, while France and Cyprus head the list with average annual expenditure close to 3.0% of GDP.

### 5.3.2 Expenditure does not seem to be related to outcomes

As mentioned, the measurement of government expenditure has its problems, and we have already argued that housing is primarily provided through the market. There is thus a large proportion of housing represented in the outcome score that is not necessarily influenced by budgetary involvement by the government. France and Cyprus have the highest (relative) expenditure, but they only rank 14<sup>th</sup> and 21<sup>th</sup> on the composite outcome indicator list. Countries with low relative expenditure are found in all four geographical clusters, at quite different outcome levels. One possible explanation is based on the earlier argument that current outcome scores are related to government expenditure from the past. It is also possible that unmeasured indirect subsidies or differences in market efficiency between countries obscure the effect of expenditure.

*Abstracting from all measurement problems in relation to government expenditure on housing, the main conclusion of this section is that direct government expenditure cannot be directly related to the success of keeping household housing costs at affordable levels, high quality of all dwellings, and low overcrowding (as operationalised for this study).*

## 5.4 Outputs

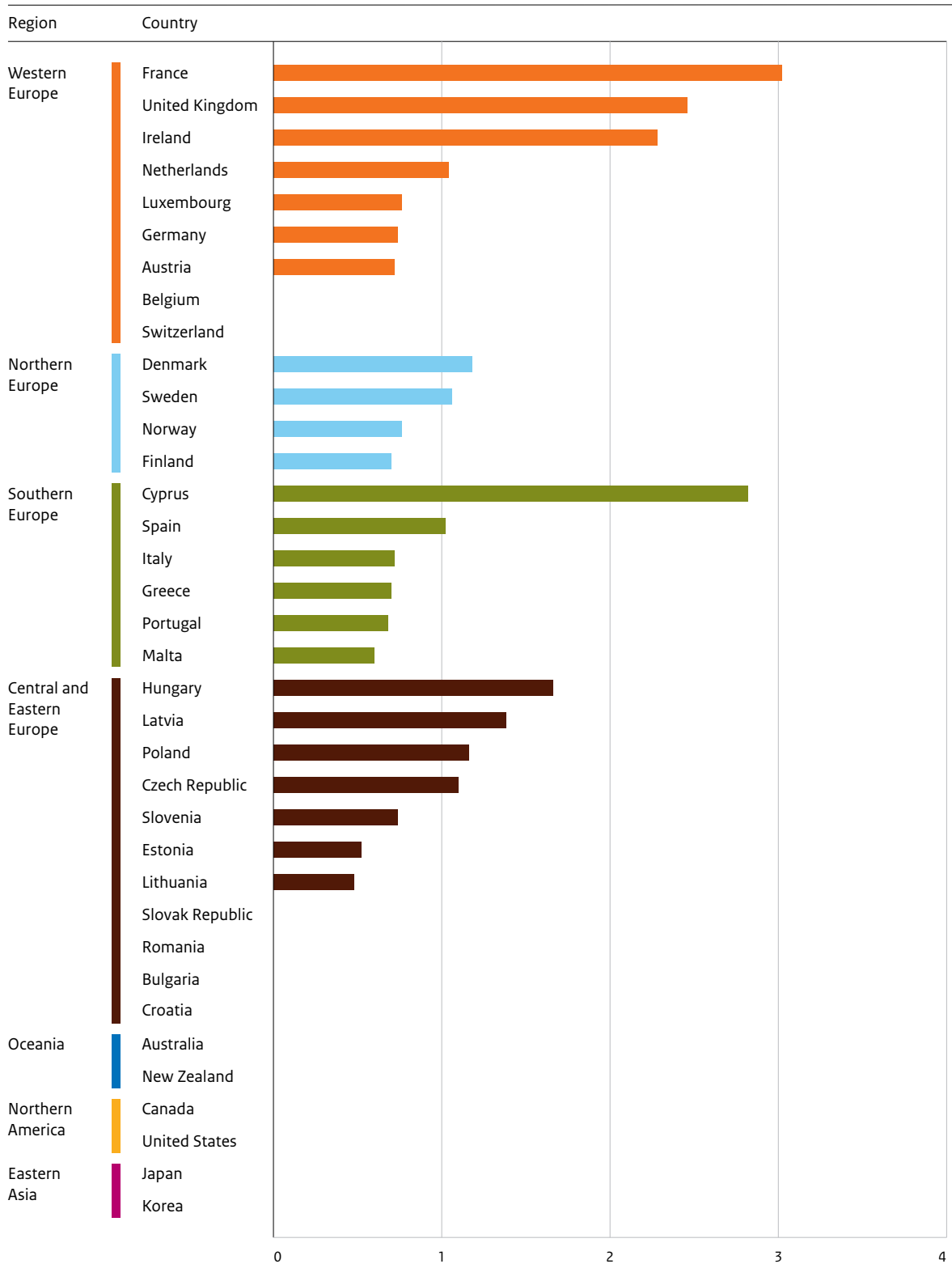
The composite outcome indicator is constructed on the basis of three dimensions (quality, sufficient space and affordability), which in turn are based on single variables such as 'presence of bath or toilet'. These individual indicators can be seen as output indicators: they are the result of input and throughput. In the composite outcome indicator (Section 5.2), some outputs are not included because they do not score on overall satisfaction with the dwelling. The outcome indicator is focused on indicators that are (implicitly) valued by households. In this section, all individual indicators are included.





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Figure 5.9 General government expenditure<sup>a</sup> (average per year) on housing according to COFOG, 2007-2011 (% of gdp)

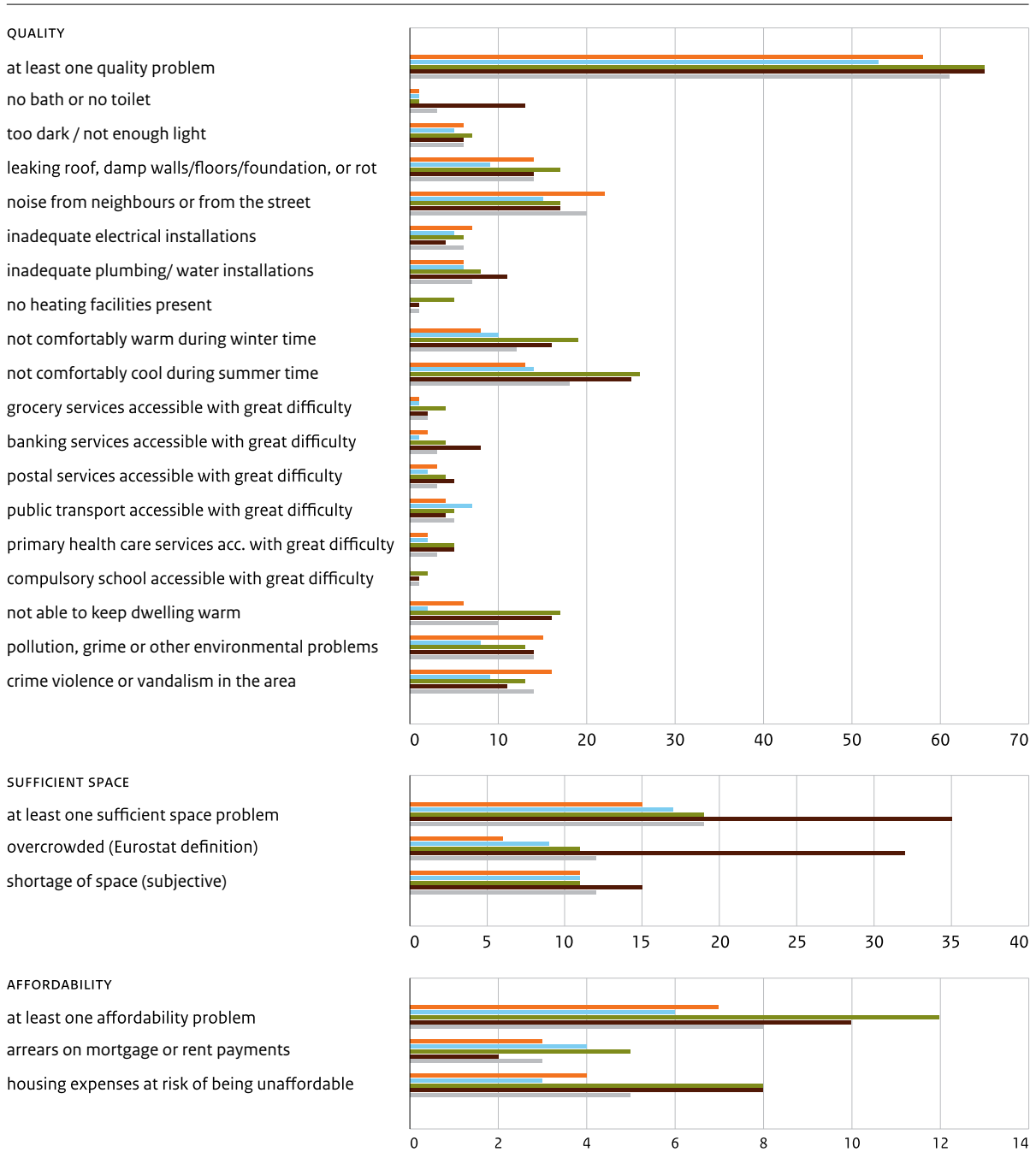


<sup>a</sup> Expenditure includes means-tested support to households plus administration costs of support systems, and government spending on housing and community development (including R&D), water supply and street lighting. Source: Eurostat (COFOG, 2007-2011). For data see Appendix Table A5.11.



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Figure 5.10 Output indicators by geographical cluster (households with problems), households, 2012 (in percentages)



Note: Missing bars denote 0% (rounded). Please note the different scalings of the different parts of the figure. Source: EU-SILC'12, SCP/OTB treatment for 26 countries surveyed in both 2007 and 2012. See Appendix Table A5.5 for the data.

Western Europe Northern Europe Southern Europe Central and Eastern Europe All



Of course, the caveats mentioned above still hold: the influence of housing policy may be considered modest, and the output indicators should therefore certainly not be seen as ‘government output’; there is also a strong influence from the housing market, the family and the past.

We present the scores on the indicators by dimension and by four European regional clusters (see Figure 5.10). This kind of information at item level is called output indicators here. We present the outputs as problem measures here (share of households having a problem, per item), because most of them are closer to 0% than to 100%.

- 1 Figure 5.10 shows that the share of households with at least one housing problem is largest in Central and Eastern Europe. Sufficient space problems are the main cause of the high score. The lack of bath or toilet and problems keeping the dwelling warm or cool are also often present.

The extent to which dwellings are overcrowded was calculated according to Eurostat’s definitions. This indicator and its subjective variant (shortage of space) each account for twelve percentage points. One might expect a correlation between these two indicators a priori, but only a third of ‘objectively overcrowded’ households self-report a shortage of space, and vice versa.

- 2 35% of households in Central and Eastern Europe are ascribed space problems. This is much higher than in the other geographical clusters (15%-19%). The objective indicator is almost completely responsible for this European divide, suggesting that people’s subjective expectations are steered by the actual situation (Sunega 2014).
- 3 Southern Europe scores high on quality problems (keeping the dwelling warm or cool) and affordability (all indicators), but fairly low on space problems.
- 4 Western Europe combines an average score on quality problems (with relatively high scores on noise, pollution and crime problems) with few sufficient space and affordability problems. Northern Europe scores best on quality and affordability and nearly the best on sufficient space.

## 5.5 Explaining differences in outcomes

As mentioned in the introduction, housing outcomes are mainly determined by the market (Bengtsson, 2001). Houses are bought and sold on the property market and rental housing is mostly allocated by means of market contracts between landlords and tenants (Dewilde 2015). With higher levels of economic development, the financial capacity and demand for more spacious and better quality dwellings increase. This may lead to faster replacement of old dwellings with new stock.<sup>12</sup>



The influence of the state is 'corrective', in order to make affordable housing of a certain standard accessible (Bengtsson, 2001). This correction is difficult to describe, as the means differ widely (explicit and implicit subsidies of different types, forms of regulation), expenditure cannot be measured precisely (Dewilde, 2015) and effects are hard to assess. Furthermore, the past has a large influence because of the longevity of dwellings and their tenure, which is directly related to housing costs. This means that housing policy influences housing outcomes, but not as much as in other sectors such as education or health.

In addition to the market, the family helps in providing housing, especially in Southern and Eastern Europe.

In general, we may expect national housing outcomes to be related to income levels, because of the predominant role of the market. Other possible explanations of differences between countries will relate to COFOG-government expenditures (Section 5.3) and tenure differences (beginning of this chapter). Testing for causal relationships goes beyond the scope of this study.

*Income correlates with housing outcomes*

Housing outcomes are mostly related to the housing market, and thus to the economic situation of households (see Haffner et al., 2012). For the economic situation, we focus on income differences between countries.<sup>13</sup> As those differences are fairly stable over time, actual national average income may provide a substantial part of the explanation for housing outcome differences.

- 1 Figure 5.11 shows the relationship between the share of households without housing problems and the equivalised disposable income. At 0.58 the R-squared can be considered relatively high.

One might question whether this relationship also exists for lower-income households, which are less likely to have access to decent and affordable housing. For these households, the role of non-market forces (government, family or tenure structures) may be more important. We present the relationship for the 30% lowest incomes in Figure 5.12.

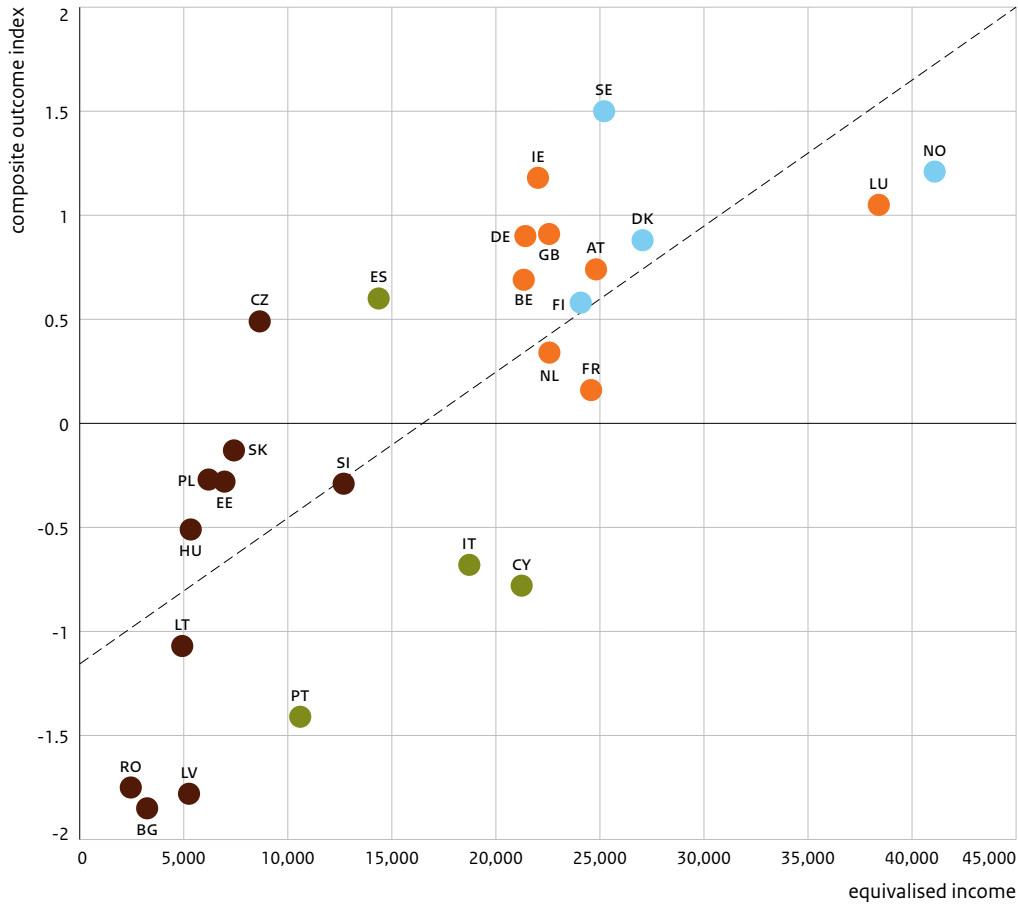
The relationship appears to be almost as strong as for all households. The pattern of regional differences is the same. This confirms the argument that the impact of governments on housing outcomes is not observable, whether it be the result of the government-family-market constellation or the specifications of the measurement exercise (see above).

- 2 In general, Southern European countries (except Spain) have a lower housing index than expected on the basis of their income levels, and Central and Eastern European countries and Spain have a higher index (except the three lowest income-level countries).



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Figure 5.11 Composite outcome indicator by average equivalised annual disposable household income, households, 2012 (in euros and index)



R-squared=0.58

Source: EU-SILC'12, SCP/OTB treatment for 26 countries surveyed in both 2007 and 2012. See Appendix Table A5.12 for the data.

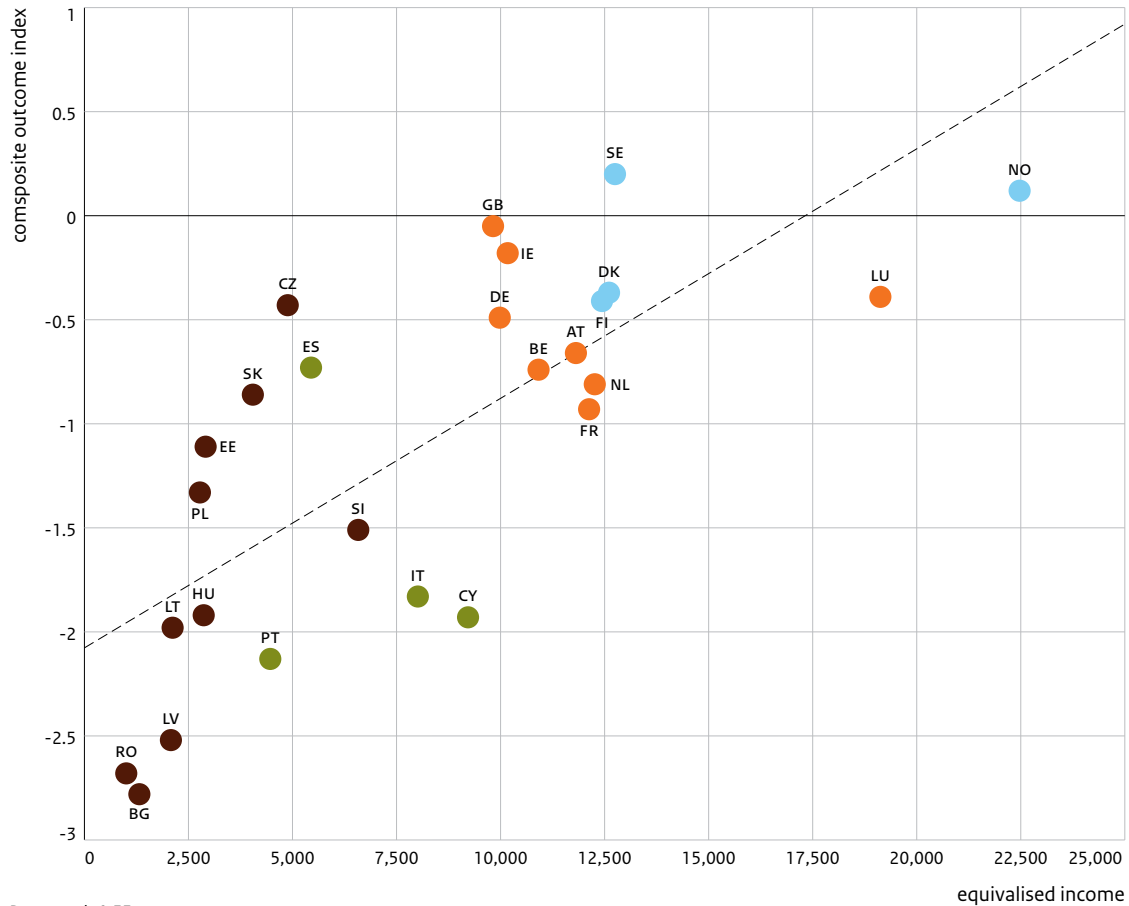
In contrast to our results, Hoekstra (2010), Dewilde (2015) and Lowe (2011) conclude that a unitary rental market (the social rental sector and the private rental sector competing with each other in one and the same market, largely subject to the same kind of rent regulation) improves housing outcomes for lower incomes. However, there may also be a relationship with income levels, and the differences in housing outcomes are not always very large. Further research is needed to shed light on the 26 countries in our dataset.

### *Government expenditure does not correlate with housing outcome*

As indicated in Section 5.3, Figure 5.13 shows that there is no relationship between outcome scores and government expenditure on housing as a percentage of GDP. This conclusion also applies to the different subsectors (renting, outright home ownership, home ownership with a mortgage), but this is not shown here (see Appendix Table A5.13).



Figure 5.12 Composite outcome indicator by average equivalised annual disposable household income, 30% of households with lowest income, 2012 (in euros and index)



Source: EU-SILC'12, SCP/OTB treatment for 26 countries surveyed in both 2007 and 2012. See Appendix Table A5.12 for the data.

Here again one may argue that the effects of government expenditures might be more visible when we focus on lower incomes. However, the relationship for lower incomes is as weak as it is for all households (see Appendix Figure A5.4).

The relationship may be weak, but it is also possible that measurement problems hamper the assessment. A more detailed analysis might provide more insight, but is not possible within the framework of this publication.

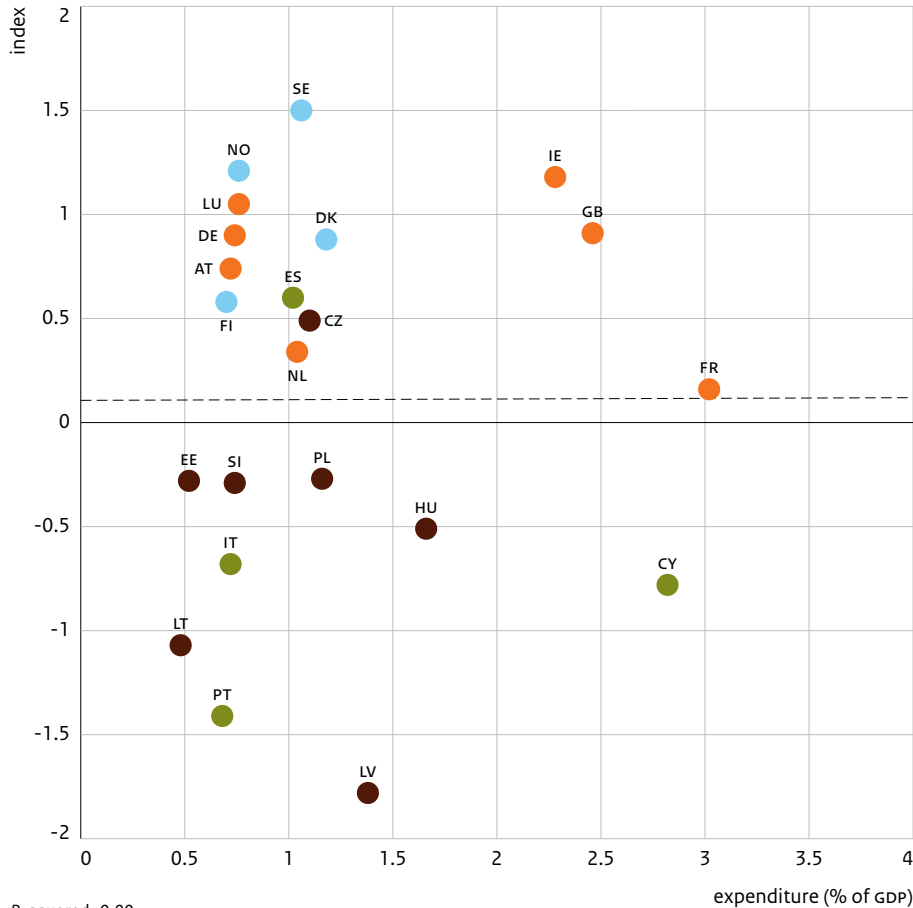
#### *Tenure differences are reflected in housing outcomes*

- 1 On average, rental dwellings have lower outcome scores. Within geographical clusters their scores generally are as low as half those of homeowners (see Appendix Table A5.13). The best scores for rental houses (Western and Northern Europe) are only slightly higher than the lowest scores for owner-occupied houses (outright owners in Central and Eastern Europe).



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Figure 5.13 Government expenditure on housing (average percentage over five-year period 2007-2011) versus composite outcome indicator, households, 2012 (in percentages of GDP and index)



Source: Eurostat (Government Statistics 2007-2011; EU-SILC'12); SCP/OTB treatment for 26 countries surveyed in both 2007 and 2012.

- The differences relate to all dimensions: quality, sufficient space and affordability indicators.

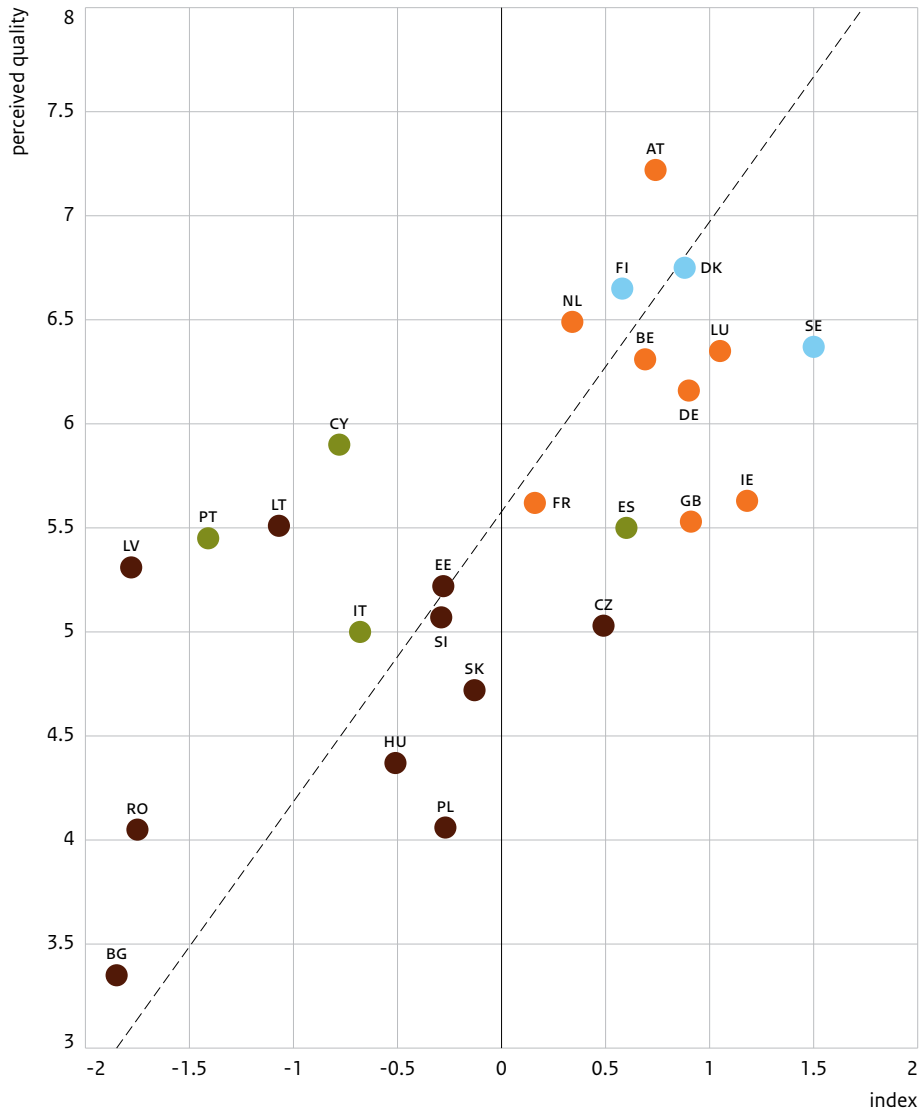
These averages hide large differences, but the maximum outcome for tenants (30% without housing problems, in Sweden) is clearly much lower than that for homeowners (60%, also Sweden). These results are not substantially altered when we include mortgage repayments. Apparently, (historically based) tenure structure does have influence on outcomes.

### 5.6 Citizens' perceptions of the quality of social housing

In this section we investigate the relationship between differences in outcome and citizens' perceptions of the quality of the sector. As EU-SILC does not contain this type of information, we use the European Quality



Figure 5.14 Composite outcome indicator by average equivalised annual disposable household income, 30% of households with lowest income, 2012 (in euros and index)



R-squared=0.45

Source: Eurostat (EU-SILC'12), Eurofound (EQLS'12);SCP/OTB treatment for 26 countries surveyed in both 2007 and 2012.

of Life Survey (EQLS) which contains a variable 'perceived quality of social/municipal housing' (Q53f; Eurofound, 2014). Figure 5.14 compares this information for each country with the composite housing indicator for the year 2012. As the variable is not available in EU-SILC, the outcome indicator cannot be limited to households living in social housing.

- 1 Perceived quality of social/municipal housing shows a positive relationship with the outcome indicator. The Western and Northern European countries score higher on both indicators than the Southern and





Central and Eastern European countries, with the Southern European countries scoring as high as Ireland, the United Kingdom and France on the perceived quality of social housing.

- 2 It must however be remembered that social or municipal housing stock may not be available (in large quantities) in all countries.

If the definition of social/municipal housing refers to rental housing only (which one would expect in the case of municipal housing), then it is clear that most of the Central and Eastern European countries which have a very small rental stock will also have a small or non-existent social rental sector (Figure 5.1). That in itself may be an explanation for the lower score on satisfaction. On the other hand, in some countries (e.g. Spain) there is a form of social or subsidised home ownership that may not be engrained in a perception of quality of the public sector (Hoekstra et al., 2010). There may also be countries that formally do not have a social housing stock, but which may subsidise housing for lower-income households. An example of the latter can be found in Germany, a country that scores relatively high in Figure 5.11 (Haffner et al., 2009).

## 5.7 Conclusion

Our main findings indicate that:

- Present-day housing outcomes are influenced by the housing system: many actors (demand and supply-side market forces, government and family behaviour) and policies from present and past. Housing policy operates as a state corrective to the market. Attempting to measure its effectiveness in combination with its costs is quite difficult.
- Northern and Western European countries score highest on the composite outcome indicator in 2012. On average, they also have the best scores on the three dimensions of the composite outcome indicator: quality, sufficient space and affordability. This also holds for 2007, although the levels were lower then and the differences between the country clusters were more marked. This conclusion also generally holds for lower-income households. In 2012, Sweden scores highest (lowest share of households with one of the housing problems that were defined for this study), followed by Norway and Ireland. Bulgaria, Latvia and Romania are at the other end of the scale. However, the regional clusters are slowly converging over time (2007-2012), partly in line with economic developments.
- Satisfaction follows the same pattern as the composite outcome indicator, but the country scores partly overlap. Objective differences are apparently not precisely mirrored in the subjective expectations based on the actual situation in a country.
- High country scores on the composite indicator are generally in line with high average household incomes. This will not come as a surprise, since housing is largely produced via the market. We found no meas-



urable influence of government expenditure (as measured in COFOG, government statistics collected for the National Accounts) on housing outcomes.

- In Northern and Western Europe, larger shares of households generally consist of owners paying a mortgage (except in Austria and France) or renting the dwelling, as opposed to outright owners (and households living in dwellings provided free). This does not seem to be a practical ‘recipe’ for better housing in the other clusters, however, as these patterns emerged against a certain historic background. Mortgage markets are often not well developed in the Eastern European countries (IMF 2008). Moreover, mortgage loans can turn out to be risky, especially when mortgage loans exceed decreasing dwelling values (negative equity; Hoekstra et al., 2013) or are based on foreign currencies.
- Housing problems most often concern quality (59% of households in the EU), followed by sufficient space problems (19%) and affordability problems (8%). Most households with quality problems (78-79%) are found in Portugal, Bulgaria, Latvia and Romania. The highest prevalence of sufficient space problems is found in Hungary (39%) and Romania (43%). Most households with affordability problems are found in Bulgaria (18%) and Latvia (17%).
- Given the context of the global financial crisis in our period of analysis, it may be considered remarkable that almost all countries experienced an increase in the share of ‘no problem’ households. Possible effects of the crisis are hardly visible in these data. This may be due to timing (incomes mostly being measured in 2011), and also because income reductions affect relatively small percentages of households. Average household income actually increased in all clusters.
- The perceived quality of social/municipal housing correlates with the composite housing indicator. It may be that citizens perceive the level of general government intervention (in social housing; possibly renting as well as home ownership) to be related to housing outcomes.

In addition, a number of methodological reflections need to be considered:

- The composite housing indicator is a combination of information on separate indicators. There is no natural means of aggregation. An argued choice is made, and some alternatives are investigated.
- The choice is for a combination of objective and item-specific subjective indicators. General satisfaction with the dwelling is used to select relevant indicators in relation to dwelling quality, dwelling space and affordability. These three indicators are weighted equally. However, it must be observed that the subjective measure of shortage of space scores much lower than the objective measure for Central and Eastern Europe. This difference more than likely reflects ‘Western’ norms and illustrates the difficulty of setting ‘norms’ that are equally useful for all countries under study.



- A specific definition of affordability based on residual income was used. For each country, an income benchmark was developed based on households reporting great difficulty in making ends meet.

Given the methodological reflections, we conclude that the composite housing outcome indicator used is a credible and fairly robust composite indicator that correlates with all three indicators, of sufficient quality, sufficient space and affordability.

We have shown why housing has been called the ‘wobbly pillar’ of the welfare state: influences other than government spending alone shape housing outcomes, such as (developments in) income and historic tenure structures. National and local housing market contexts, as well as the preferences of households, in combination with the economic circumstances, interact with housing policies to produce housing outcomes. Only part of this could be measured in our preferred definitions.

Given our approach, no housing tenure can be put forward as the housing tenure which minimises housing problems. Housing tenures all have their advantages and disadvantages for households. Large social rental sectors which generally provide affordable housing with long-term tenant security, usually need public investments and are thus expensive for government budgets. Private rental sectors often cannot count on public investment. Diversity on the housing market – a wide range of options for different purses and preferences – may deliver the desired housing solutions for many households.

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# Social security

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6

In its *Charter of Fundamental Rights* (2007), the European Union ‘recognises and respects’ the notion that every citizen is entitled to social security benefits and social services to protect them against the consequences of maternity, illness, industrial accidents, dependency or old age, or loss of employment (chapter IV, article 34). The Charter also stipulates the right to housing and social assistance to ensure a ‘decent existence’ for all people living in the European Union who lack sufficient resources. The Charter is the result of a high degree of consensus at EU level that social security is a basic human right. However, it is not entirely clear what ‘the recognition of’ and ‘the respect for’ actually imply for the inhabitants of the various EU Member States. Supranational rights in particular tend to be very abstract, sometimes representing ‘no more than a requirement of the government to make some effort’ (Vrooman 2009: 41). Within the EU, social security is essentially a national responsibility of each Member State. Due to differences in the tradition of social security provision, there are considerable country differences (Castles 1993; Castles et al. 2010; Svallfors 2010; Vrooman 2012). Given this huge institutional variety, it is important to assess country differences in performance with regard to social security. In this chapter we do not limit our analysis of performance to the EU Member States, but add those of several other European and non-European countries in order to provide a broader picture of the functioning of the public sector of social security, as described earlier in the introductory chapter of this report.

Theoretically, social security<sup>1</sup> aims to generate positive social outcomes by protecting individuals against economic deficits. This is generally accomplished by granting rights or entitlements (e.g. benefits, normative claims on financial aid from others) and imposing duties, such as an obligation to pay taxes and contributions or to provide care. Typically, conditions and potential sanctions are attached to these rights and duties (Vrooman 2009: 126).

In delineating public social security, a number of supranational guidelines became important after WW II. In general terms, these include the Universal Declaration of Human Rights (1948) and the European Convention (1950). With respect to social protection, the International Labour Organisation’s (ILO) Convention on Social Security (Minimum Standards) (Convention No. 102, 1952), the European Social Charter (1961), the International Covenant on Economic, Social and Cultural Rights (1966) and the aforementioned EU Charter of Fundamental Rights (2007) are noteworthy.

<sup>1</sup> Throughout this chapter, we use the terms ‘social security’ and ‘social protection’ interchangeably.



As the first initiative on guaranteeing social rights, Convention No. 102 called for countries worldwide to protect their inhabitants through national legislation from the consequences of (1) sickness or disability, (2) unemployment, (3) old age, (4) employment injuries and (5) invalidity. Furthermore, countries should provide (6) maternity benefit, (7) family benefit and (8) survivors' benefit. Finally, according to Convention No. 102, governments need to safeguard (9) 'the provision of benefit in respect of a condition requiring medical care of a preventive or curative nature'. The minimum standards set by the Convention relate to the percentage of the population protected by social security, the minimum benefit level, the conditions for entitlement and its duration. How these standards are maintained is a national responsibility, and not part of the Convention; ratifying countries are free in this respect.<sup>2</sup>

#### *Defining social security*

Although the list of social risks may seem elaborate, from a theoretical point of view the ILO's demarcation of social security is often regarded as narrow (Viaene et al. 1990; Berghman 1986, 1990; Vrooman 2009). First of all, because it is restricted to public income replacement schemes. It disregards other means of social security delivery, e.g. through fiscal arrangements, employer's benefits, private insurance, family support and informal care and other types of intervention aiming at prevention and rehabilitation rather than providing benefits. Secondly, the ILO list is limited, because it consists of risks typically experienced by the traditional male breadwinner. It thus neglects new social risks, such as divorce, single parenthood, and the ability to combine work and family life. Finally, in a broader interpretation, social security not only offers income protection, but also ensures work and social participation.

In spite of its theoretical limitations, in this chapter we will largely follow the ILO's demarcation of social security. This is because the subject matter of this study focuses on public provisions. In most countries analysed, income replacement schemes (in benefits or in kind) take up the largest share of the social security budget. We therefore confine ourselves mainly to public social insurance schemes and national provisions relating to sickness leave, disability, unemployment, old age, family and children, and loss of a spouse or parent. We disregard health care as it is the subject of a separate chapter in this study. To this we add social assistance – in the literature often regarded as coverage of the general risk of poverty not insured by other social security schemes.

#### *The goal of this chapter*

This chapter aims to provide a picture of the functioning of the public sector of social security. As mentioned earlier, there are differences in the tradition of social security provision across countries, due to institutional variety. It is therefore important to assess country differences in performance with regard to social security. We will analyse the performance in

<sup>2</sup> Currently, 48 countries have ratified Convention No. 102, although not all of these countries have endorsed all parts of it.

36 countries by focusing on (1) their achievements in providing protection and combatting poverty, (2) the government expenditure on social security and (3) the delivery of social benefits. The selection of these aspects is inspired by Van Dooren, Bouckaert and Halligan (2010), see also Chapter 1. The general idea is that the government uses expenditure (inputs) to deliver public goods, services or benefits (output) in order to achieve the desired outcomes (i.e. providing protection and combating poverty).

*Indicators for inputs, outputs and outcomes*

Table 6.1 depicts the central elements of the chapter. The achievements of the social security sector are described using indicators for outcomes focusing on income protection (poverty and pension replacement rates) and job security (non-employment in youth and long-term unemployment) at different stages of life, inputs (expenditure) and outputs (production). In contrast to the other chapters in this study, we pay no attention to the relationship between countries' performance on outcomes and perceived quality in social security. This is because of a lack of recent cross-comparative data on perceptions of quality in the institutions of social security as a whole.

Table 6.1 Outcome, output and input indicators used in this chapter and corresponding data sources

Level	Indicators	Sources
Outcome	Poverty	Eurostat / OECD / EU-SILC
	Non-employment in youth	Eurostat
	Long-term unemployment	Eurostat
	Pension replacement rates	OECD
Input	Public (and private) expenditure on social security	Eurostat / OECD
Output	Number of old age pension recipients	ILO
	Coverage of unemployment benefit scheme	ILO

*Structure of the chapter*

This chapter is structured as follows. First, we elaborate a little more on the historical roots of social security and its institutional variety (Section 6.1). In Section 6.2 we then introduce the outcome indicators and compare countries' performance. In Sections 6.3 and 6.4 we document the expenditure on social security (inputs) and the beneficiaries (outputs) for each country. In Section 6.5 we identify possible interpretations and explanations of the results we found in the previous sections. Section 6.6 summarises the chapter.





## 6.1 Historical roots of and institutional variety in social security

Public social security schemes emerged in Western and Central Europe during the 19<sup>th</sup> century, superseding a long tradition of charity and occupational welfare, such as the poor relief offered by churches, municipalities and the pre-modern guilds. Their growth was connected to the new risks and longer chains of interdependence that followed the processes of industrialisation and urbanisation, and to the rise of the modern nation state and bureaucracy (De Swaan 1988). This resulted in two ‘pure’ forms of social security: social insurance and national provision.

In his study *The three worlds of welfare capitalism*, Esping-Andersen (1990) laid out different types of models of social security or ‘welfare state regimes’. That study sparked off a lively 25-year debate on the different models of social security (Emmenegger et al. 2015). Based on the academic literature, some general observations can be made on institutional variety in terms of public social security (see for instance Arts and Gelissen 2002, 2012; Castles et al. 2010; Ferragina and Seeleib-Kaiser 2011; Vrooman 2012).

### 6.1.1 Social insurance and national provision

Historically, the *social insurance* or ‘Bismarckian’ model of public social security came first. These collective schemes offer legal national coverage of workers against employment risks, especially old age, illness, disability, death of the breadwinner and unemployment. Such schemes apply semi-actuarial principles; the benefit level depends on the duration and level of contributions paid, and on the losses one has suffered, such as the degree of disability (‘equivalence’ of rights, contributions and damage). The main aim is to maintain the realised standard of living to a certain degree. In doing so, social insurance schemes tend to confirm existing status differentials through the selective attribution of rights and duties. Privileged employees (civil servants, the military, specialist workers) typically have better coverage than manual labourers, and certain groups (e.g. casual labourers, the self-employed, unemployed) have no coverage at all. After ww II, the *national provision* or ‘Beveridgean’ model of social security emerged. In order to prevent the squalor experienced by many during the Great Depression of the 1930s, national provision aimed to guarantee a social minimum to each inhabitant – for instance through a state pension or general social assistance. This model is explicitly redistributive. It is financed out of public revenue (taxation instead of earmarked contributions); rights are granted on the basis of what people need as a minimum, and do not depend on people’s previous contributions. The universalistic nature of national provision is expressed in flat-rate benefits for different types of households, while targeting the most needy is realised through means testing. An important characteristic of national provision schemes is their rights-based nature for all.



Social insurance and national provision hardly occur in their purest forms today. Due to broadening of the target group and the introduction of need elements, social insurance systems have often acquired provision-like features. At the same time, national provisions began incorporating insurance elements, partly in order to curtail costs. Thus the population covered by the national provision may be limited; survivors' benefits, for instance, might be restricted to older widows or widows with young children. Another example is the dependence of old age pensions on the number of years someone has resided in the country. This 'blurring' also implies that many countries have a mix of schemes aimed at income maintenance and minimum income guarantees.

### 6.1.2 Institutional variety in public social security

Public social security is most limited in the liberal welfare regime, which is typical for the Anglo-Saxon countries: Canada, the United States, Australia, New Zealand, the United Kingdom and Ireland. In the liberal welfare state, collective schemes are intended to be 'residual', and consist of national provisions targeted at the lowest groups through extensive means testing. A well-developed private insurance system may exist for the middle classes. There is debate on the aptness of this regime type for Australia and New Zealand. This is because these countries supposedly have wider coverage than the other Anglo-Saxon nations, more lenient means testing, and provide 'social protection by other means'. However, since the 1980s many of these mechanisms have been dismantled (Castles 2010).

In the social-democratic regime type, public social security is theoretically the most extensive. Social benefits are available for all inhabitants (universality), at an earnings-related level appealing to the middle classes. Private insurance is less important. The social-democratic regime type prevails in the Scandinavian countries. The elaborate social security system requires high levels of taxation and near full employment of both sexes in order to be sustainable in a financial sense. There is an extensive active labour market policy to prevent people becoming dependent on social benefits. Social-democratic welfare regimes are highly redistributive, and aim to guarantee all citizens a reasonable standard of living, irrespective of their position on the labour market. In other words, there is a high level of 'decommodification' in these countries, i.e. 'the degree to which individuals, or families, can uphold a socially acceptable standard of living independently of market participation' (Esping-Andersen 1990: 37)

Public social security is also extensive in the corporatist (or 'conservative') regime type, but the collective rights are awarded on a selective basis, mostly through social insurance. This is evident particularly from the link between previous contributions and labour experience, and a limited safety net in terms of national provision. Furthermore, different occupational



groups have separate benefit schemes. Families with children are well protected through collective insurance ('formal familialism'), which results in a limited labour market participation of women. Corporate regimes have medium decommodification and seek to reproduce the social inequality between status groups. These systems are characteristic among Western European nations (excluding the United Kingdom and Ireland). However, the Netherlands and Switzerland are often regarded as 'hybrids', combining social-democratic and corporatist traits (cf. Ferragina and Seeleib-Kaiser 2011; Vrooman 2012).

The Southern European countries are representatives of the 'Latin Periphery' regime type. The Southern European countries were rather late in developing public social security (Ferrara 1996; 2010). An important trait of the Latin Periphery regime type is the strong polarisation of social security entitlements: generous benefits for civil servants, modest benefits for other people in formal employment, and (very) limited transfers for the large group working in agriculture and the informal economy. Furthermore, public social security is mainly developed with regard to pensions and health care. The Latin Periphery type include a great degree of patronage and clientelism in the granting of rights. Another trait of this regime type is the strong reliance on direct social security delivery within families. This 'informal familialism' contrasts with the formal familialism of the corporatist regime type. Some authors (e.g. Esping-Andersen 1999) therefore argue that the Southern European countries do not represent a separate type, but are a less developed corporatist welfare regime.

Whether social security systems in the East Asian countries form a separate regime type is debated (e.g. Peng and Wong 2010; Kim 2010). Several traits point in this direction. The East Asian countries in general have limited public social security (mainly confined to pensions and health care), extensive occupational welfare in large companies, and high private savings. They are also characterised by a great deal of informal familialism, and labour market measures that keep people employed in non-competitive industries (agriculture, building construction), resulting in low unemployment figures. However, there is great variety within the East Asian group (e.g. Croissant 2004; Kasza 2006). Japan, for instance, has a long Bismarckian social insurance tradition, leading to a rather well-developed and more costly social security system than elsewhere in the region. Other East Asian countries, such as South Korea, introduced their systems much later. In this country, before democratisation started, public social security was limited to groups deemed important to the ruling class. After the democratisation process, public pensions and health care expanded greatly.

The Central and Eastern European countries theoretically do not form a separate regime type. However, they do belong together to a certain degree as a result of their shared communist past (Cook 2010). During the communist period, universal national provisions were available covering a wide range of risks (pensions, health care, family benefits, free education, subsidies for



housing and food) but at a rather sparse level, mainly covering basic needs. The system was stratified: provisions for communist party officials exceeded those for the industrial workers, while the provisions for these latter workers were in turn much better than those for agricultural workers. Bismarckian social insurance principles remained most identifiable in Hungary, the former Czechoslovakia and a large part of Poland, and were less prominent in the Baltic States, Romania and Bulgaria. After the fall of the Berlin Wall, the Czech Republic and Slovenia retained the most extensive and universal public social security systems. The welfare regime in Poland and Hungary occupies an intermediate position, since the regime is a compromise between maintaining social protection and liberalisation. The Baltic States, the Slovak Republic, Bulgaria and Romania moved more towards a liberal welfare regime.

## 6.2 Outcomes

As discussed in the introduction of this chapter, providing protection and combating poverty are considered the main goals of the social security system. The achievements of the social security sector are described using the following four outcome indicators, focusing on different stages in life: poverty, non-employment in youth, long-term unemployment and pension replacement rates. There were some restrictions regarding the choice of indicators for social security outcomes, due to availability of information. To summarise the outcomes covering the social security sector, an overall outcome index is constructed for each country. This outcome index is based on country scores for each outcome indicator.

### 6.2.1 Poverty

“An individual actor is poor if he consistently lacks the means to obtain the minimum necessities of his community” (Vrooman 2009: 360). This definition reflects the absolute lack of necessities rather than relative shortages, meaning that poverty needs to be operationalised into absolute poverty lines. With absolute poverty lines, people are poor if they are unable to obtain a certain minimum level of necessities, whereas relative poverty lines reflect the disadvantage compared with a reference group. As perceptions of the minimum necessities vary across countries and over time, no commonly agreed measure of absolute poverty across countries exists. A starting point for measuring poverty is therefore to look at relative poverty, based on distance to the median income level in each country in each year.

#### *Relative poverty*

Relative poverty is usually measured as a percentage of the median disposable household income<sup>3</sup> of a country, and is often used in international comparative research. Relative poverty lines reflect the general level of prosperity of a specific country at a certain point in time. The median divides a

<sup>3</sup> Eurostat calculates the disposable household income by adding the personal income received by all household members plus income received at household level. It includes all income from work, private income from investment and property, transfers between households, and all transfers received in cash, including old-age pensions.



country's income distribution into two halves: the number of people earning more than this median amount is precisely the same size as the number of people earning less. A poverty line drawn at 60% of the median income value has been applied for a number of years by the European Commission, in order to compute the percentage of poor people in the different Member States to be compared. However, two countries with the same 'at-risk-of-poverty' rate may differ significantly in terms of the income level of the poor. For the 28 European Union countries plus Switzerland and Norway, data is available through Eurostat, which presents information based on EU-SILC. For non-European countries, data from the OECD is used.

In 2013, 17% of the inhabitants of the European Union had an income below 60% of median income in their country (Table 6.2). We will highlight the prominent findings across all 36 countries:

- 1 Relative poverty was lowest in Northern and Western Europe, especially in the Netherlands (10%) and Norway (11%).
- 2 The Czech Republic also stands out, having only 9% of its population at risk of poverty. A flat income distribution (low income inequality) results in a low percentage of Czechs being below the poverty line of 60% (OECD: Society at a Glance, 2014).
- 3 In five European countries, at least one fifth of households are regarded as poor: Greece (23%), Romania (22%), Bulgaria (21%), Lithuania (21%) and Spain (20%).
- 4 High relative poverty rates were also found in the non-European countries. However, we should keep in mind that we used a different data source for these countries which might not be completely comparable to the data we used for the European countries.
- 5 Between 1995 and 2013, we do not see a clear overall increase or decrease in relative poverty. Large increases in poverty are found in Luxembourg, Sweden, Romania and Bulgaria, whereas substantial decreases occurred in the United Kingdom and Ireland. One possible explanation for the variation in poverty rates between countries over time is that income inequality rates – which are highly correlated with relative poverty – have converged across the EU since the beginning of the financial crisis (European Commission, 2015). Countries with initially lower levels of income inequality (e.g. Sweden) came to experience higher income disparities, whereas in countries with high levels of income inequality (e.g. United Kingdom) a decrease occurred.

As discussed earlier, there are some limitations to this relative indicator for poverty. The level of the relative poverty threshold depends greatly on the general prosperity and income inequality of the country concerned. In a wealthy country, those on less than 60% of the median income need not by definition be poor, while in a poor country even those on the relatively higher incomes could be poor. For example, the monthly threshold for poverty is € 385 in the Czech Republic and € 1,042 in the Netherlands, even though both countries are found to have low poverty rates (Eurostat data). Furthermore, it provides no information on whether people are able to



make ends meet with the amount represented by the poverty line, making it unclear whether an income below the threshold actually makes people poor.

#### *Contextual poverty*

Absolute poverty refers to a set standard which is consistent between countries. To derive an absolute measure of poverty, consensus is required on the budget needed to obtain the minimum necessities. The latter varies across countries and over time, and a poverty line taking this into account may be considered 'contextual'. The Netherlands Institute for Social Research|SCP determined a *modest but adequate* reference budget. This budget includes expenses which strictly speaking exceed the minimum budget for unavoidable expenses, but excludes luxury items such as a car or foreign holidays (Vrooman, 2009: 385). In 2010, this poverty line was set at € 999 per month for a single person in the Netherlands. Norm amounts for other types of households were derived through an empirical equivalence scale developed by Statistics Netherlands (CBS). Using the country-specific equivalised household incomes and purchasing power parities (PPPs<sup>4</sup>) for actual individual consumption, we transferred the Dutch poverty line to the national currencies of the other countries to derive a country-specific percentage of persons living in poverty. A potential risk of this method is that, although 'translated' using PPPs, the standard of living in the Netherlands is imposed on the other countries. Country-specific reference budgets would be preferable, but are not available yet. Nonetheless, using this measure for contextual poverty obviates the dependency of poverty rates on income inequality.

Table 6.3 shows the contextual poverty rates in European countries. The following results stand out:

- 1 Contextual poverty was lowest in Northern and Western Europe, especially in Luxembourg, Norway and Switzerland (all below 10%).
- 2 In all Central and Eastern European countries, except Slovenia, at least half the population is considered to be living in poverty.
- 3 Between 2005 and 2011, no clear increasing or decreasing pattern can be observed. Most Western European countries show increases, whereas most Northern and Central and Eastern European countries show decreases. The time trend in Southern European countries is even more mixed. Noteworthy is the recent increase in contextual poverty in Greece: between 2011 and 2012, the poverty rate increased by 12 percentage points, from 45% to 57%.

Figure 6.1 shows that relative poverty and contextual poverty are correlated ( $r=0.54$ ), but the association is by no means perfect. In certain Central and Eastern European countries, especially, the difference is considerable. The Czech Republic, Slovak Republic, Hungary and Estonia have low to moderate relative poverty rates, but over half the population is below the contextual poverty threshold, as in most other Central and Eastern European countries (with the exception of Slovenia).

<sup>4</sup> PPPs are the rates of currency conversion that equalise the purchasing power of different currencies by eliminating the differences in price levels between countries.



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Table 6.2 At risk of relative poverty (threshold is 60% of median equivalised income after social transfers) (in %)

For reading instructions see page 49

Region	Country	1995	2000	2005	2010	2013	2013	2013 vs 1995
Western Europe	Germany	15	▼ -5	▲ +2	▲ +4	0	16	
	Ireland	19	▲ +1	0	▼ -5	▲ +1	16 <sup>a</sup>	
	Luxembourg	12	0	▲ +2	▲ +1	▲ +1	16	
	United Kingdom	20	▼ -1	0	▼ -2	▼ -1	16	
	Switzerland	.	.	.	15	0	15	
	Belgium	16	▼ -3	▲ +2	0	0	15	
	France	15	▲ +1	▼ -3	0	▲ +1	14	
	Austria	13	▼ -1	▲ +1	▲ +2	▼ -1	14	
	Netherlands	11	0	0	▼ -1	0	10	
Northern Europe	Sweden	.	9 <sup>b</sup>	▲ +1	▲ +3	▲ +2	15	
	Denmark	10	0 <sup>b</sup>	▲ +2	▲ +1	▼ -1	12	
	Finland	8 <sup>b</sup>	▲ +3	▲ +1	▲ +1	▼ -1	12	
	Norway	.	11 <sup>b</sup>	0	0	0	11	
Southern Europe	Greece	22	▼ -2	0	0	▲ +3	23	
	Spain	19	▼ -1	▲ +2	▲ +1	▼ -1	20	
	Italy	20	▼ -2	▲ +1	▼ -1	▲ +1	19	
	Portugal	23	▼ -2	▼ -2	▼ -1	▲ +1	19	
	Malta	.	15	▼ -1	▲ +2	0	16	
	Cyprus	.	.	16	0	▼ -1	15	
Central and Eastern Europe	Romania	.	17	▲ +1 <sup>a</sup>	▲ +3	▲ +1	22	
	Bulgaria	.	14	0	▲ +7	0	21	
	Lithuania	.	17	▲ +4	0	0	21	
	Croatia	.	.	18	▲ +3	▼ -1	20	
	Estonia	.	18	0	▼ -2	▲ +3	19	
	Latvia	.	16	▲ +3	▲ +2	▼ -2	19	
	Poland	.	16	▲ +5	▼ -3	▼ -1	17	
	Slovenia	.	11	▲ +1	▲ +1	▲ +2	15	
	Hungary	.	11	▲ +3	▼ -2	▲ +2	14	
	Slovak Republic	.	.	13	▼ -1	▲ +1	13	
	Czech Republic	.	8 <sup>b</sup>	▲ +2	▼ -1	0	9	
Oceania	Australia	21	0	0 <sup>a</sup>	▲ +1	▼ -1	21 <sup>a</sup>	
	New Zealand	16	▲ +5	.	20 <sup>a</sup>	▼ -1	19 <sup>c</sup>	
Northern America	United States	24	0	0	0	▲ +1	25 <sup>a</sup>	
	Canada	17	▲ +1	▲ +1	▲ +1	▼ -1	19 <sup>c</sup>	
Eastern Asia	Japan	20	▲ +1	▲ +1 <sup>b</sup>	22 <sup>a</sup>	.	.	
	Korea	.	.	20 <sup>b</sup>	▲ +1	▼ -1	20	

a previous year; b following year; c 2011. Source: Eurostat (At risk of poverty rate by poverty threshold, 2014), OECD (Poverty rate after taxes and transfers, 2014).

▲ largest increase  
▼ largest decrease

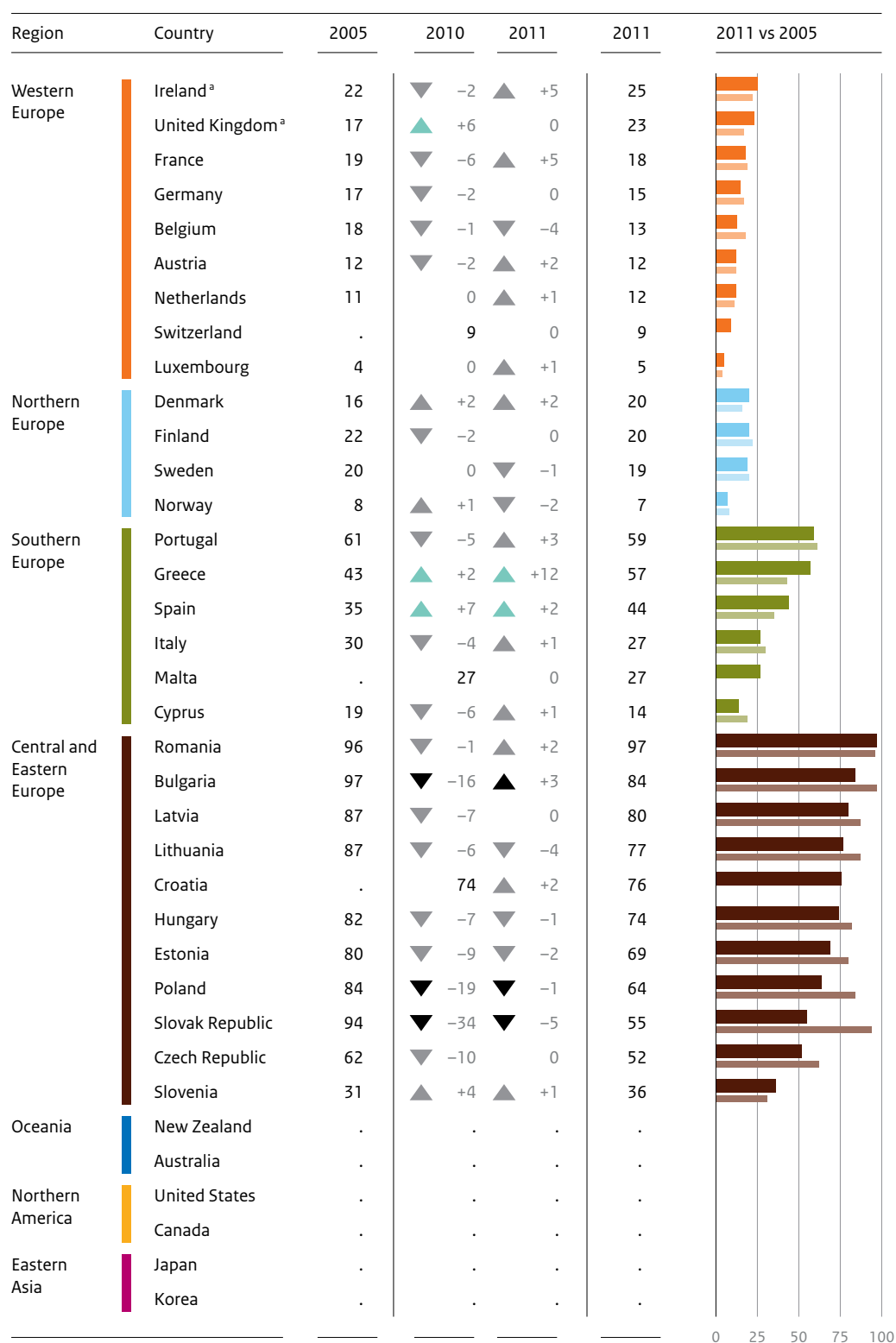
2013  
1995



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Table 6.3 Contextual poverty (absolute threshold based on the Dutch modest but adequate reference budget) (in %)

For reading instructions see page 49



a Income data in the EU-SILC surveys from year t are from year t-1 (the income reference period). Two exceptions: Income variables from the United Kingdom refer to the 12-month period centred around the interview date. For Ireland it is the 12-month period prior to the interview date. Thus data from the United Kingdom and Ireland might be more recent than for the other countries. Source: EU-SILC, SCP treatment.

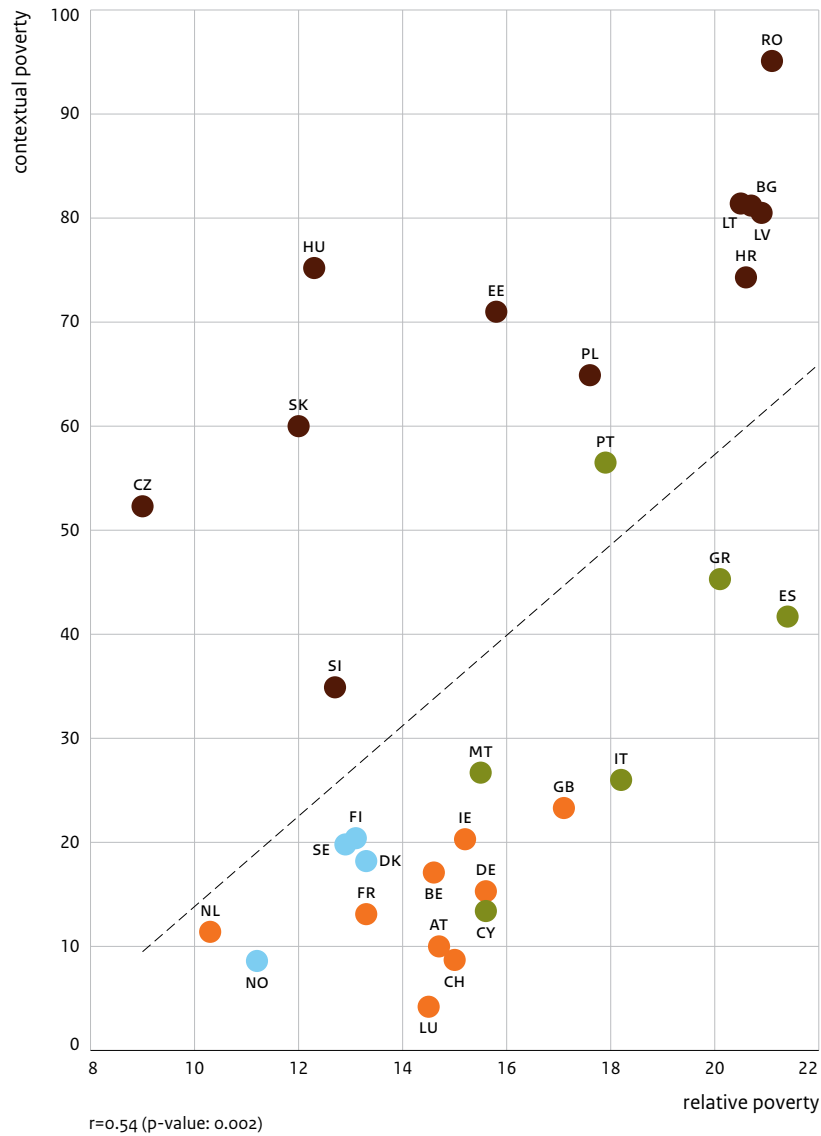
▲ largest increase  
▼ largest decrease

2011  
2005





Figure 6.1 Correlation between the relative poverty indicator measured by the threshold of 60% of median income and the contextual poverty indicator measured by the modest but adequate reference budget (2010, in %)



### 6.2.2 Non-employment in youth

In times of economic decline and growing pension take-up due to population ageing, non-employment in youth may be an extra burden for countries. Young people who are unemployed or inactive in the labour market will increase public spending, by increased benefit payments, lost income-tax revenues and a waste of human capacities as a result of possible ‘scarring effects’ (Morsy, 2012).



Young workers are often the ones with short-term contracts, which lead them into precarious situations. Because of their temporary contracts, young people are often the first to be laid off when a company downsizes, and they are often not eligible for redundancy payments due to their limited employment history. This makes them vulnerable to disadvantages in relation to work-related capacities but also to financial-related capacities.

The indicator for young people not in education, employment or training (NEET) corresponds to the percentage of the population aged 15-24 years who are not employed and not involved in further education or training i.e.: unemployed or inactive according to the International Labour Organisation definition and not having received any education or training in the preceding four weeks. This indicator is available in the 28 EU Member States through the Eurostat website, based on information collected by the European Union Labour Force Survey (EU-LFS). This covers the total population aged 15 years and older residing in Member States, except for persons living in collective or institutional households. Table 6.4 shows the NEET-percentage across the different countries. A few results stand out:

- 1 Western and Northern Europe have the lowest shares of young people not in education, employment or training. In 2013, non-employment among young people was lowest in Luxembourg (5%) and the Netherlands (5%), followed by Denmark (6%), Germany (6%), Austria (7%) and Sweden (8%).
- 2 The highest percentages are found in Southern and Central and Eastern Europe, with Italy (22%), Bulgaria (22%) and Greece (20%) all having at least one fifth of young people not in education, employment or training.
- 3 Since 2005, a mixed pattern of increases or decreases in the neet-percentage has emerged across countries. Large increases are found in Ireland, Italy, Portugal, Spain and Greece, due to the impact of the financial crisis. Substantial decreases have occurred in Germany and the Czech Republic.

### 6.2.3 Long-term unemployment

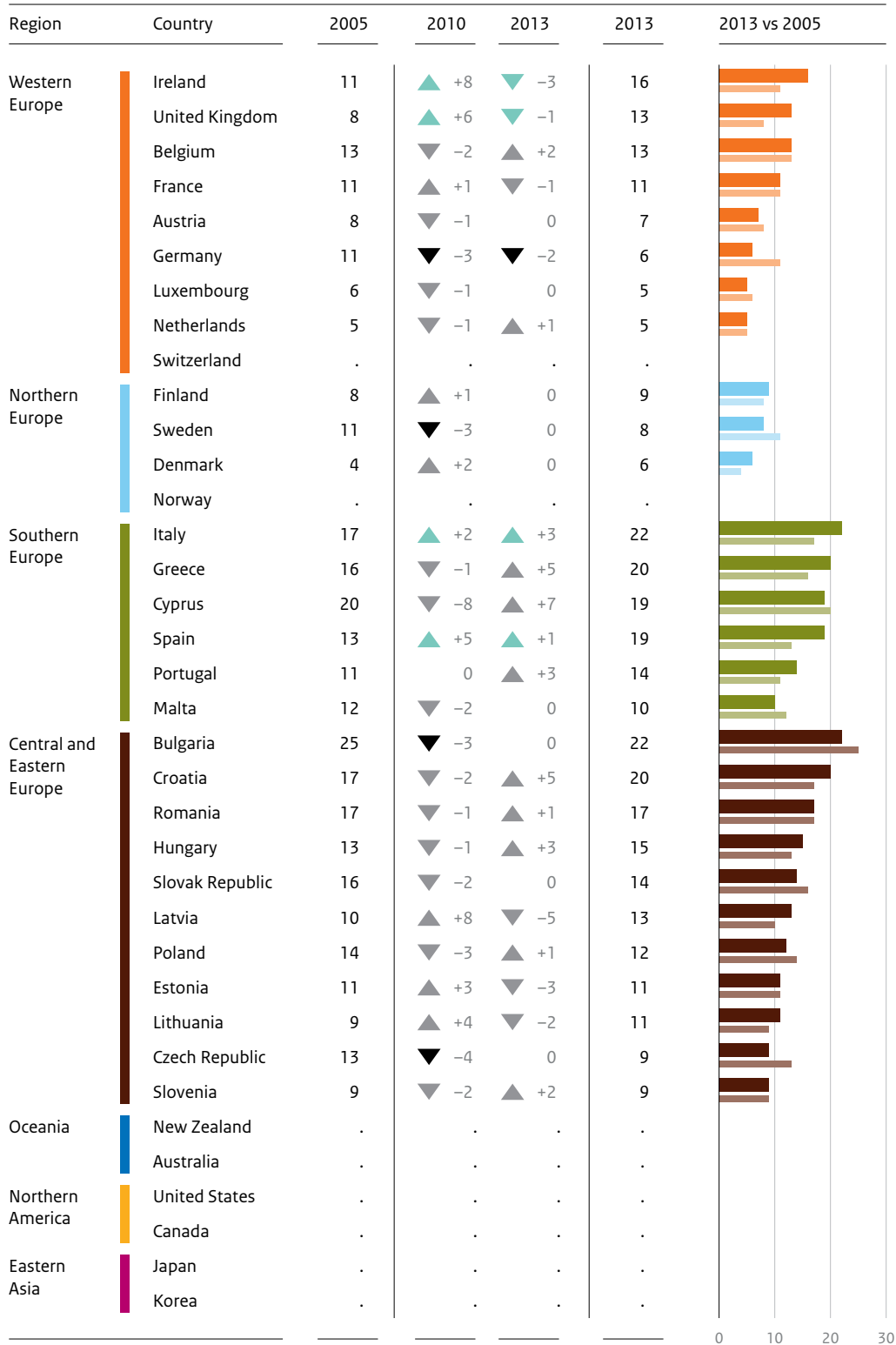
The duration of unemployment can vary greatly between individuals, and being unemployed for a short period of time is less problematic than being out of work for a prolonged period. Men, young people or low-skilled workers are generally most at risk of long-term unemployment. Particularly at risk of long-term unemployment are those who are “employed in declining occupations and sectors, whose skills often need upgrading” (European Commission, 2015). As the economy recovers, a key question is to what extent long-term unemployed people will re-enter the labour market. As a consequence, these long-term unemployed workers are of particular interest for social and economic policy.



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Table 6.4 Non-employment in youth (% of young people aged 15-24 years who are not in education, employment or training)

For reading instructions see page 49



Source: Eurostat (Young people not in employment, education or training, 2015).

▲ largest increase  
▼ largest decrease

2013  
2005



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Table 6.5 Long-term unemployment (persons unemployed for at least 12 months as a percentage of the total number of active persons in the labour market)

For reading instructions see page 49

Region	Country	1995	2000	2005	2010	2013	2013	2013 vs 1995
Western Europe	Ireland	7.6	▼ -6.0	▼ -0.1	▲ +5.3	▲ +1.1	7.9	2.3
	France	4.0	▼ -0.7	▲ +0.4	0.0	▲ +0.5	4.2	0.2
	Belgium	5.8	▼ -2.1	▲ +0.7	▼ -0.3	▼ -0.2	3.9	-1.9
	Netherlands	3.4	▼ -2.6	▲ +1.3	▼ -0.9	▲ +1.2	2.4	-1.0
	Germany	4.0	▲ +0.1	▲ +1.8	▼ -2.6	▼ -1.0	2.3	-1.7
	United Kingdom	3.5	▼ -2.1	▼ -0.4	▲ +1.8	▼ -0.9	1.9	-1.6
	Luxembourg	0.7	▼ -0.2	▲ +0.7	▲ +0.1	▲ +0.5	1.8	1.1
	Austria	1.0	0.0	▲ +0.3	▼ -0.2	▲ +0.1	1.2	0.2
	Switzerland	.	.	.	.	.	.	0.0
Northern Europe	Denmark	2.0	▼ -1.1	▲ +0.2	▲ +0.4	▲ +0.3	1.8	-0.2
	Finland	.	2.8	▼ -0.6	▼ -0.2	▼ -0.3	1.7	-1.1
	Sweden	2.3	▼ -0.9	▼ -0.4	▲ +0.6	▼ -0.1	1.5	-0.8
	Norway	.	0.3	▲ +0.5	▼ -0.1	0.0	0.7	0.4
Southern Europe	Greece	4.6	▲ +1.6	▼ -1.0	▲ +0.5	▲ +12.8	18.5	13.9
	Spain	11.6	▼ -6.6	▼ -2.8	▲ +5.1	▲ +5.7	13.0	1.4
	Portugal	3.4	▼ -1.3	▲ +2.1	▲ +2.1	▲ +3.0	9.3	5.9
	Italy	7.1	▼ -0.9	▼ -2.3	▲ +0.2	▲ +2.8	6.9	-0.2
	Cyprus	.	1.2	▲ +0.1	0.0	▲ +4.8	6.1	4.9
	Malta	.	4.5	▼ -1.2	▼ -0.2	▼ -0.2	2.9	-1.6
Central and Eastern Europe	Croatia	.	.	7.6	▼ -0.6	▲ +4.0	11.0	11.0
	Slovak Republic	.	10.3	▲ +1.5	▼ -2.5	▲ +0.7	10.0	-0.3
	Bulgaria	.	9.4	▼ -3.3	▼ -1.3	▲ +2.6	7.4	-2.0
	Latvia	.	8.3	▼ -3.8	▲ +4.3	▼ -3.0	5.8	-2.5
	Slovenia	3.4 <sup>a</sup>	▲ +0.7	▼ -1.0	▲ +0.1	▲ +2.0	5.2	1.8
	Lithuania	.	8.0	▼ -3.6	▲ +3.0	▼ -2.3	5.1	-2.9
	Hungary	5.4 <sup>a</sup>	▼ -2.4	▲ +0.2	▲ +2.3	▼ -0.6	4.9	-0.5
	Poland	.	7.4	▲ +2.9	▼ -7.3	▲ +1.4	4.4	-3.0
	Estonia	.	6.7	▼ -2.3	▲ +3.2	▼ -3.8	3.8	-2.9
	Romania	.	3.9	▲ +0.1	▼ -1.6	▲ +0.9	3.3	-0.6
	Czech Republic	.	4.3	▼ -0.1	▼ -1.2	0.0	3.0	-1.3
Oceania	New Zealand	.	.	.	.	.	.	0.0
	Australia	.	.	.	.	.	.	0.0
Northern America	United States	0.5	▼ -0.3	▲ +0.4	▲ +2.2	▼ -0.9	1.9	1.4
	Canada	.	.	.	.	.	.	0.0
Eastern Asia	Japan	0.6	▲ +0.6	▲ +0.3	▲ +0.4	▼ -0.2	1.7	1.1
	Korea	.	.	.	.	.	.	0.0

a 1996. Source: Eurostat (Long-term unemployment in active population, 2015).

▲ largest increase  
▼ largest decrease

2013  
1995



The long-term unemployment rate is defined as the share of persons who have been unemployed for 12 months or more as a percentage of the total number of active persons in the labour market (aged 15-64 years). Active persons are those who are either employed or unemployed. Levels of long-term unemployment may be reduced when long-term unemployed persons have left the active population by entering into retirement or disability schemes. Table 6.5 shows the cross-national results for long-term unemployment. In short:

- 1 Long-term unemployment is relatively low in Western and Northern Europe, and in the United States and Japan. The best-scoring countries are Norway (0.7%), Austria (1.2%) and Sweden (1.5%).
- 2 In four countries, one tenth of the active persons in the labour market are long-term unemployed: Greece (19%), Spain (13%), Croatia (11%) and the Slovak Republic (10%).
- 3 Most countries have seen an increase in long-term unemployment in recent years. This increase was most marked in some Southern European and Central and Eastern European countries and in Ireland, possibly reflecting the impact of the financial crisis.

#### *Share of long-term unemployment in total unemployment*

When looking at long-term unemployment as a percentage of total unemployment, we see that in Northern Europe only about a fifth of the unemployed have been out of work for 12 months or longer (see Table A6.1 in the appendix to this chapter ([www.scp.nl](http://www.scp.nl))). Within this group, the proportion is lowest in Sweden (19%); but this is far above the level reached in Korea, where long-term unemployment is virtually non-existent (0.3%). Fairly low shares (less than a quarter) are found in Austria (24%), Australia (20%), New Zealand (12%), Canada (12%). At least half the unemployed are long-term unemployed in the Slovak Republic (70%), Greece (67%), Ireland (61%), Bulgaria (57%), Italy (57%), Portugal (56%), Slovenia (51%) and Croatia (64%). Overall, the same pattern emerges as with the percentages of long-term unemployment in the previous section.

#### 6.2.4 Pension replacement rates

The level of income from pensions relative to earnings<sup>5</sup> when working may be captured in a replacement rate. The net replacement rate is defined as the individual net pension entitlement as a share of pre-retirement net earnings (OECD, 2013). These may be regarded as the expected pension outcome for a person entering the labour market and spending their entire working lives under the same set of rules. The net replacement rates used here are based on total mandatory pension schemes, including public schemes and (quasi-)mandatory private schemes.<sup>7</sup> Voluntary contributions are not included.<sup>6</sup> The results of this theoretical outcome measure are presented in Table 6.6, and show that:

5 Individual net pension entitlement, taking into account personal income taxes and social security contributions paid by workers and pensioners.

6 The oecd classifies the second tier of the Dutch pension scheme as a quasi-mandatory private contribution since there is no statutory obligation for employers to offer a pension scheme to their employees. However, because of industrial relations around 90% of employees are covered by the second tier (oecd 2013).

7 An example of a voluntary contribution is the third tier of the Dutch pension scheme.



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Table 6.6 Net pension replacement rates by individual earnings for men (women where different), as % of pre-retirement earnings, 2012

Region	Country	Low Earners (0.5 of average wage)	Average Earners (1.0 of average wage)	High Earners (1.5 of average wage)
Western Europe	Austria	91	90	86
	Belgium	81	62	48
	France	76	71	61
	Germany	55	57	56
	Ireland	76	45	35
	Luxembourg	87	69	67
	Netherlands	105	101	97
	Switzerland	78	75 (73)	49 (48)
	United Kingdom	67	42	31
Northern Europe	Denmark	117	77	67
	Finland	71	63	63
	Norway	91	63	51
	Sweden	69	55	73
Southern Europe	Cyprus	71	75	74
	Greece	93	70	65
	Italy	84	81	83
	Malta	66	70	50
	Portugal	78	68	68
	Spain	79	80	80
Central and Eastern Europe	Bulgaria	108 (100)	108 (100)	85 (80)
	Croatia	.	.	.
	Czech Republic	98	64	51
	Estonia	80	62	55
	Hungary	94	95	96
	Latvia	73	68	65
	Lithuania	101	73	62
	Poland	61	60	59
	Romania	52 (50)	54 (52)	53 (51)
	Slovak Republic	88	85	85
Oceania	Slovenia	64 (67)	63 (67)	61
	Australia	100 (96)	68 (62)	54 (48)
New Zealand	New Zealand	82	43	31
	Canada	91	59	41
Northern America	United States	59	47	43
	Japan	54	41	36
Eastern Asia	Korea	65	45	34

Source: oecd Statistics (ELS Pensions, 2015).



- 1 The future net replacement rate for workers earning the average wage is highest in the Netherlands (101%) and Bulgaria (108% for men and 100% for women), followed by Hungary (95%) and Austria (90%).
- 2 The lowest replacement rates are found in Japan (41%) and the United Kingdom (42%). Other countries with low replacement rates are New Zealand, Ireland, Korea and the United States (all with replacement rates below 50%).
- 3 Southern European countries provide relatively generous pensions for their retirees; their replacement rates are generally high. This is due to the one-sided development of public social security in Southern European countries, which is heavily biased towards pensions and health care (Ferrara 1996, 2010).

Outside the scope of this chapter, but still noteworthy, is that when voluntary contributions are included, the pension replacement rate is much higher (OECD, 2013). This is particularly relevant for some of the Anglo-Saxon countries.

#### *Inequality in net pension replacement rates*

To prevent poverty among low-income workers entering retirement, many countries provide comparatively high replacement rates for low earners. Several countries provide low earners with pensions that are higher than their earnings when working; this is the case in Denmark (117%), Bulgaria (108% for men, 100% for women), the Netherlands (105%), Lithuania (101%) and Australia (100% for men, 96% for women).<sup>8</sup> On the other hand, in eight countries replacement rates are about the same or worse among low earners compared to average earners: Germany, Spain, Cyprus, Malta, Bulgaria, Hungary, Slovenia, Romania. The net replacement rate for workers earning 1.5 times the average wage is highest in the Netherlands (97%) and Hungary (96%). The lowest replacement rates among high earners are found in the United Kingdom and New Zealand (both 31%).

### 6.2.5 Outcome index

For each stage in life, one outcome indicator is used to construct an overall outcome index in order to be able to compare the outcomes of the social security system (Figure 6.2). The social security outcome index is derived from the average standardised scores for contextual poverty (2011)<sup>9</sup>, youth non-employment (2013), long-term unemployment (2013) and pension replacement rates for average earners (2012).<sup>10</sup> The outcome index is constructed as the unweighted average of these four indicators that each have an average of 0 and a standard deviation of 1 (also see chapter 1). The indicators included are contextual poverty, non-employment in youth, long-term unemployment and pension replacement rates for male average earners. The index measures the performance across countries based on the above four outcomes; higher scores correspond with a better

8

This is due to fiscal measures. Pensioners often do not pay social security contributions and receive preferential treatment under the income tax regime (OECD 2013).

9

Countries are grouped into five classes based on the poverty prevalence: 1) extremely high (PL, EE, HU, HR, LT, LV, BG, RO); 2) high (ES, CZ, SK, GR, PT); 3) medium (GB, IE, MT, IT, SI); 4) low (BE, CY, DE, FR, SE, FI, DK); 5) very low (LU, NO, CH, AT, NL).

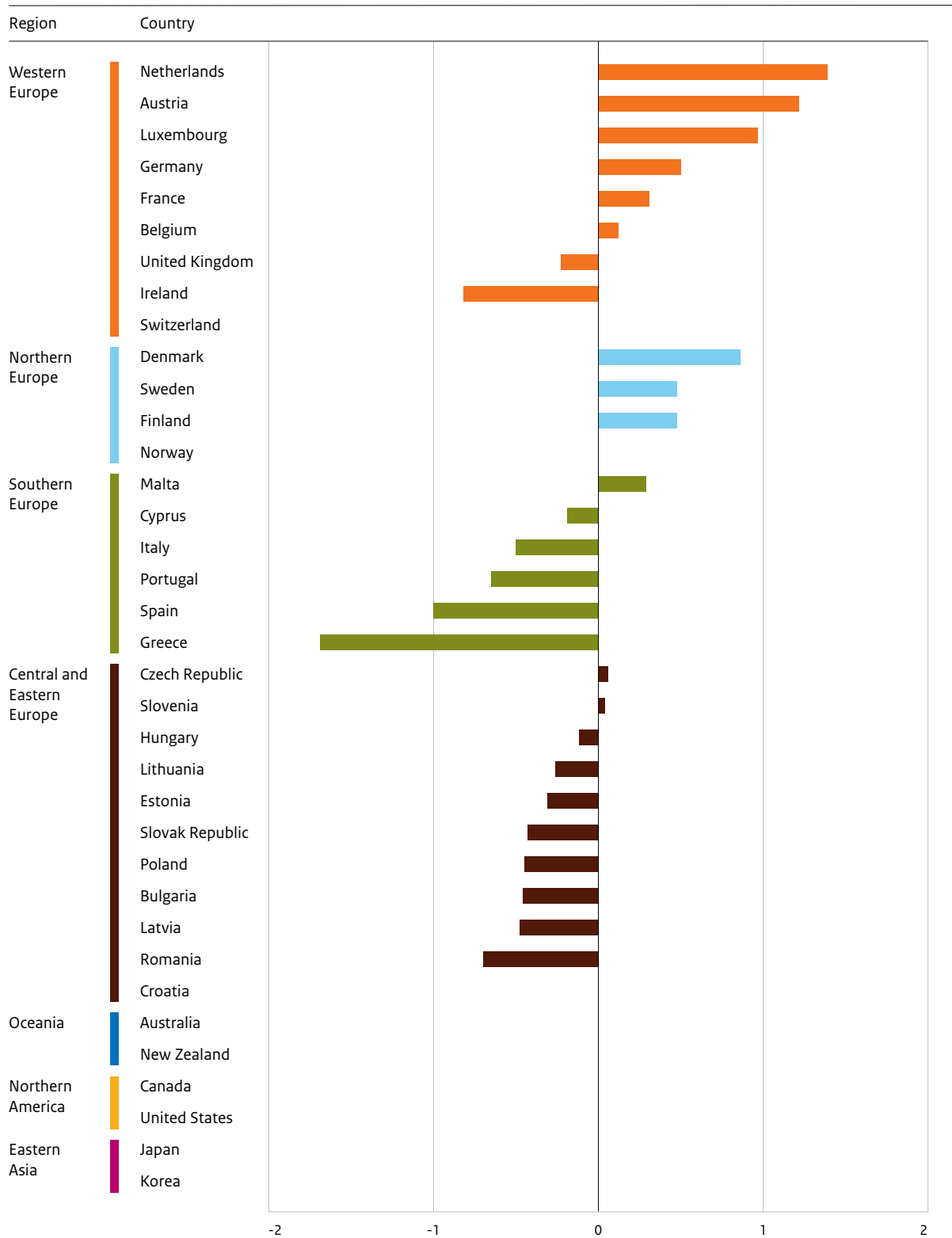
10

We multiply the resulting z-scores for youth non-employment and long-term unemployment by -1 to reverse the scoring into positive scores.



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Figure 6.2 Social security outcome index (in index scores)



Source: Eurostat (young people not in employment, education or training, 2015; Long-term unemployment inactive population, 2015), oecd Statistics (ELS Pensions, 2015), EU-SILC (2012); SCP treatment.





performance. Based on the completeness of the data for each outcome, we derived an index score for all 28 EU Member States, except Croatia.

*Northern and continental Western Europe score best on social security outcomes*  
Overall, the highest scores for the social security outcome index in the 28 EU Member States are obtained for the Netherlands, Austria, Luxembourg and Denmark, followed by the other Northern and Western European countries, except the United Kingdom and Ireland. Both the Netherlands and Austria score remarkably well on pension replacement rates; not only for average earners, but also for low and high earners. The lowest outcome index scores occur in Greece, Spain and Romania. Most Southern and Central and Eastern European countries have low scores on the index, with the positive exceptions of Malta, Slovenia, the Czech Republic and Hungary (around or slightly above the general average).

### 6.3 Inputs

To assess the performance of countries on social security outcomes, insights into the achievement of the goals of social security, as reported in the previous section, are not sufficient: an understanding of the government expenditure on social security is also needed. Countries with a relatively low share of government expenditure on social security and a relatively high score on outcome perform better than countries with a relatively low share of government expenditure and a relatively low outcome score. However, how well countries perform should not be based solely on the relationship between public expenditure and the outcome scores. Employers and employees also contribute to social security, and thus influence the outcome scores on social security. Their contribution can be either mandatory or voluntary. Whether mandatory contributions by employers and employees are classified as government expenditure depends on who controls the financial flows: the government or private parties (see also A6.2 in the appendix to this chapter on how public social expenditure is defined).<sup>10</sup> To obtain a more complete picture of the performance of the different countries, in this section we present both public and private expenditure on social security. We have to rely on different data sources for private social security expenditure, and are therefore not able to include information on all selected countries.

#### 6.3.1 Public expenditure on social security

Table 6.7 presents the total government expenditure on social security for the period 1995-2012. Expenditure is shown as a percentage of GDP. In the Northern European countries, government spending on social protection as a share of GDP is high. In 2012 the share is highest in Denmark (25%), followed by Finland, where the government also spent 25% of GDP on social

<sup>10</sup> To give an example, the financial management of the old age risk in AU, CA, DK, NL, SE and GB is not in the hands of the government. The outlays on old age risks in these countries therefore do not form part of the public expenditure on social security.



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Table 6.7 Total government expenditure on social protection, as % of GDP, 1995-2012

For reading instructions see page 49

Region	Country	1995	2000	2005	2010	2012	2012 <sup>a</sup>	2012 vs 1995
Western Europe	France	22	▼ -1 ▲ +1 ▲ +2	0	24			
	Austria	22	▼ -1	0 ▲ +1	▼ -1	21		
	Belgium	18	▼ -1 ▲ +1 ▲ +1	▲ +1	20			
	Germany	21	0	0	0 ▼ -2	19		
	Luxembourg	17	▼ -1 ▲ +1 ▲ +2	0	19			
	Netherlands	19	▼ -3	0 ▲ +1	▲ +1	18		
	United Kingdom	17	▼ -2 ▲ +1 ▲ +2	0	18			
	Ireland	14	▼ -5 ▲ +2 ▲ +6	▼ -1	16			
Switzerland	.	.	14 ▼ -1	0	13			
Northern Europe	Denmark	26	▼ -3	0 ▲ +2	0	25		
	Finland	26	▼ -6 ▲ +1 ▲ +3	▲ +1	25			
	Sweden	27	▼ -4	0 ▼ -1	▼ -1	21		
	Norway	18	▼ -2	0 ▲ +2	▼ -1	17		
Southern Europe	Greece	17	0 ▼ -2	▲ +4	▲ +2	21		
	Italy	18	▼ -1	▲ +1 ▲ +3	0	21		
	Portugal	12	0 ▲ +3	▲ +3	▲ +1	19		
	Spain	15	▼ -2	0 ▲ +4	▲ +1	18		
	Malta	12	0 ▲ +2	0	▲ +1	15		
	Cyprus	7	▲ +1	▲ +3	▲ +1	0	12	
Central and Eastern Europe	Slovenia	.	17	0 ▲ +2	0	19		
	Hungary	18	▼ -3	▲ +2	▲ +1	▼ -1	17	
	Poland	.	.	17	0 ▼ -1	16		
	Czech Republic	11	▲ +2	▼ -1	▲ +2	0	14	
	Romania	11	0	0	▲ +4	▼ -1	14	
	Bulgaria	.	13	▼ -2	▲ +3	▼ -1	13	
	Croatia	.	.	.	.	13		
	Estonia	12	▼ -1	▼ -1	▲ +5	▼ -2	13	
	Lithuania	10	▲ +3	▼ -3	▲ +4	▼ -2	12	
	Slovak Republic	13	▲ +2	▼ -2	▼ -1	0	12	
Oceania	Australia <sup>b</sup>	12	0	▼ -1	0	▲ +1	12	
	New Zealand <sup>b</sup>	13	0	▼ -2	▲ +2	▼ -1	12	
Northern America	United States <sup>b</sup>	9	0	0	▲ +2	0	11	
	Canada <sup>b</sup>	12	▼ -2	0	▲ +1	▼ -1	10	
Eastern Asia	Japan <sup>b</sup>	9	▲ +2	▲ +1	▲ +3	0	15	
	Korea <sup>b</sup>	2	▲ +1	▲ +1	▲ +1	0	5	

a The data for the non-European countries relate to 2011. b In the OECD data the percentage of GDP spend on health is excluded from the percentage of the public social expenditure reported in this table. Source: Eurostat (COFOG) & OECD (SOXC for non-European countries).

▲ largest increase  
▼ largest decrease

2012  
1995



protection. France also devotes a large share of government expenditure to social protection (24% in 2012). In Central and Eastern Europe the share of GDP spent on social protection is low, typically 15%. Other European countries with comparatively low expenditure levels are Cyprus (12%), Switzerland (13%) and Malta (15%). The same applies for the non-European countries. In South Korea, especially, public spending on social protection makes up a small percentage of GDP. However, due to different data sources we have to be careful in comparing expenditure in the non-European countries with that in the European countries.

Over the period 2005-2012 most European governments are confronted with an increasing share of GDP spent on social expenditures. During this period, countries had to face the repercussions of the economic and financial crisis that began in 2008 –although the impact of the crisis differed between countries. Most countries were also having to deal with an ageing population. As a result, the growth in the share of government expenditure on social protection as a percentage of GDP is quite strong in some countries. Greece, for instance, spent 15% of GDP on social protection in 2005, and this had risen to 21% by 2012. This is one of the countries most severely affected by the economic and financial crisis. Other countries that experienced a relatively large increase are Ireland and Spain, with an annual increase of 6.0% and 4.6%, respectively, between 2005 and 2012. Only a small number of countries saw a decrease in the share of government spending devoted to social protection, namely Germany, Sweden and the Slovak Republic.

### 6.3.2 Public expenditure on different social risks

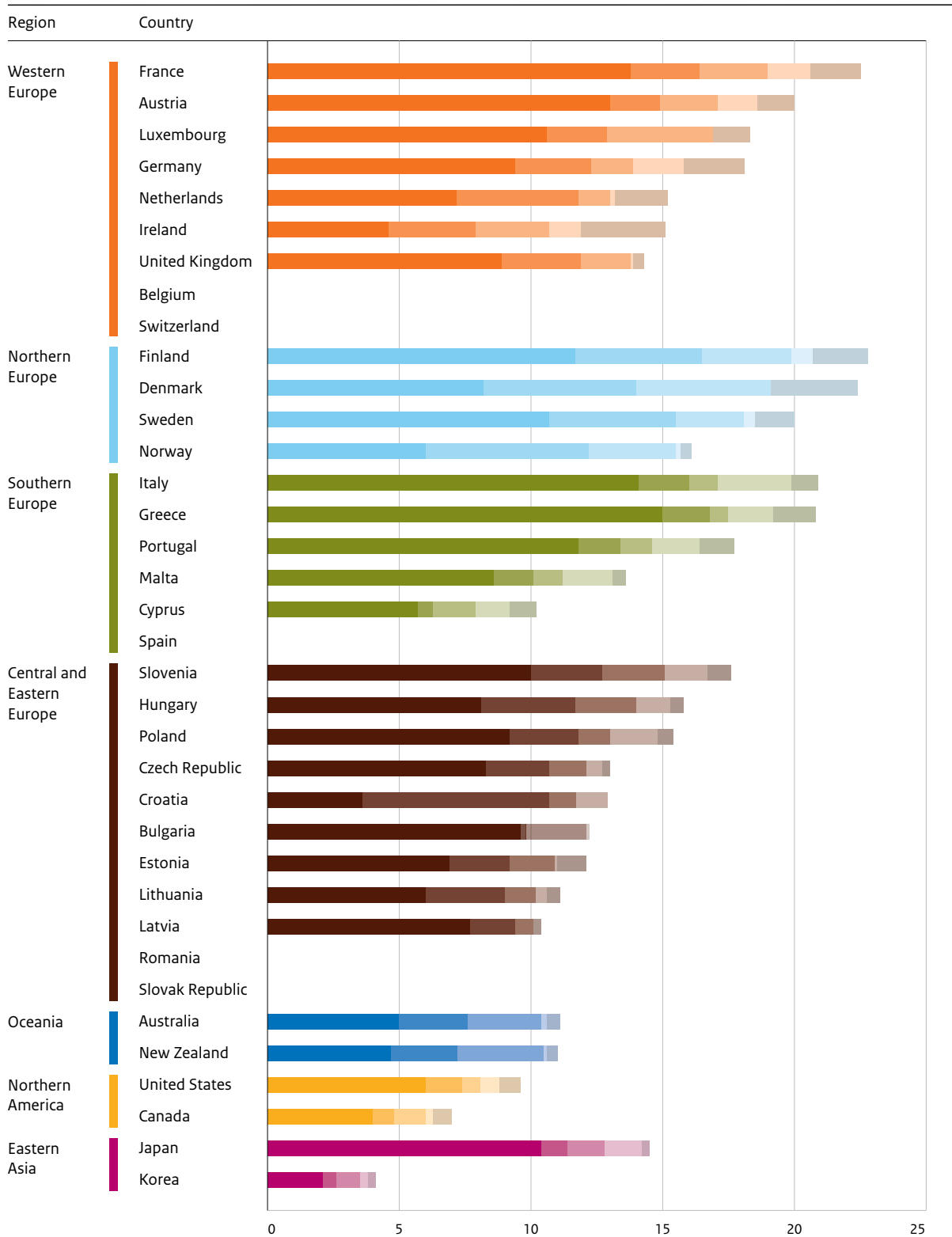
Figure 6.3 shows the composition of social security expenditure in 2012. It can be clearly seen that in almost all countries, the largest share in total expenditure is taken by old age benefits; on average, countries spent half their social security budget on pension benefits. The majority of countries in Southern Europe reserve a larger share of government expenditure for pension benefits, with approximately two-thirds of the social security budget set aside for covering the risk of old age. As explained in Section 6.1.2, this is due to their ‘late developer’ status and the one-sided development of their social security systems (slanted towards pensions and health care).

For most countries, the next largest share of total spending on social protection is taken by sickness and disability benefits. On average, government expenditure on these benefits accounts for almost a fifth of total government spending on social security. In a few countries, the next largest share is related to expenditure on family and children benefits; on average, governments spend just over 10% of the total social protection budget on these benefits. Survivors’ benefits make up around 5% of total public social security expenditure on average, as do unemployment benefits.



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Figure 6.3 Government expenditure on social protection by risk, as % of GDP, in 2012<sup>a,b</sup>



a The data for the non-European countries relate to 2011. b Total percentages in Table 6.7 and Figure 6.3 do not match. This is because not all social risks are included in Figure 6.3. The figure covers more than 90% on average of total public social expenditure (reported in Table 6.7). Source: Eurostat (cofoG) & OECD (soCX for non-European countries).

old age sickness & disability family & children survivors unemployment



### 6.3.3 Public versus private expenditure

Private social expenditure may have either a mandatory or voluntary character. Expenditure prescribed by legislation but operated through the private sector is mandatory private expenditure, e.g. the legal obligation on employers to pay direct sick leave payments to employees. Voluntary private expenditure takes the form of privately operated programmes involving the redistribution of resources across households or collective (often employment-related) support arrangements, such as pensions<sup>11</sup> and childcare support. However, a private pension insurance with actuarially fair contributions that involves no redistribution across households is not considered to be a voluntary private expense.<sup>12, 13</sup>

Figure 6.4 shows the composition of total social expenditure by source of finance for 2011. On average, around 85% of the social expenditure is public, about 5% is mandatory private and just under 10% is voluntary private. To the extent that we have data on the total social expenditure in Central and Eastern Europe, these countries mainly provide protection against the social risk through public expenditure. In Northern and Southern Europe, government spending accounts for close to 90% of total social expenditure. In Western Europe, the situation is more mixed. In some countries, such as the Netherlands and the United Kingdom, the government covers around 70% of the total social budget. Of the remaining 30%, a relatively small part consists of mandatory private funding; the majority involves voluntary private contributions. The government covers a smaller share of total social expenditure in these countries through the funding of the pension system; see also note 10 and A6.2 in the appendix to this chapter. In Switzerland, the government accounts for less than 70% of the total social security budget. The remainder is mostly mandatory private. In the other Western European countries, 90% or more of the social security budget is made up of government expenditure. In the countries in the rest of the developed world, the government share in total social expenditure is less than 85% (with the exception of New Zealand). Korea has the lowest share, at just over 65%.

## 6.4 Outputs

Through its expenditure, the public sector delivers goods and services. In the case of social security, the public sector mostly provides benefits. In this section we look at the outputs of the social security sector by examining the following indicators: (1) the percentage of pension beneficiaries within the population above retirement age, i.e. the pension coverage, and (2) the percentage of unemployed persons in receipt of unemployment benefit.<sup>14</sup>

<sup>11</sup> The second tier in the Dutch pension system is an example of such voluntary private social expenditure.

<sup>12</sup> An example is the third tier in the Dutch pension system.

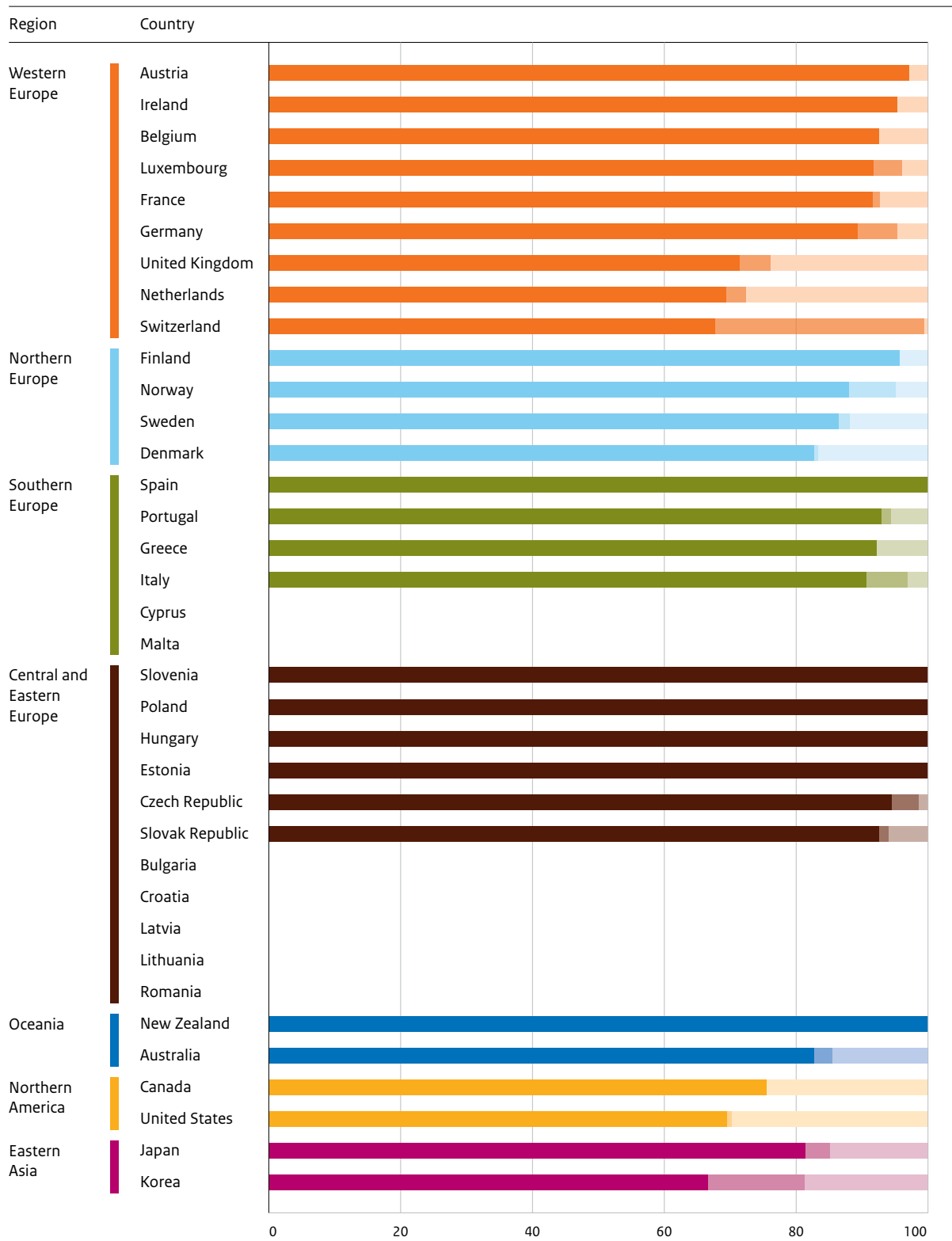
<sup>13</sup> The OECD's definition of private mandatory and private voluntary social expenditure differs from the OECD's classification of private mandatory and private voluntary pension schemes (presented in Section 6.2.4). In *Pensions at a Glance* (OECD 2013), the OECD defines the Dutch second tier as quasi-mandatory private and the third tier as voluntary private. In the OECD SOCX-database, the Dutch second tier is a voluntary private social expenditure and because the third tier involves no redistribution it is not classified as social expenditure at all.

<sup>14</sup> Due to the data limitations, we are only able to report on these two indicators of social security output.



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Figure 6.4 Composition of public and private social expenditure, as a share of total social expenditure, 2011<sup>a</sup>



a Since the data on public and private social expenditures in this figure are drawn from a different data source than the information presented in Table 6.7, the underlying percentages of GDP spent on public social expenditures in this figure do not exactly match the percentages reported in Figure Table 6.7. Source: oecd (socx).

public mandatory private voluntary private



### 6.4.1 The coverage of pension benefits

There are several options for mitigating the consequences of loss of income for workers as they grow older. Retirees may receive a 'regular' old age benefit, but also a disability pension, a partial pension or a survivors' pension. Furthermore, older workers may retire early due to a reduced capacity to work or for labour market reasons. In Table 6.8 we focus solely on the regular old age benefits provided in 2010, the most recent year for which we have data. The statutory retirement age<sup>15</sup> varies by country and sometimes also by gender.<sup>16</sup> Table 6.8 shows clearly that almost all men who have reached retirement age are in receipt of pension benefit. In several countries, women have lower levels of pension coverage than men. This is most likely related to the type of pension programme; see Table 6.9. Pensions may be funded through a contributory scheme or a non-contributory scheme. In contributory schemes the contributions of employees determine their entitlement to benefits. Non-contributory schemes require no direct contribution as a condition of entitlement to receive benefits. Where an old age pension scheme has a mainly contributory basis, women are worse off. This is because over their whole working lives, women are most often the ones who interrupt their careers to look after others (children or parents), and who thus face a higher risk of being in precarious employment, thus affecting their accrual of pension rights.

### 6.4.2 Number of people in receipt of unemployment benefit

To examine the extent to which unemployed persons are protected against the financial consequences of job loss, we look at the coverage of the unemployment benefit scheme (ILO 2010; ILO 2014). The coverage represents the number of protected persons receiving unemployment benefit as a percentage of those currently unemployed (ILO 2014: 34).

According to the ILO (2014), unemployment schemes with periodic cash benefits are organised in most countries through (public mandatory) social insurance; see Table A6.2 in the appendix to this chapter. Contributions are paid by employers or shared between employers and employees. Sometimes the contributory social insurance is combined with a means-tested scheme (potentially covering all those who pass the required income or means test). Only a few countries have a non-contributory unemployment benefit scheme, for example Australia and New-Zealand.

The coverage of unemployment benefits is especially high in Western European countries (Figure 6.5). In many of these countries, more than 60% of the unemployed receive unemployment benefit; in Austria, it is even more than 90%. Germany and Ireland also have high coverage, of 85% or more. Other countries with high effective coverage are Malta (almost 90%) and Denmark (almost 80%).

<sup>15</sup> The statutory retirement age is the age at which old-age benefits become payable pursuant to legislation or contract.

<sup>16</sup> Gender is not the only reason why the retirement age might differ within a country. It could also vary by sector of activity or by occupation.



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Table 6.8 Share of population above retirement in receipt of old age pension benefit, 2010

Region	Country	Retirement age	Men	Woman
Western Europe	Austria	65+ Men   60+ Women	94	78
	Belgium	65+	100	68
	France	60+	100	100
	Germany	65+	100	100
	Ireland	65+	100	66
	Luxembourg	65+	100	56
	Netherlands	65+	100	100
	Switzerland	65+ Men   64+ Women	100	100
	United Kingdom	65+ Men   60+ Women	100	99
Northern Europe	Denmark <sup>a</sup>	65+	100	100
	Finland	65+	100	100
	Norway	67+	100	100
	Sweden	65+	100	100
Southern Europe	Cyprus	65+	100	57
	Greece	65+ Men   60+ Women	100	55
	Italy	65+ Men   60+ Women	100	69
	Malta	61+ Men   60+ Women	98	32
	Portugal	65+	100	100
	Spain	65+	97	47
Central and Eastern Europe	Bulgaria	63+ Men   60+ Women	99	96
	Croatia	65+ Men   60+ Women	85	44
	Czech Republic	62.2+ Men   60.7+ Women	100	100
	Estonia <sup>a</sup>	63+ Men   61+ Women	99	98
	Hungary	62+	98	88
	Latvia	62.5+ Men   60+ Women	100	100
	Lithuania	62+	100	100
	Poland <sup>b</sup>	65+ Men   60+ Women	100	95
	Romania	63.75+ Men   58.75+ Women	100	88
	Slovak Republic	62+	100	100
Slovenia	63+ Men   61+ Women	100	86	
Oceania	Australia	65+ Men   64+ Women	76	88
	New Zealand <sup>c</sup>	65+	100	97
Northern America	Canada	65+		
	United States	65+	95	91
Eastern Asia	Japan	65+		
	Korea	60+		

a 2011, b 2009, c 2012. Source: ILO (2014).





## SOCIAL SECURITY

Table 6.9 Total pension coverage and type of pension programme, 2010

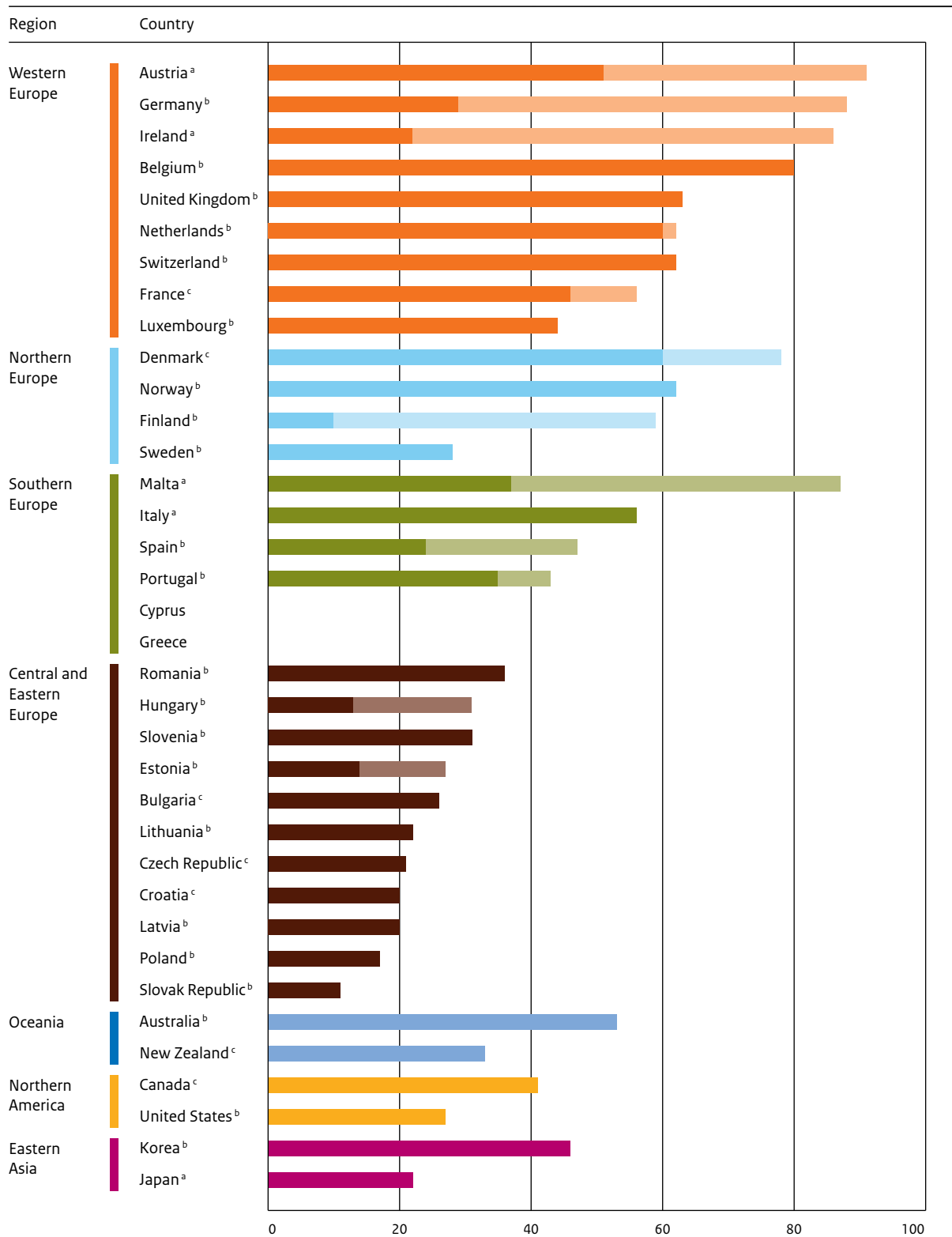
Region	Country	Total	Old age pension programme	Share by type of programme	
				Contributory <sup>e</sup>	Non-contributory
Western Europe	Austria	100	Social insurance	94	
	Belgium	85	Social insurance and means-tested non-contributory pension	80	
	France	100	Social insurance and means-tested non-contributory pension	95	
	Germany	100	Social insurance	.	
	Ireland	90.5	Social insurance and means-tested non-contributory pension	71.3	
	Luxembourg	90	Social insurance	.	
	Netherlands	100	Social insurance	.	
	Switzerland	100	Social insurance and mandatory occupational pension and pensions-tested non-contributory pension	.	
	United Kingdom	100	Social insurance and means-tested non-contributory pension	76	
Northern Europe	Denmark <sup>a</sup>	100	Social insurance, universal	.	100
	Finland	100	Mandatory occupational pension and means-tested noncontributory pension	47.5	
	Norway	100	Social insurance (old system and nbc)	.	
	Sweden	100	Social insurance, nbc and mandatory individual account and pensions-tested non-contributory pension	52	
Southern Europe	Cyprus	85	Social insurance and pension-tested non-contributory pension	72	
	Greece	77	Social insurance and means-tested non-contributory pension	60	
	Italy	81	Social insurance (phasing out) nbc and means-tested non-contributory pension	75	
	Malta	60.5	Social insurance and means-tested non-contributory pension	55.3	
	Portugal	100	Social insurance and means-tested non-contributory pension	.	
	Spain	68	Social insurance and means-tested non-contributory pension	65	
Central and Eastern Europe	Bulgaria	96.9	Social insurance, mandatory individual account and means-tested non-contributory pension	96.5	
	Croatia	58	Social insurance and mandatory individual account	.	
	Czech Republic	100	Social insurance	.	
	Estonia <sup>a</sup>	98	Social insurance and mandatory individual account and pension-tested non-contributory pension	96	
	Hungary	91.4	Social insurance and mandatory (> voluntary) individual account and means-tested non-contributory pension	91.1	
	Latvia	100	Social insurance (nbc) and pension-tested non-contributory pension	96	
	Lithuania	100	Social insurance and pension-tested non-contributory pension	99.8	
	Poland <sup>b</sup>	97	Social insurance (nbc)	94	
	Romania	98	Social insurance and individual account	.	
	Slovak Republic	100	Social insurance and individual account	99.5	
Oceania	Australia	83	Mandatory occupational pension system and means-tested non-contributory pension	.	
	New Zealand <sup>c</sup>	98	Universal non-contributory pension with means-tested top-up	.	
Northern America	Canada	97	Social insurance and universal non-contributory pension (with tax recovery from high earners)	2	
	United States	93	Social insurance and means-tested non-contributory pension	88	
Eastern Asia	Japan <sup>d</sup>	80	Social insurance (flat rate benefit and earnings related benefit)	.	
	Korea	78	Social insurance and means-tested non-contributory pension	.	

nbc: non-financial defined contribution. a 2011; b 2009; c 2012; d 2008, e For contributory schemes, contributions made by protected persons directly determine the entitlement to benefits. Non-contributory schemes, including non-means-tested and means-tested schemes, require no direct contribution from beneficiaries or their employers as a condition of entitlement to receive the relevant benefits. A means test is used to assess whether the individual's own resources and/or assets are below a defined threshold and determine whether the applicant is eligible for any benefit at all, and if so at what level. Source: ILO (2011).



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Figure 6.5 Unemployed persons actually in receipt of benefits (%), 2011/2012/2013



a 2011; b 2012; c 2013; d For contributory schemes, contributions made by protected persons directly determine entitlement to benefits. Non-contributory schemes, including non-means-tested and means-tested schemes, require no direct contribution from beneficiaries or their employers as a condition of the entitlement to receive the relevant benefits. A means test is used to assess whether the individual's own resources (income and/or assets) are below a defined threshold and determine whether the applicant is eligible for any benefit at all, and if so at what level. Source: ILO.

■ contributory<sup>d</sup> ■ non-contributory<sup>d</sup>



No countries have 100% coverage. The income support provided by unemployment benefit is meant to be temporary; it covers a limited time period. Furthermore, entitlement to unemployment benefit is mostly restricted to employees in formal employment; in a very limited number of countries, the self-employed and other categories of employed persons with a more independent status than waged and salaried workers are also entitled to unemployment benefits (ILO 2010; ILO 2014). Not all beneficiaries have found a new job by the time they reach the end of their entitlement to contributory unemployment benefit. The long-term unemployed are no longer entitled to unemployment benefit, as their claim has expired. Due to the contributory nature of most unemployment benefit schemes, new entrants to the labour market also often have no entitlement to benefits. In calculating the coverage of the unemployment benefit scheme, the 'currently unemployed' include those who are long-term unemployed or who are new entrants to the labour market. Long-term unemployed persons and new entrants to the labour market who are no longer or not entitled to unemployment benefit may qualify for general social assistance benefits (ILO 2014).

Due to data limitations, the analysis of the differences between countries in the coverage of the protection against the risk of becoming unemployed is limited to schemes that provide income support. It does not take into account other related and important programmes (such as sheltered employment, employment guarantee schemes, training and other employability-enhancing measures, and other 'active' labour market policies). Furthermore, it is impossible to calculate estimates of the coverage of general social assistance since there are no regularly published data for a sufficient number of countries on the numbers of general social assistance benefit recipients.

## 6.5 Explaining the differences

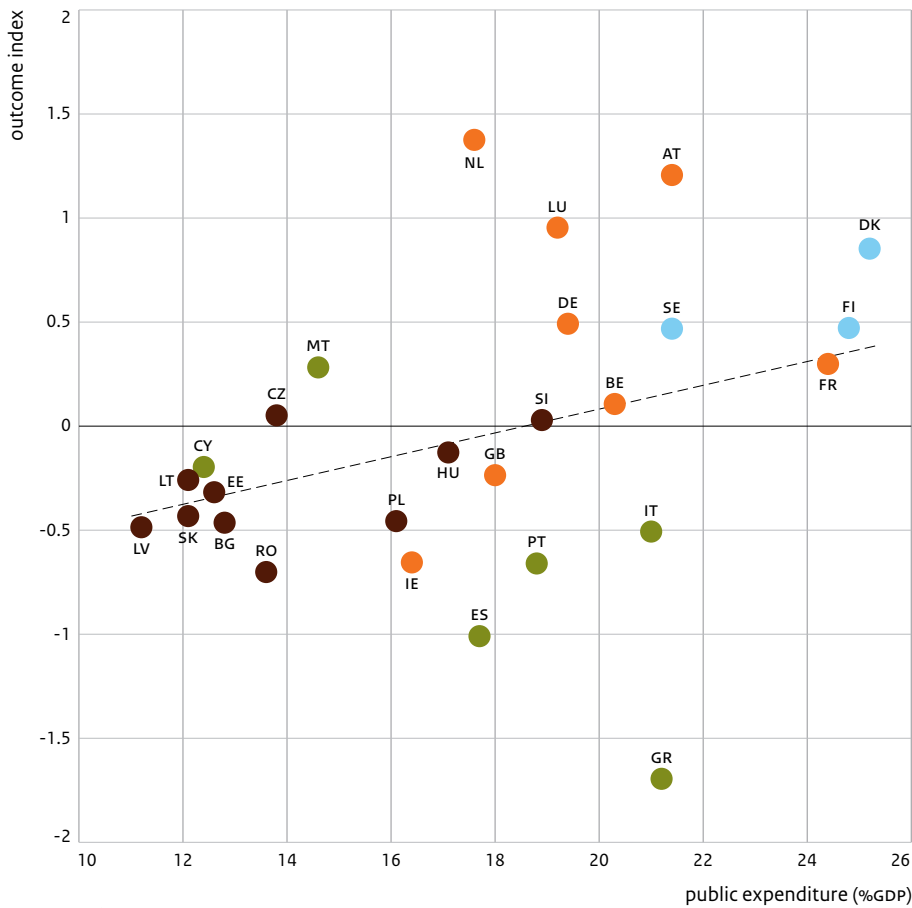
*Government expenditure correlates weakly with social security outcomes*

The number of people who are unemployed or live in poverty is relatively low in Northern and Western Europe. In Southern and Central and Eastern Europe, the share is larger. The countries in this part of Europe spend a smaller share of their GDP on social security than the countries in Northern and Western Europe. The latter countries have extensive social security schemes, and this is reflected in the low unemployment and poverty rates we found in this chapter. In Southern Europe, the social security system covers a limited number of social risks but is well developed as regards pensions. This could explain the good performance of the Southern European countries, in addition to the Northern and Western European countries, on pension replacement rates. Generous benefits are provided for workers entering retirement.



Based on the above comparison of regions, it would seem that spending on social security pays off; in that it results in lower levels of unemployment and poverty. However, the outcome performance within regions is mixed. Figure 6.6 shows that there is no significant correlation between the input, measured as public expenditure as a percentage of GDP (as presented earlier in Table 6.7), and the outcome index (as presented in Table 6.2). The absence of an association between outcomes and inputs could be partly due to cross-country differences in private contributions, which were not included in the input indicator.

Figure 6.6 Government expenditure on social security (% GDP) versus the outcome index



See Figure 6.2 and Table 6.7 for source information, scp treatment.



## 6.6 Conclusion

Social security is a basic human right. Its goals are to provide (financial) protection against social risks and to combat social exclusion and poverty. Governments combat poverty by providing (temporary) benefits to help inhabitants overcome the immediate financial consequences of social risks.

The outcome performance is highest in Northern and Western Europe, with less poverty, less non-employment among young people, and less long-term unemployment. However, there are also countries in Southern Europe and Central and Eastern Europe that perform relatively well, such as Malta, Slovenia, the Czech Republic and Hungary.

The countries that are relatively successful in combating poverty and unemployment are also the countries that spend a comparatively large share of GDP on social security. Northern European countries, in particular, devote a large share of GDP to protecting their citizens against social risks; most of these countries spent more than 20% of GDP in 2012. The majority of Western European countries also devote a comparable proportion of GDP to providing protection against social risks. Switzerland forms an exception: it is one of the few countries where public expenditure accounts for (far) less than 90% of the total budget spent on social security.

Overall, no significant correlation was found between public spending and outcome performance. Countries with a relatively low outcome performance are not per se countries with comparatively low expenditure on social protection. Southern Europe has a relatively large share of people in poverty and unemployment, but devotes a proportion of GDP to social security (mostly aimed at pensions) that is comparable to that of Northern and Western Europe.

When looking at the development of the outcome performance over recent years, the impact of the financial crisis seems evident. The variation in relative poverty across the EU has narrowed due to the convergence of income inequality. Countries with initially lower levels of income inequality have seen higher income disparities. Furthermore, the countries that suffered most from the crisis show the highest increases in non-employment in young people, and in long-term unemployment.

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# Public administration

Evert Pommer and Pepijn van Houwelingen

7

## 7.1 Why good governance?

The quality of governance is an important factor of economic growth (Aubyn 2007). This relationship turns out to be causal: good governance – defined as the “political and institutional processes and outcomes that are deemed necessary to achieve the goals of development” (United Nations 2014) – matters in the long run but high economic performance does not guarantee good governance (Kaufmann et al. 2008). Moreover, improvements in governance will not occur spontaneously, and interventions to improve governance have to be organised. A well-functioning public administration also makes people happier (Oostveen 2015). It is therefore not surprising that the European Commission has taken major steps to improve public administration. This desired modernisation proceeds along two lines: strengthening e-government, and simplifying regulations and procedures for business and citizens (Andor 2014).

In the 2014 European competitiveness report, public administration has an important role in promoting economic growth by generating country-specific scoreboards on seven topics in the fields of governance, public capacities and business-friendliness. Moreover, effective governance requires clear missions, shared goals and well-coordinated collective action and measures, and monitors processes and results (Perry and Christensen, 2015).

What is quality of government? According to Rothstein and Teorell, the key concept underlying quality of government is *impartiality in the execution of public authority* (Rothstein and Teorell 2008: 166). It is the responsibility of the government bureaucracy to implement and execute the law in a manner that is free of fear or favour and that is fair and impartial for all. We will therefore focus our attention in this chapter on that part of government that is responsible for making and implementing government policy: public administration.

## 7.2 Definition and functions of public administration

Public administration refers to all public activities directed at policy-making, legislation and management of the public sector, as well as civil services directed towards the legal participation of citizens in society. In the ‘Britannica’, public administration is defined as the implementation of government policies, and the body of public administrators is called the civil service. Other bodies serving the state directly, such as the military, the judiciary and the police, are generally not considered as part of the



Table 7.1 Outcome, system, input and trust indicators used in this chapter and corresponding data sources

Level	Indicators	Sources
Outcome	Good Governance Indicators	World Bank
	e-Governance	UN, EIU, Brown
	Rule of Law index	World Justice Project
	Business-friendliness	World Bank
System	Economic performance	World Bank
	Level of decentralisation	Eurostat
	Structure of civil service salaries	OECD
	Intensity of ICT expenditure	OECD
	Spending on public administration and tax administration	World Bank, IOTA
	Quality of the public administration	Galanti and Dahlström et al.
	Traditional versus modern bureaucracy	Demmke and Moilanen
	Freedom of the press	Reporters Without Borders
Input	Spending on public administration and tax administration	Eurostat (COFOG)
	Personnel working in public administration and other public entities	OECD
Trust	Good governance and trust in the civil service	World Bank / EVS

public administration, nor are bodies responsible for external affairs and diplomatic duties. Activities producing individual services for citizens, such as health care and education, do not belong to the domain of public administration.

#### *Indicators for inputs, outputs and outcomes*

In this chapter we use different indicators for the outcomes, output and inputs of public administration activities. Because output in public administration is an elusive concept – public administration, just like the army (during peacetime), for example, does not produce any measurable outcomes – we do not use output but basic system characteristics of public administrations to explain differences in performance. Table 7.1 summarises the different indicators used in this chapter.

Outcome is measured in general terms, related to the activities of the public administration. In contrast to outcome, system characteristics are measured in concrete terms relating to the civil service task of public administration, although we acknowledge that there is some overlap between our outcome and system characteristics. These system characteristics can be seen as the crucial elements that turn inputs into outcomes in our heuristic model (Chapter 1). Because output, as stated, is an elusive concept as far as public administration is concerned, system characteristics can be seen as operationalisations that most closely resemble, for

public administration, ‘outputs’ in our heuristic model. Input indicators include personnel working in public administration and expenditure on public administration. The reasons for selecting these indicators will be explained in the different sections of this chapter.

*What is the goal of this chapter?*

The goal of this chapter is fourfold. First we will provide indicators that measure the performance (outcome) of public administration with regard to our selected countries and, if possible, over a number of years. Second, we will provide information with regard to the amount of personnel and money (inputs) used by the public administration in our selected countries. Third, we will try to explain differences in outcomes by looking at a number of system characteristics. Finally we will look at public administration from the citizens’ perspective (trust).

*Structure of the chapter*

This chapter is structured as follows. In Section 7.3 we introduce the outcome indicators and compare countries’ performance. In Section 7.4 we describe the input measures and document how much countries spend (in terms of money and manpower) on public administration. Section 7.5 discusses public administration system characteristics and their (possible) effect on different kinds of outcome measures. Section 7.6 introduces the citizens’ perspective on public administration. Section 7.7 presents the conclusions.

### 7.2.1 Demarcation of public administration

In practice, the demarcation line between public administration and other public sector activities is not easy to draw. Consequently, most definitions of ‘public administration’ are rather vague and general. Chandler (2014) describes ‘public administration’ as “the study of the development and maintenance of policy by members of governments, public agencies and public sector employees and the practice of implementing the authoritative decisions they have made.” According to one of the oldest and most frequently cited definitions (Waldo 1968: 449), public administration is “... the management of men and materials in the accomplishment of the purposes of the state.” Public administration is engaged in bureaucratic activities by central or local government. Broadly, we can distinguish between two main activities: elaboration of primary legislation and delivery of public services. In this approach, public administration regulates the relationship between the state and society. Laws are translated into administrative rules and services are delivered to citizens to enable them to participate in society (Peters and Pierre, 2012). Looking at studies of public administration, a wide range of topics emerges.



## 7.2.2 Measuring outcomes of public administration

It is quite difficult to measure the outcome of public administration. First, solid comparative evidence is not available to compare public sectors across countries. For the government in general or the bureaucracy, in other words ‘public administration’, suitable comparative information is even more scarce (Van de Walle, 2008: 3). Second, there are all kinds of problems in reaching a definition. An apparently simple question such as, ‘What is government’ cannot be answered. How does one define ‘government’? How are boundaries drawn? Is an NGO that is mostly funded by the government a part of the government or not? Is a compulsory national health insurance system an example of public or private funding? And so it goes on. Third, competing values make it difficult or even impossible to identify clear, measurable and uncontroversial outcomes for public administration: “*there is no best way of organizing public administration so that it is always most helpful for citizens*” (Olsen, 2004: 69). Fourth, much of what the public administration does is focused on the ‘elaboration of primary legislation’. But in this study we are primarily interested in outcomes from the perspective of citizens. Citizens in their daily life only observe the provision of public services, such as issuing various licences, passports and the collection of taxes. Following Van de Walle (2008), our approach in measuring public performance can therefore at best only be ‘good enough’.

One possibility for evaluating outcomes of public administration is to look at the *quality* of the public administration processes. The assumption is that these processes are exemplary for the entire public administration within a country, even though these processes only cover a specific part of public administration. A closely related concept is ‘quality of government’ (QoG). Quality of government is broken down by Rothstein et al. (2013) into four pillars: corruption, bureaucratic effectiveness, rule of law and strength of democratic institutions. A related option is to look at the *quality of its bureaucracy*. The idea is that a high-quality bureaucracy will function better, be more efficient and will therefore result in better outcomes in society. The quality and amount of personnel working in public administration may reflect the quality of the bureaucracy.

A second option for measuring outcomes of public administration is to look at *aspects of good governance*. Although there is no universal definition of good governance, and some authors argue that the concept itself is essentially political (Van de Walle, 2008: 8), “there is a significant degree of consensus that good governance relates to political and institutional processes and outcomes that are deemed necessary to achieve the goals of development” (United Nations 2014). According the World Bank, good governance is generally defined in terms of the mechanisms needed to promote it. Good governance has thus been associated with democracy and civil rights, with transparency, with the rule of law, and with efficient public services. Which aspects are part of good governance is more open



to debate. Different dimensions have been used to formulate several codes of good governance (World Bank,<sup>1</sup> United Nations,<sup>2</sup> the Council of Europe<sup>3</sup> and the Dutch Ministry of the Interior and Kingdom Relations<sup>4</sup>).

A third option would be to look at the *fundamentals of a well-functioning society*. Several studies have shown that the (economic) performance of countries is strongly related to the presence (or absence) of strong and independent institutions, such as an independent judiciary, consumer protection agencies, an independent central bank and independent regulators (Knack and Keefer 1995; Acemoglu and Robinson 2012). Acemoglu and Robinson (2012) argue that sustainable economic growth can only be achieved if both inclusive economic institutions and inclusive political institutions are present. Examples of inclusive economic institutions are secure property rights, law and order, business-friendliness and open access to education (Acemoglu 2012). Inclusive political institutions allow for broad participation, impose constraints and checks on politicians and secure the rule of law. However, inclusiveness remains a rather elusive concept. The thesis that inclusive (democratic) political institutions are a prerequisite for sustainable economic growth has come in for particular criticism recently (Fukuyama 2012; Crook 2012; Boldrin, Levine and Modica 2012).

The most fruitful approach from a practical perspective, considering the scope and quality of data available, seems to be to look at dimensions of good governance. The Good Governance Indicators of the World Bank (wgi) offer a good starting point for measuring good governance, as they are available for all countries for an extensive time period. Three further indicators will be added to these indicators, measuring specific aspects of good governance, which are not (adequately) covered by wgi. These specific aspects are the level of e-governance, representing the social service component of good governance, the functioning of the rule of law, representing the legislative component of good governance, and the business-friendliness of public administration, and representing the economic component of good governance. These three indicators add value to the wgi. Despite its shortcomings, the overall wgi index is the most complete indicator of public administration performance. The other options can be used to help us explain differences in the performance of public administrations. Finally, it is important to note that government tasks such as the development of public policy or oversight and inspection are not (directly) reflected in our outcome measures.

### 7.3 Outcomes of public administration performance

Measuring outcomes of public administration can thus be approached in several ways. Unfortunately, this means that there is no standardised way of measuring the quality of public administration. Outcome measures are

1 Kaufman et al. (2008)

2 UNESCAP (2007)

3 Pratchett and Lowndes (2004)

4 Ministerie van BZK (2009)



Table 7.2 Elements of various codes of (and instruments to measure) good governance

World Bank	United Nations	Dutch Ministry of the Interior	Council of Europe
Voice and accountability	Transparency	Appropriate contact with the public	Parliamentary democracy
Control of corruption	Responsiveness	Openness and integrity	Transparency, responsiveness and accountability
Rule of law	Participation	Participation	Participation and civic society
Government effectiveness	Rule of law	Effectiveness and efficiency	Representation
Political Stability and absence of violence	Effectiveness and efficiency	Legitimacy (rule of law)	Sub-national democracy and of subsidiarity
Regulatory quality	Consensus-oriented	Capacity for learning and self-improvement	
	Equity and inclusiveness	Accountability	

Source: World Bank, United Nations, Council of Europe, Dutch Ministry of the Interior.

moreover always the combined result of inputs provided by the government as well as characteristics of the population (income, social habits, culture) being served (Fukuyama 2014: 61). Nevertheless, we have selected four performance indicators of public administration, one overall index and three specific indices which emphasise specific aspects of good governance:

- 1 The level of good governance
- 2 The level of e-governance
- 3 The level of business-friendliness
- 4 The level of political rights and civil liberties (rule of law)

According to the European Commission (2012) the overall index of the World Bank correlates well with all specific indices, indicating a latent dimension of general quality of public administration. Furthermore, correlations between specific indices suggest that there is no trade-offs between specific indices. This provides a solid basis for the World Bank's overall index of good governance.

### 7.3.1 Level of good governance

Within public administration there are several processes that deliver services to citizens, such as the issuing of passports and driving licences, issuing work permits and residence permits to foreigners, and tax administration. The codes for good governance comprise various elements (see Table 7.2). Some elements are found in numerous codes (rule of law, participation), whereas others are only mentioned in one.



These dimensions are not completely independent. On the other hand, it will also be difficult to come up with appropriate indicators for all dimensions. There are several indices for good governance that measure one or more of the dimensions above. But the most important, as noted earlier, is the measuring system developed by the World Bank. The World Bank Good Governance Indicators (wgi) are an influential set of indicators, which measure how countries are performing on six dimensions:

- 1 *Control of corruption* captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elite groups and private interests.
- 2 *Government effectiveness* captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
- 3 *Political stability and absence of violence/terrorism* measures perceptions of the likelihood that the government will be destabilised or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism.
- 4 *Regulatory quality* captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
- 5 *Rule of law* captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police and the courts, as well as the likelihood of crime and violence.
- 6 *Voice and accountability* captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association and a free media.

These indicators are based on subjective data, such as opinions of and judgment by experts, entrepreneurs and citizens, which goes against our goal of mainly using objective outcome measures. The advantage of the Good Governance indicators is that they are available for all countries and are widely regarded as adequate measures of governance. Moreover, these indicators are viewed as measuring 'clear ex-post outcomes' (Glaeser et al. 2004).

The two main dimensions of public administration are reflected in the World Bank's wgi index. The dimension of elaboration of primary legislation is indicated mainly by 'political stability', 'rule of law' and 'voice and accountability' and the dimension of public services is above all indicated by 'government effectiveness', 'control of corruption' and 'regulatory quality'.



Table 7.3 Relationship between the six indicators of good governance, 1996 (right of diagonal) and 2013 (left of diagonal)

2013 \ 1996	Accountability	Control of corruption	Rule of law	Effectiveness	Political stability	Regulatory quality
Accountability		0.78	0.85	0.75	0.86	0.84
Control of corruption	0.68		0.71	0.59	0.81	0.69
Rule of law	0.92	0.56		0.76	0.90	0.87
Effectiveness	0.90	0.63	0.86		0.73	0.85
Political stability	0.95	0.63	0.92	0.90		0.86
Regulatory quality	0.87	0.50	0.88	0.82	0.89	

Source: World Bank (Spearman correlations).

The World Bank has been collecting information on these six governance indicators since 1996. Based on the scores, countries are ranked from 0 to 100. The scores are normalised according to a [0,1] distribution with mean = zero and variance = 1. It is therefore mainly relative positions that should be considered, both between countries and over time.

These indicators are highly correlated, with correlation coefficients that often exceed 0.9 (Rothstein 2011: 35). This indicates that one and the same latent construct, in this case quality of government, is measured by these different indicators (see Table 7.3).

Not only are correlations high (mean score 0.79 in 1996 and 0.76 in 2013), but they have changed over time. In particular, the relationship between accountability and effectiveness of government is strengthened, as is the relationship between political stability and effectiveness of government. On the other hand, the relationship between rule of law and control of corruption has weakened over time.

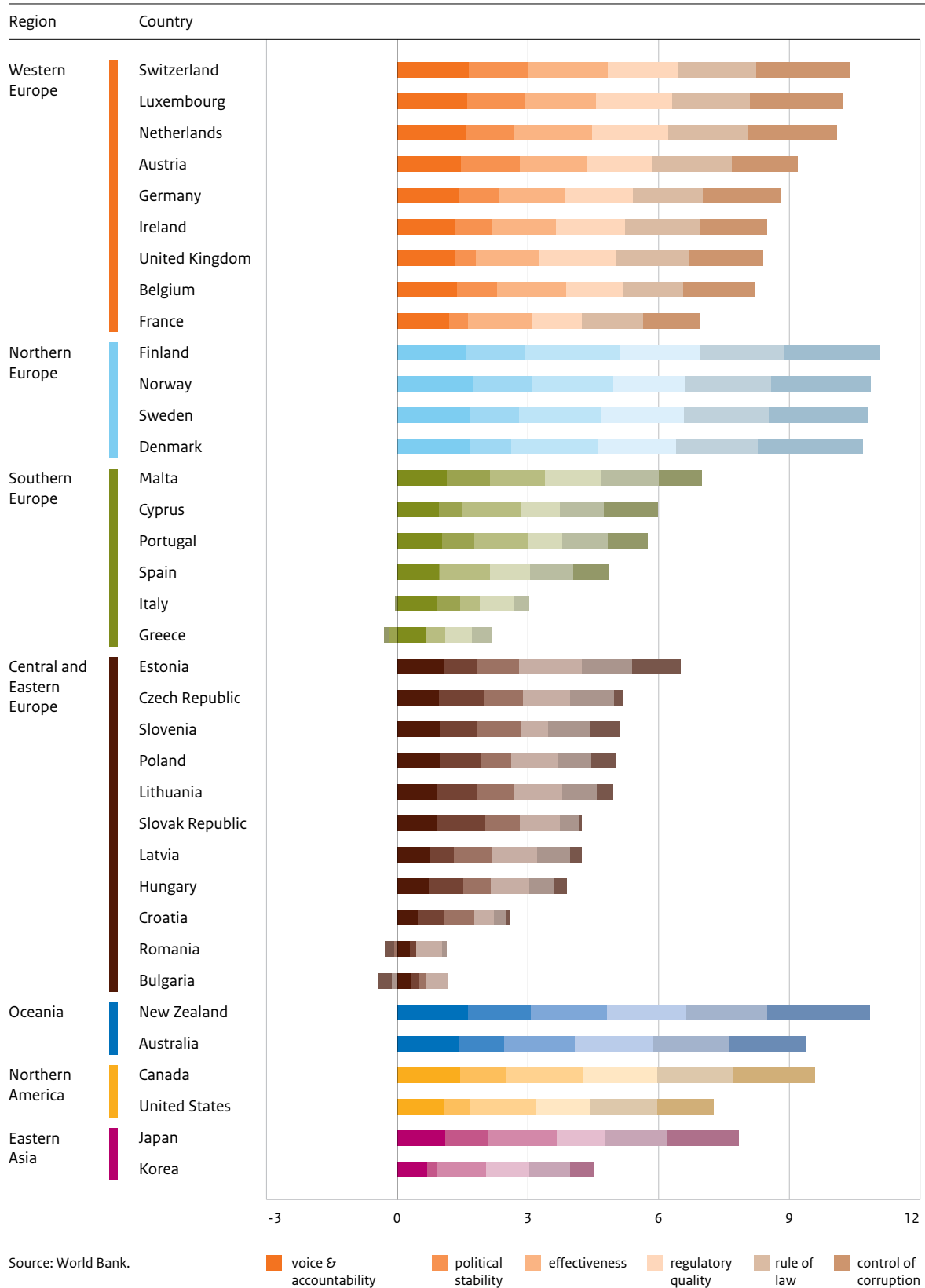
We will use the six World Bank 'good governance' indicators to construct a single outcome *index* for public administration. This public administration outcome index therefore reflects accountability, control of corruption, rule of law, government effectiveness, political stability and regulatory quality in our selected countries. The index scores are presented in Figure 7.1.a (original composite index) and Figure 7.1.b (standardised index scores).

Looking at Figure 7.1, it is immediately clear that good governance varies with the geographical location of a country. Countries in Western and especially Northern Europe are believed to have good governance. The same can be said of the countries in Oceania and Northern America and Japan. Good governance is less assured in Southern, Central and Eastern European countries.



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Figure 7.1.a World Bank Good Governance Indicators (WGI), 2013

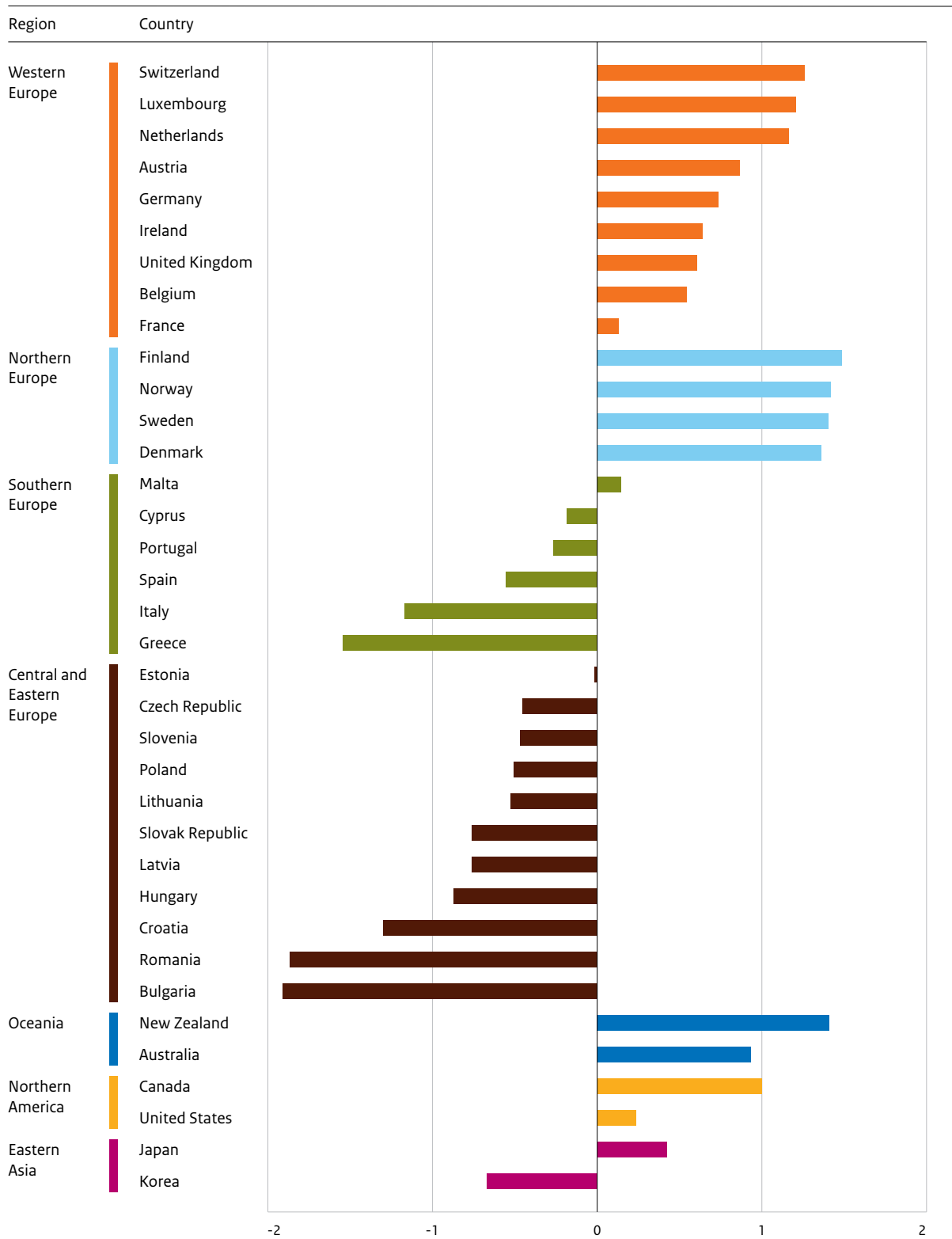


Source: World Bank.



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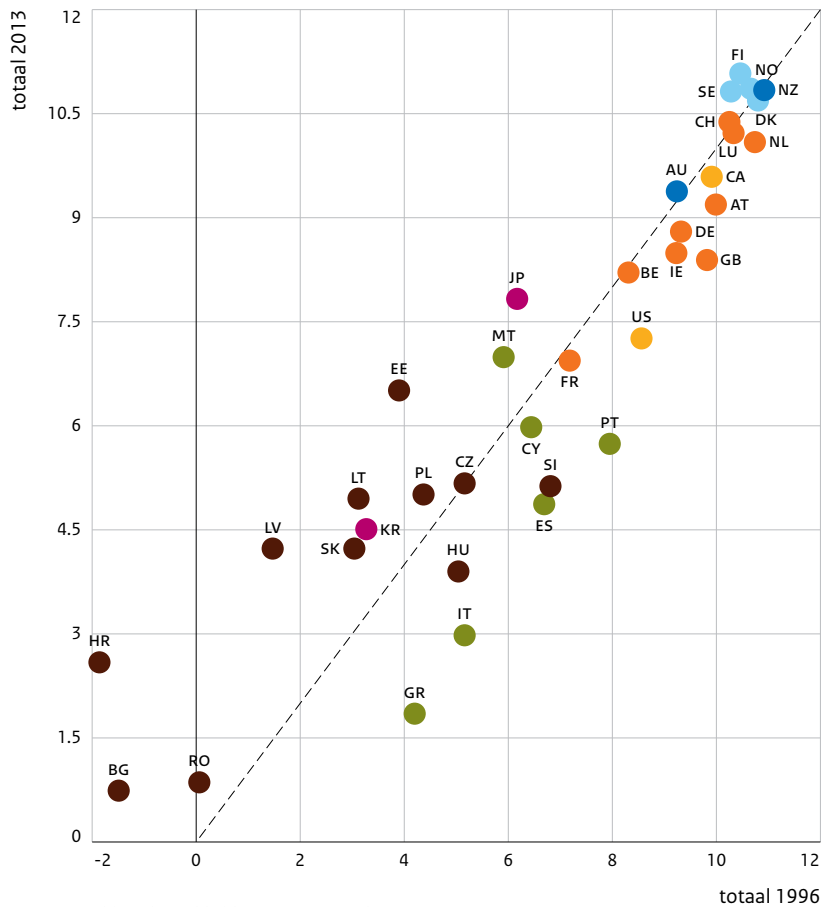
Figure 7.1.b Public administration outcome index, 2013 (index scores)



Notes: The outcome index combines the six World Bank good governance indicators that reflect accountability, control of corruption, rule of law, government effectiveness, political stability and regulatory quality in our selected countries. It is constructed as follows. First, we identify the 24 countries with available outcome data for all sectors: AT, BE, DE, FR, GB, IE, LU, NL, DK, FI, SE, ES, IT, PT, BG, CZ, EE, HU, LT, LV, PL, RO, SI, and SK. We calculate the 2013 mean and standard deviation of the combined six good governance indicators for this reference group of 24. We then compute standardised 2013 scores by subtracting the mean and dividing by the standard deviation. Source: World Bank (scp treatment).



Figure 7.2 Good governance scores, 1996 and 2013



Source: World Bank Worldwide Governance Indicators (wgi).

Within the Western European countries, France and the United Kingdom are characterised by less political stability. The same applies for the United States. Greece is the worst-performing Southern European country, mainly because of the very limited control of corruption.<sup>5</sup> But other aspects of good governance also score rather poorly in Greece, as well as in Italy. Among the Eastern European countries, the newly acceded EU Member States Bulgaria and Romania still have a long way to go to achieve good governance. Control of corruption is a particularly weak aspect of government performance in these countries, as is the implementation of the rule of law.

We now discuss the change of relative positions of countries. Since 1996 the good governance scores have declined slightly overall in Western Europe and increased somewhat in Northern Europe (Figure 7.2). The Southern European countries Greece, Italy, Spain and Portugal have seen a considerable decrease in their government performance, while the Baltic

<sup>5</sup> Corruption is a 'wicked problem' because it is self-reinforcing. In that sense it is similar to the 'safety paradox' mentioned in Chapter 4. When people perceive other people to be corrupt, they will themselves tend to behave in a corrupt manner. This is also often the only manner in which people can sustain themselves in a corrupt system: if everyone is a free-rider, it is only rational to become a free-rider oneself.



states (Estonia, Latvia and Lithuania) and some Eastern European countries (Slovak Republic, Poland) have been able to increase their government performance. The same can be said of Japan and Korea. Finally, the Northern European countries (Finland, Norway, Sweden and Denmark) and New Zealand have consolidated their (high) scores, followed at some distance by Switzerland, the Netherlands and Luxembourg.

The most noteworthy feature in Figure 7.2 in our view is the deterioration in the relative position of most Southern European countries. In Greece, the decrease in good governance occurred mainly in the period 2005-2010, especially on political stability ( $-0.6$  SE units), control of corruption ( $-0.5$  SE units) and regulatory quality ( $-0.3$  SE units). In Italy, control of corruption has decreased the most, in Spain political stability and in Portugal regulatory quality. These Southern European countries share an authoritarian past and, as a result of this shared history, a similar process of democratisation. Efforts to modernise public administration can be hampered by the various legacies associated with the struggle to overcome this authoritarian past (Galanti 2011). According to Galanti (2011) Southern European bureaucracies are characterised by formalism and legalism in terms of structures and civil servants' behaviour, political and administrative clientelism, uneven development and unbalanced distribution of human resources and a lack of administrative élites, especially in Greece, Italy and Portugal.

Finland has improved its governance score through better regulatory quality, and Sweden by excluding corruption. Thus even countries with high levels of good governance can improve their performance. The changes in good governance in different periods are shown in Table 7.4.

Good governance is of course a very broad and general term. We will therefore look more closely at a few specific aspects of good governance (Table 7.5). We will start with corruption. Using different data sources based on various expert surveys, Transparency International constructs an annual 'Corruption Perceptions Index' (CPI).<sup>6</sup> This index, together with the Global Corruption Barometer (GCB), a survey developed by the same organisation and conducted among more than 114,000 citizens in 107 countries, provides one of the best overviews of corruption available. According to the CPI 2014, Denmark has the lowest corruption, and the other Scandinavian countries also have very low corruption levels. Corruption in Western Europe, Northern America and Oceania is also quite low. Southern, Central and Eastern Europe, on the other hand, are plagued by a considerable amount of corruption.

If we compare the Transparency International CPI index with the World Bank WGI index, the ranking of countries based on the level of corruption seems to be quite similar; only the ranking of Malta differs by a few positions. Both indices thus seem to measure the same kind and level of corruption. This is less the case with the Global Competitiveness Report

6 The CPI is the most well-known measure of corruption. The CPI is based on expert assessments and opinion surveys. Countries must have been assessed by three sources before they are included in the index. The CPI has been criticised because it relies on the opinion of a small group of experts, possibly introducing an 'elite bias' (Cobham 2013). Others have questioned the aim of capturing corruption in one number (The Economist 2010). On the other hand, Wilhelm (2002) has compared the CPI to two other measures of corruption and found a strong and significant correlation between these three measures of corruption. This is an indication of the validity of the CPI (and the other two measures).



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Table 7.4 Good governance scores, changes between 1996 and 2013

For reading instructions see page 49

Region	Country	1996	2000	2005	2010	2013	2013	2013 vs 1996
Western Europe	Switzerland	10.3	▲ +0.7 ▼ -0.9 ▲ +0.2 ▲ +0.1	10.4				
	Luxembourg	10.3	▲ +0.4 ▼ -0.9 ▲ +0.5 ▼ -0.1	10.2				
	Netherlands	10.7	▲ +0.8 ▼ -1.5 ▼ -0.1 ▲ +0.2	10.1				
	Austria	10.0	▼ -0.7 ▲ +0.3 ▼ -0.3 ▼ -0.1	9.2				
	Germany	9.3	▲ +0.2 ▼ -0.6 ▼ -0.3 ▲ +0.2	8.8				
	Ireland	9.2	▲ +0.2 ▼ -0.1 ▼ -0.6 ▼ -0.2	8.5				
	United Kingdom	9.8	▲ +0.1 ▼ -1.6 0.0 ▲ +0.1	8.4				
	Belgium	8.3	▼ -0.2 ▼ -0.3 ▲ +0.1 ▲ +0.3	8.2				
	France	7.2	▲ +0.1 ▲ +0.2 ▲ +0.1 ▼ -0.7	6.9				
Northern Europe	Finland	10.5	▲ +1.3 ▼ -0.4 ▼ -0.2 ▼ -0.1	11.1				
	Norway	10.7	▼ -0.6 0.0 ▲ +0.2 ▲ +0.6	10.9				
	Sweden	10.3	▲ +0.2 ▼ -0.4 ▲ +0.5 ▲ +0.2	10.8				
	Denmark	10.8	▲ +0.3 ▼ -0.2 0.0 ▼ -0.2	10.7				
Southern Europe	Malta	5.9	▲ +1.2 ▼ -0.3 ▲ +0.5 ▼ -0.3	7.0				
	Cyprus	6.4	▼ -0.5 ▼ -0.2 ▲ +0.9 ▼ -0.6	6.0				
	Portugal	8.0	▼ -0.9 ▼ -0.1 ▼ -1.4 ▲ +0.1	5.7				
	Spain	6.7	▲ +0.8 ▼ -1.0 ▼ -1.4 ▼ -0.2	4.9				
	Italy	5.2	▼ -0.2 ▼ -1.1 ▼ -0.8 ▼ -0.1	3.0				
	Greece	4.2	▲ +0.5 ▼ -0.4 ▼ -1.9 ▼ -0.5	1.9				
Central and Eastern Europe	Estonia	3.9	▲ +1.1 ▲ +0.8 ▲ +0.4 ▲ +0.3	6.5				
	Czech Republic	5.2	▼ -2.2 ▲ +2.2 ▲ +0.2 ▼ -0.2	5.2				
	Slovenia	6.8	▼ -1.7 ▲ +0.5 ▼ -0.1 ▼ -0.4	5.1				
	Poland	4.4	▼ -0.6 ▼ -0.6 ▲ +1.5 ▲ +0.3	5.0				
	Lithuania	3.1	▼ -0.7 ▲ +1.9 0.0 ▲ +0.7	5.0				
	Slovak Republic	3.0	▼ -0.1 ▲ +2.0 ▼ -0.4 ▼ -0.3	4.2				
	Latvia	1.5	▲ +0.3 ▲ +2.2 ▼ -0.1 ▲ +0.3	4.2				
	Hungary	5.0	▲ +0.5 0.0 ▼ -1.2 ▼ -0.4	3.9				
	Croatia	-1.9	▲ +2.6 ▲ +1.4 ▲ +0.2 ▲ +0.3	2.6				
	Romania	0.1	▼ -1.3 ▲ +1.2 ▲ +0.9 0.0	0.9				
Bulgaria	-1.5	▲ +2.0 ▲ +0.9 ▼ -0.1 ▼ -0.6	0.7					
Oceania	New Zealand	10.9	▼ -0.4 ▼ -0.2 ▲ +0.4 ▲ +0.1	10.8				
	Australia	9.2	▲ +0.6 ▼ -0.3 ▲ +0.1 ▼ -0.2	9.4				
Northern America	Canada	9.9	▲ +0.1 ▼ -0.7 ▲ +0.4 ▼ -0.1	9.6				
	United States	8.6	▲ +0.5 ▼ -1.7 0.0 ▼ -0.1	7.3				
Eastern Asia	Japan	6.2	▲ +0.4 ▲ +0.4 ▲ +0.3 ▲ +0.5	7.8				
	Korea	3.3	▼ -0.1 ▲ +1.4 0.0 ▼ -0.1	4.5				

Source: World Bank Worldwide Governance Indicators (wgi).

▲ largest increase  
▼ largest decrease

2013  
1996



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Table 7.5 Ranking of corruption, effectiveness and regulation of governments

Region	Country	Corruption			Effectiveness		Regulation	
		WGI <sup>e</sup>	CPI <sup>a</sup>	GCR <sup>b</sup>	WGI	GCR <sup>c</sup>	WGI	GCR <sup>d</sup>
Western Europe	Austria	16	17	19	13	19	14	17
	Belgium	14	14	13	12	20	16	30
	France	17	19	17	17	23	19	27
	Germany	10	11	13	14	10	13	13
	Ireland	15	16	9	18	15	12	8
	Luxembourg	7	8	4	10	7	8	3
	Netherlands	8	7	7	7	9	6	10
	Switzerland	6	6	6	5	4	11	4
United Kingdom	12	12	9	16	15	7	10	
Northern Europe	Denmark	1	1	2	2	15	4	17
	Finland	5	3	3	1	4	2	1
	Norway	4	6	6	4	6	10	12
	Sweden	3	4	11	3	4	1	8
Southern Europe	Cyprus	19	21	20	19	19	28	6
	Greece	34	35	30	34	34	32	34
	Italy	33	35	32	33	36	31	36
	Malta	21	27	21	20	15	17	17
	Portugal	22	21	22	21	27	30	24
	Spain	23	23	32	22	31	26	27
Central and Eastern Europe	Bulgaria	36	35	35	35	29	35	22
	Croatia	31	32	26	31	34	36	35
	Czech Republic	30	30	33	27	2	22	30
	Estonia	20	19	17	25	9	15	3
	Hungary	28	29	34	32	29	29	30
	Latvia	29	27	26	26	24	24	17
	Lithuania	27	25	26	28	27	20	24
	Poland	25	22	23	30	25	23	25
	Romania	35	35	30	36	31	34	21
	Slovak Republic	32	31	36	29	32	27	34
Slovenia	24	25	28	24	34	33	32	
Oceania	Australia	11	10	13	9	17	5	27
	New Zealand	2	2	1	8	1	3	6
Northern America	Canada	9	9	15	6	12	9	12
	United States	18	16	19	15	23	18	17
Eastern Asia	Japan	13	14	9	11	12	21	14
	Korea	26	27	26	23	21	25	21

Corruption Perception Index 2014 (Transparency International). b Global Competitiveness Report 2014, Question: "In your country, how common is diversion of public funds to companies, individuals, or groups due to corruption? c Global Competitiveness Report 2014, Question: "In your country, how efficiently does the government spend public revenue? d Global Competitiveness Report 2014, question: "In your country, how burdensome is it for business to comply with government administrative requirements (e.g., permits, regulations and reporting e World Bank Worldwide Governance



(GCR), which is based on survey data from business executives in different countries. Compared to other regions, corruption levels in Southern, Central and Eastern Europe are considerably higher. However, there are a few interesting exceptions with the WGI index. Compared to the WGI index, the GCR index observes higher levels of corruption in Sweden, Spain and Canada and lower levels in Ireland and Japan.

The GCR index also contains information on (perceived) government efficiency and quality of regulation. The performance of countries on these measures is somewhat less predictable. While again, in general, Western and Northern European countries are doing quite well, there are remarkable differences. These differences are so large that we can doubt whether the same concepts are actually being measured. Malta and Cyprus are for example comparable to or even outperform countries as France and Denmark on these measurements of government efficiency and regulation. Denmark performs well on the other indices, but not on the GCR index. Among the countries in Central and Eastern Europe, Estonia even outperforms Germany on all these indicators. Countries also do not necessarily obtain high or low scores for each performance indicator. For example, while the Czech Republic government is perceived to be the most efficient government in our sample, with the exception of New Zealand, the Czech Republic is one of the worst-performing countries on regulation. Finally, Italy is the only country in our sample with very low scores on both government efficiency and regulation. We can conclude that the GCR index generates some unexpected and hard to explain scores on good governance indicators. We will therefore limit ourselves to the World Bank index of good governance.

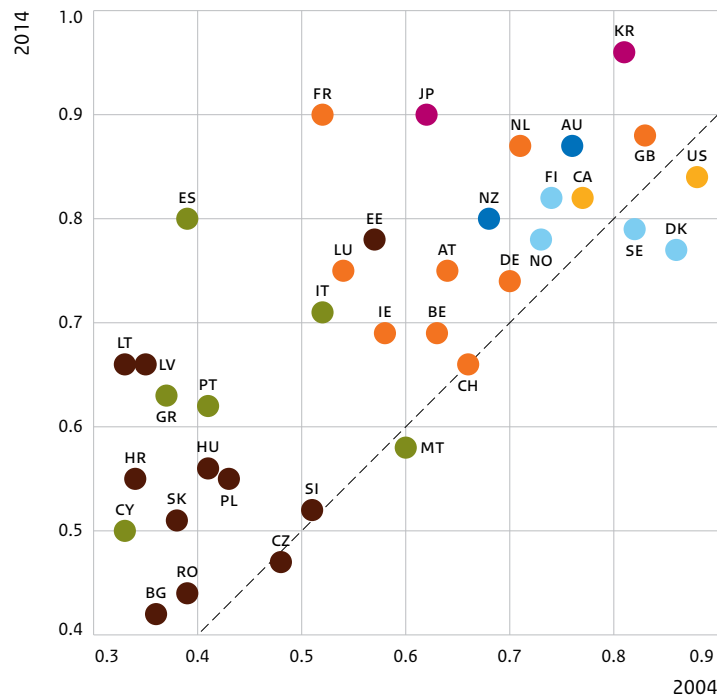
### 7.3.2 E-governance index

E-government maturity describes the extent to which governments are using ICT (mostly the Internet) to improve services and provide information to citizens and businesses. There are several sources of information on e-government maturity: the UN e-Government Readiness Index (EGDI), the Eurostat e-government statistics, Economist Intelligence Unit e-readiness rankings (2010, not updated) and the Brown University Global E-government Study (last report dates from 2007).

The UN EGDI is a weighted average of three normalised scores on three key dimensions of e-government, namely: (1) the status of development of the telecommunications infrastructure expressed in the number of Internet, broadband and telephone users; (2) the scope and quality of online services, especially for disadvantaged and vulnerable groups; and (3) inherent human capital. The human capital component, which relates to the literacy and schooling of the population, is not a direct but an indirect indicator of e-government performance. As scores are normalised every year, figures are only comparable between countries and no statements can be made about absolute changes over time.



Figure 7.3 United Nations e-Government readiness index (e-GRI), 2004 and 2014



Source: World Bank Worldwide Governance Indicators (wgi).

Research has shown that every 1% increase in broadband penetration increases economic growth rates by 0.14% on average in low and middle-income countries (United Nations 2014). However, the development of the telecommunications infrastructure and the online access of citizens is not only important for economic growth, but is also a prerequisite for a well-functioning E-government. The UN telecommunication infrastructure index is composed of five indicators: the share of fixed and wireless broadband subscriptions, fixed and wireless (including mobile) telephone subscriptions and internet users. To construct the UN online service index, more than 90 qualified, instructed and trained researchers (often graduate students) assessed each country's national website in the native language, including the websites of the relevant government ministries. All the researchers were guided by a data team coordinator who provided support and guidance throughout the assessment period. The survey questionnaire had four sections that corresponded to the four ascending stages of e-government development in the index. Countries are scored on all stages, so a country can have a low score in stage 2 and a high score in stage 3. In stage 1, emerging information services, government websites provide basic and limited information on public policy, governance, laws, regulations, documentation, and types of government services provided. In stage 2, government websites deliver enhanced one-way or simple two-way e-communications with their citizens, such as downloadable forms



for services and applications. In stage 3, government websites engage in two-way communication with their citizens, for example for paying taxes and applying for ID cards, birth certificates, passports, and licence renewals. In stage 4, finally, the government encourages citizen participation in decision-making and is willing and able to engage in a two-way, open dialogue with its citizens.

Because the UN readiness index is normalised annually, only relative progress can be observed comparing countries over time. Most countries selected improved their position on the UN readiness index between 2004 and 2014 (Figure 7.3). Only some Eastern European countries perform poorly, and did not improve their e-government performance relative to other countries (Bulgaria, Romania, Czech Republic and Slovenia). Most relative progress is made by Spain, France, the Baltic states and Japan. Denmark, Sweden and the United States perform well but lost some ground in the observed period. This may be a saturation effect, but another explanation may be the “law of the handicap of a head start” (Romein, 1935). This law states that making progress in a particular area (a short-term benefit) often creates circumstances in which stimuli are lacking to strive for further progress (a long-term handicap), allowing them to be overtaken by others (Wikipedia).

Eurostat collects information on E-services in EU Member States, partly overlapping with the UN indicators, but does not produce an index of e-government. We only use the first (online service level) and second (telecom infrastructure) because these components are directly related to the e-governance status of a country. In all countries, Internet access is provided almost entirely through broadband connections.

According to the Eurostat e-Government indicators, the Northern European countries are in the lead, but the Netherlands also fits the Northern pattern (Figure 7.4). These countries use about two-thirds of the ICT capacity of governments – measured by the selected seven items – to provide their citizens with e-facilities. Most countries can improve the submission of income tax returns by using the Internet. Broadband connections are nearly available in all countries. Estonia and Slovenia perform rather well compared with surrounding countries. Romania is still at the very beginning of the e-government era.

### 7.3.3 Business-friendliness index

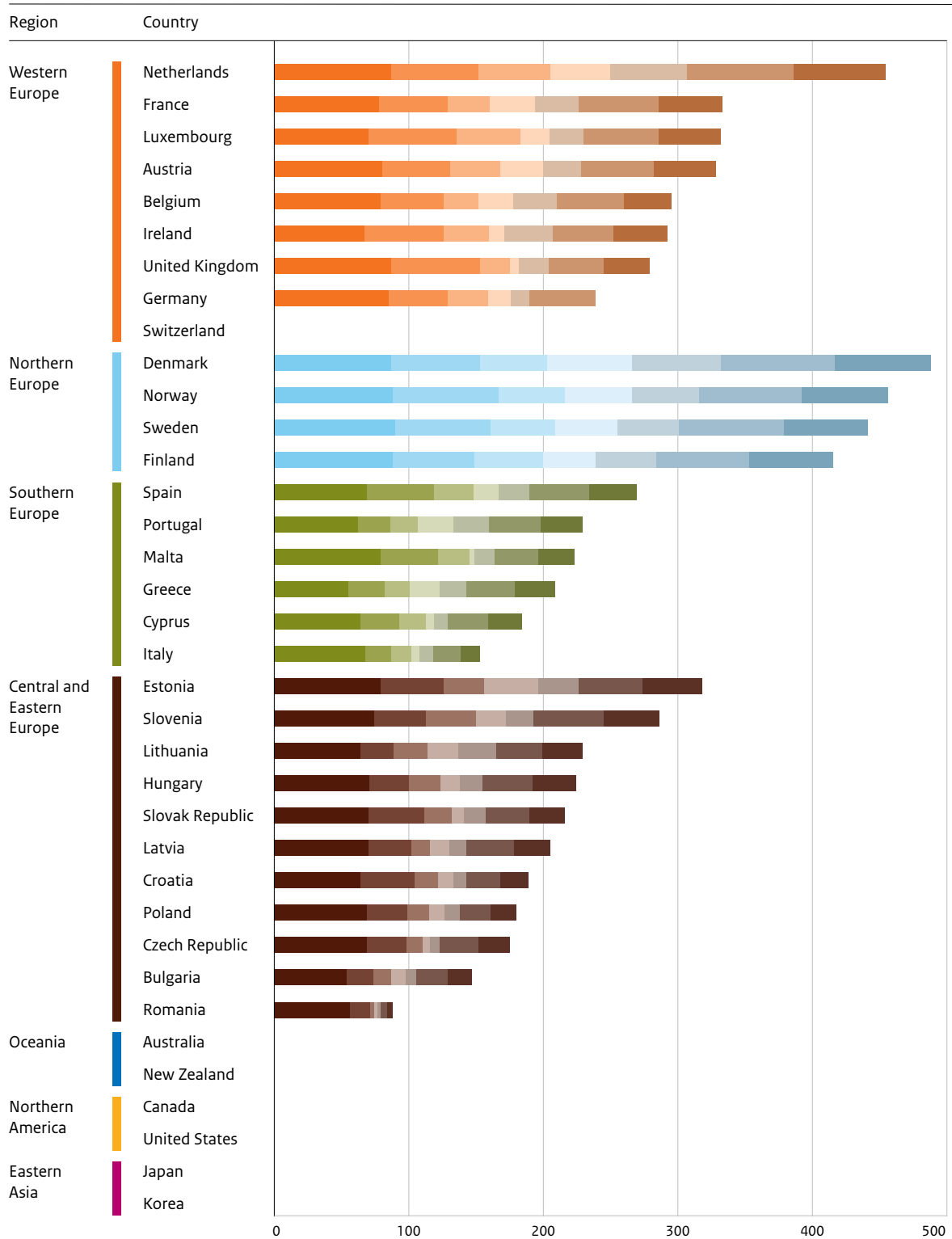
The World Bank’s index of good governance does not reveal very much about the business friendliness of public administration. This is a regrettable weakness because business-friendliness is an important instrument for promoting economic competitiveness and economic performance (European Commission, 2014). Since 2014 the World Bank has published an





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Figure 7.4 e-Government indicators Eurostat, 2013

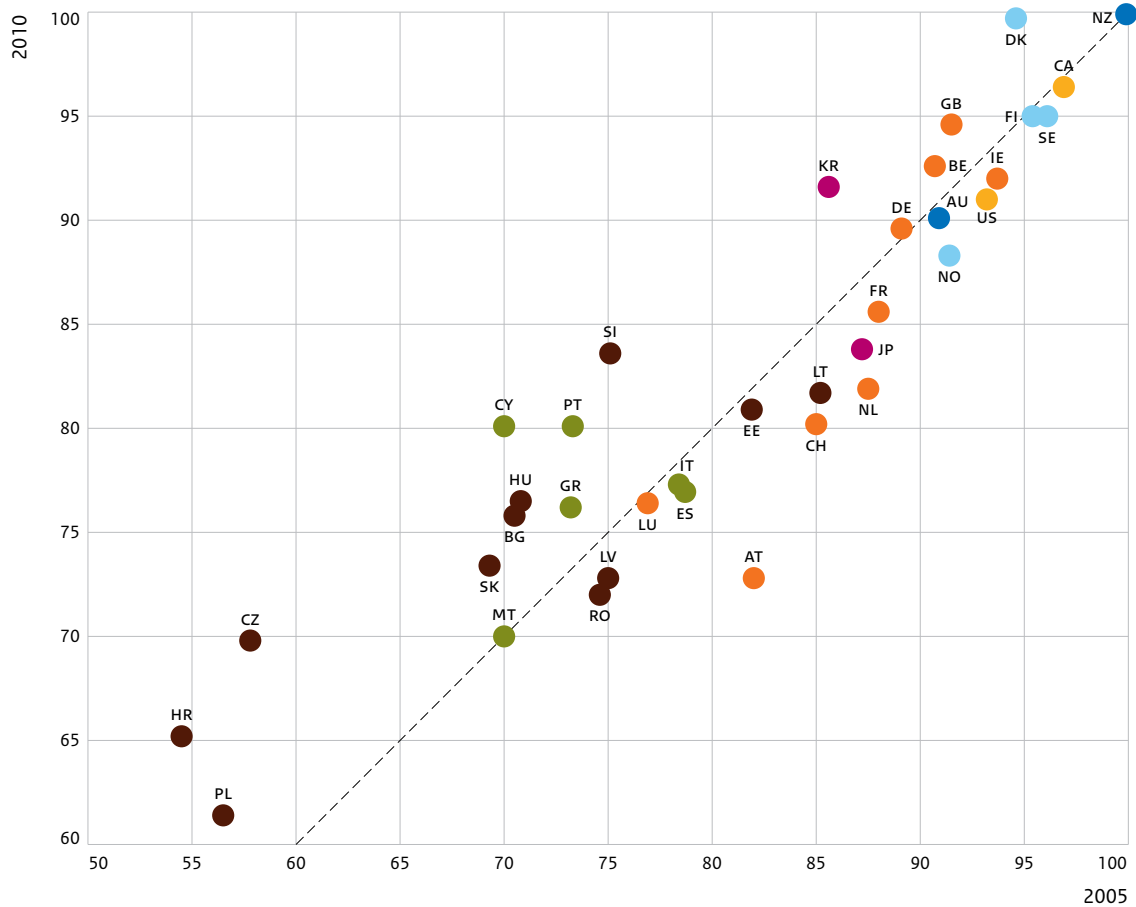


Source: Eurostat.

- households with broadband access (%)
- individuals using mobile devices to access the Internet on the move (%)
- internet use individuals: downloading official forms last 12 months (%)
- internet use individuals: submitting income tax return via websites of public authorities (%)
- internet use individuals: submitting completed forms last 12 months (%)
- internet use Individuals: interaction with public authorities (%)
- individuals' mainly satisfied with the ease of finding information on e-Government websites (%)



Figure 7.5 World Bank business-friendliness index (DBI), 2005 and 2010

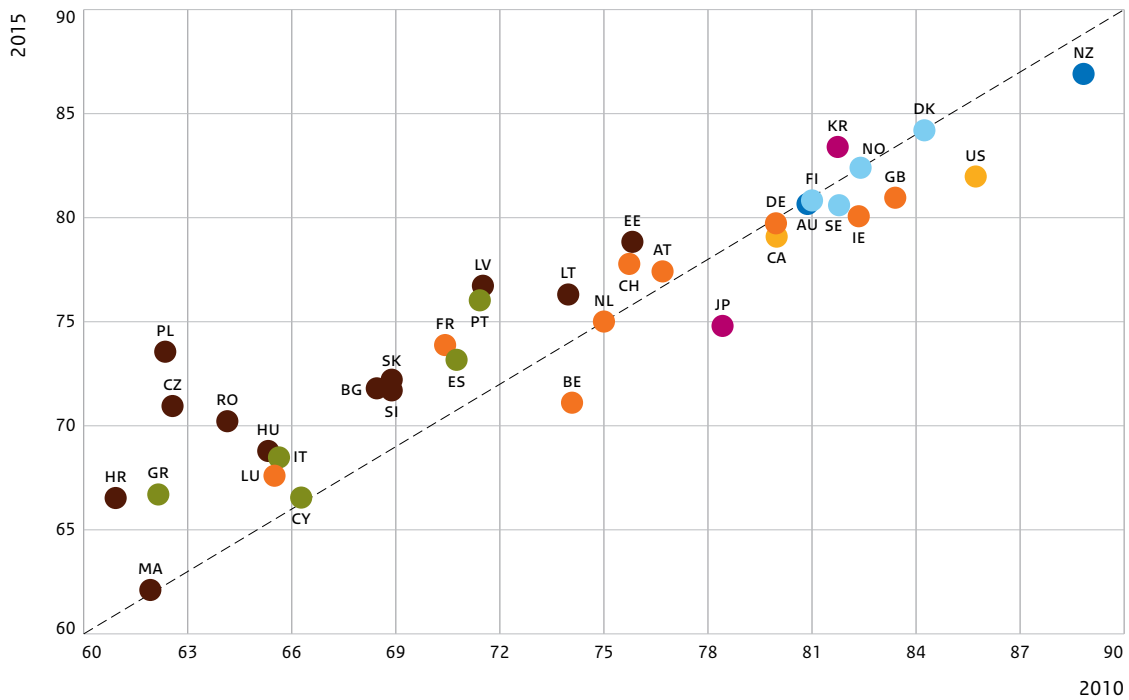


Source: The QoG Standard Dataset 2015.

index on doing business, which refers to the administrative regulations that affect domestic small and medium-sized enterprises (SMEs) in major cities (World Bank 2015). The index captures two dimensions of business-friendliness, namely the complexity and cost of regulatory processes and the strength of legal institutions. The business-friendliness index (World Bank Doing Business Index: DBI) comprises ten indicators to cover the two dimensions, of which eight refer to efficiency and the costs of the procedures to start a business, build a warehouse, get connected to the electrical grid, transfer a property, comply with all tax regulations, export and import by seaport, resolve a commercial dispute and arrange commercial insolvency. Two additional items are a well-functioning collateral registry and credit information system and the rights of minority shareholders in related-party transactions. A high score on these ten items indicates a business-friendly environment which fosters economic performance.



Figure 7.6 World bank business-friendliness index (DBI), 2010 and 2015



Notes: The data for three out of ten items (obtaining credit, protecting minority Investors and resolving insolvency) are not comparable between 2013 and 2014 due to methodological changes. Source: World Bank, Doing Business 2013 and 2015.

Due to changes in the measurement of business-friendliness in 2014, the outcomes of the DBI before and after 2013 are not comparable: three out of ten items have changed. However, the effects are limited, not exceeding 4 percentage points. This means that changes of more than 4 percentage points may be considered as real changes. In addition, the results before and after 2010 are not comparable because of changes of definitions and changes of the included items.

New Zealand can be characterised as the most business-friendly country (Figure 7.6, 2015), followed by some other Anglo-Saxon countries (United States, United Kingdom, Ireland), Northern European countries (Denmark, Finland, Norway and Sweden) and Korea. Between 2010 and 2015 a good deal of progress has been made in Poland, the Czech Republic, Romania and Croatia. The progress made in the latter two countries can be partly attributed to changes in measurement of business-friendliness in 2014. According to the World Bank (2015) Poland made electricity cheaper and made transferring property and trading across borders easier, the Czech Republic made starting a business and enforcing contracts easier and improved access to credit. The decline in business-friendliness between 2010 and 2015 is mainly due to the changes in measurement, as is the case in Belgium, Japan and the USA.



Between 2005 and 2010, great progress was made by some Eastern European countries (Croatia, Czech Republic and Slovenia). Austria lost ground in business-friendliness between 2005 and 2010 (Figure 7.5), but stabilised its position between 2010 and 2015 (Figure 7.6).

According to the European Commission (2012), the correlation between the two World Bank indices, good governance and business-friendliness, is rather weak. For five of the selected ten indicators of business-friendliness, the mean correlation with good governance amounted to 0.33.

#### 7.3.4 Rule of Law Index

The World Justice Project (WJP) publishes the Rule of Law Index. According to the WJP the Index is based on two main ideas about the functioning of the public sector. First, the law has to impose limits on the exercise of power by the state and its agents, as well as individuals and private entities. Second, the state limits the actions of members of society and the public interest is served, people are protected from violence, and members of society have access to mechanisms to settle disputes and redress grievances. The Index is made up of eight dimensions, each of which is measured using between three and eight indicators, adding up to a total of 47 indicators. The eight dimensions relate to constraints on government powers, absence of corruption, open government, fundamental rights, order and security, regulatory enforcement, civil justice and criminal justice.

According to the WJP the Index is the world's most comprehensive, and the only one to rely solely on primary data. We therefore rely on this Index even though, as stated, the World Bank also has its own 'Rule of Law' indicator. Primary data are gathered on 100,000 households (about 1,000 in each country) using closed-ended questions and a survey of 2,400 experts (about 25 in each country) worldwide. The indicators are normalised on a 0-1 scale and are summarised unweighted to produce an overall score.

Western and Northern European countries perform well on rule of law indicators, as do the non-European countries (Figure 7.7). Estonia performs rather well too, especially compared to surrounding countries and the United Kingdom. In general, Southern and Eastern European countries can improve their rule of law position mainly by combating corruption and promoting open government.

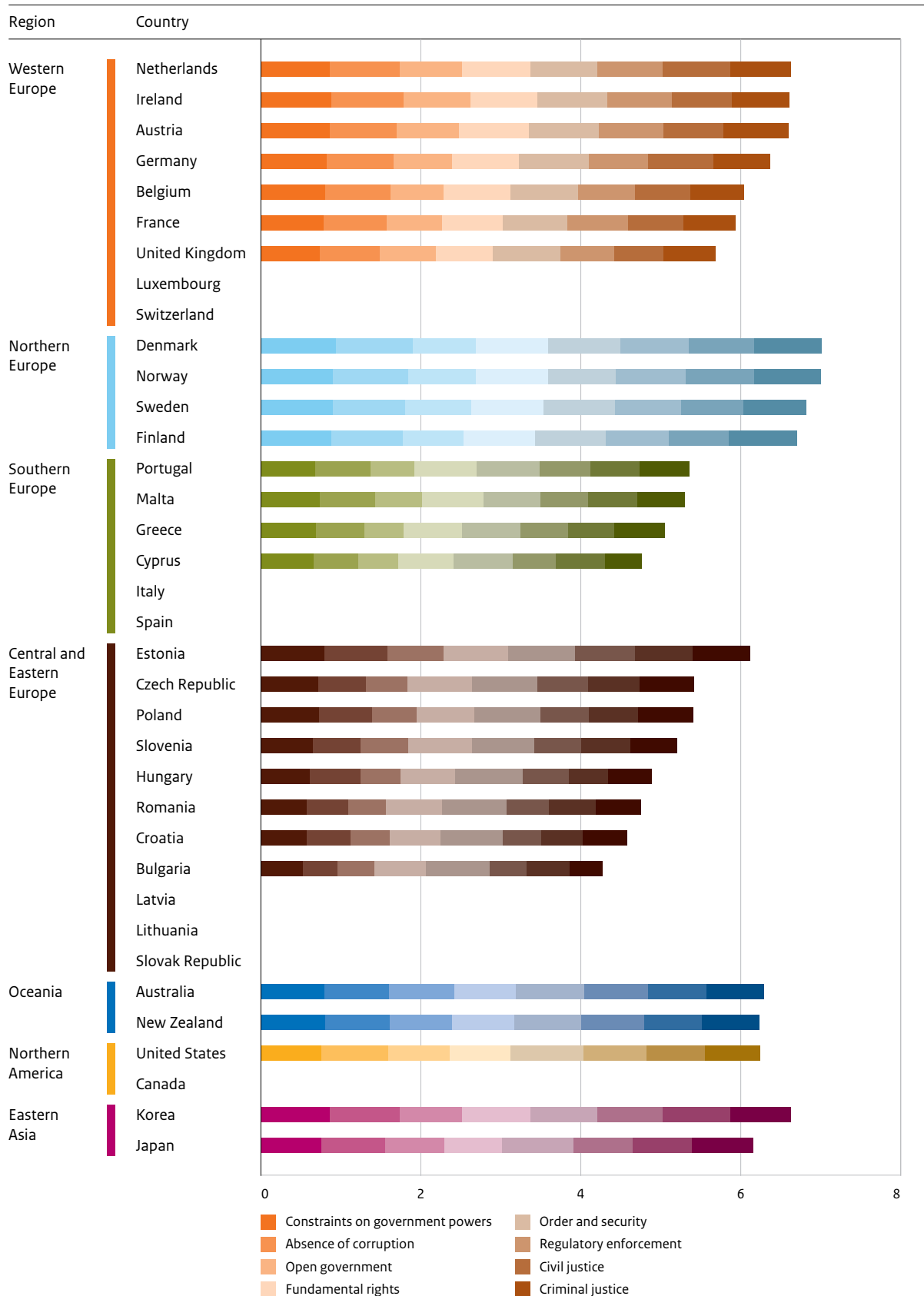
#### 7.4 Input: money and manpower

We follow the COFOG classification to demarcate the activities of public administration. As pointed out earlier we distinguish two main activities: the elaboration of primary legislation and the provision of public services.



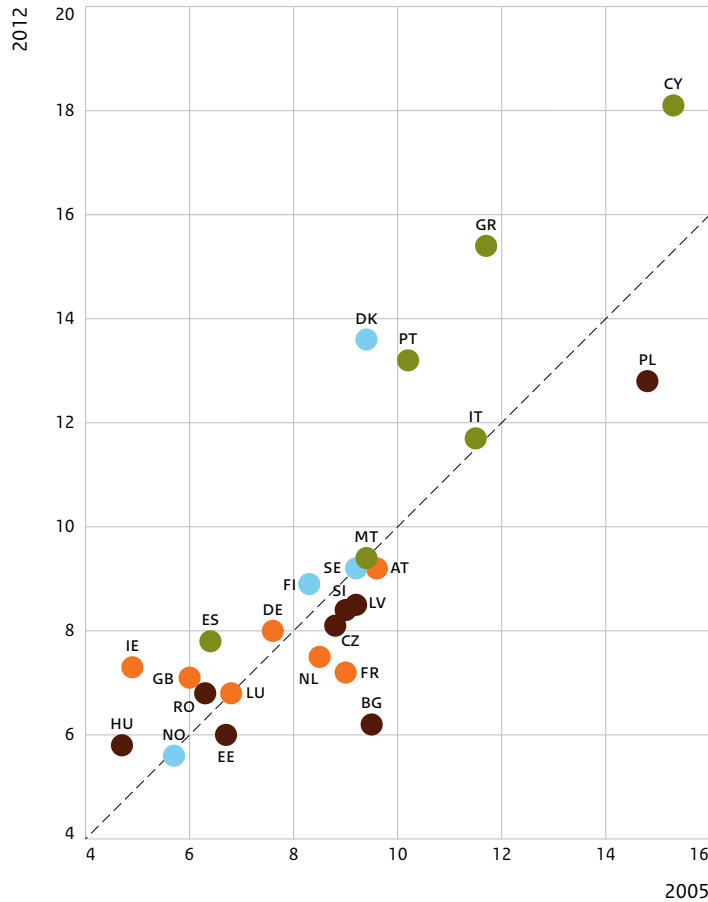
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Figure 7.7 Rule of Law Index, 2013



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Figure 7.8 Government expenditure on public administration, 2005 and 2012 (% of GDP)



Source: Eurostat (no information available for Belgium, Croatia, Lithuania, Slovak Republic, Switzerland and non-EU countries).

If we apply these activities to the COFOG classification, we expect executive and legislative activities, financial and fiscal affairs, external affairs and general services to belong to public administration.

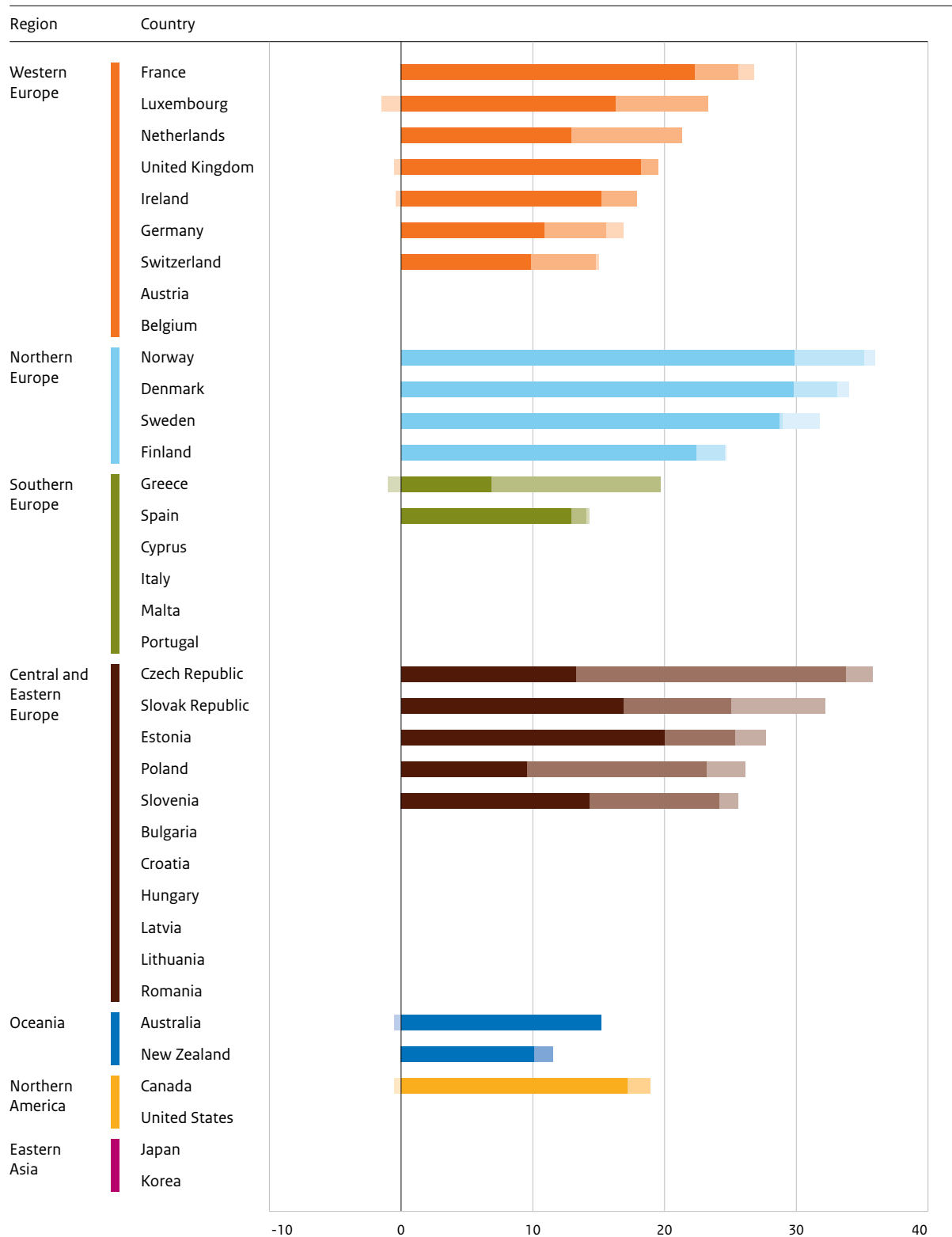
In general, European countries spend between 6% and 10% of GDP on public administration (Figure 7.8). About two-thirds of the countries fall within these limits. In 2005, Italy, Greece, Poland and Cyprus rose substantially above 10%. Denmark, Switzerland and Lithuania joined this high-spending group in 2012; the spending of Greece and Cyprus also grew, but in Poland it decreased.

How efficient is public administration? Efficiency refers to that part of productivity (relationship between inputs and outputs) that can be directly linked to the optimum allocation of resources by management (Blank and Valdmanis 2013). Of course, this question is very hard to answer



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Figure 7.9 Share of general government personnel in total labour force, 2001 and 2011

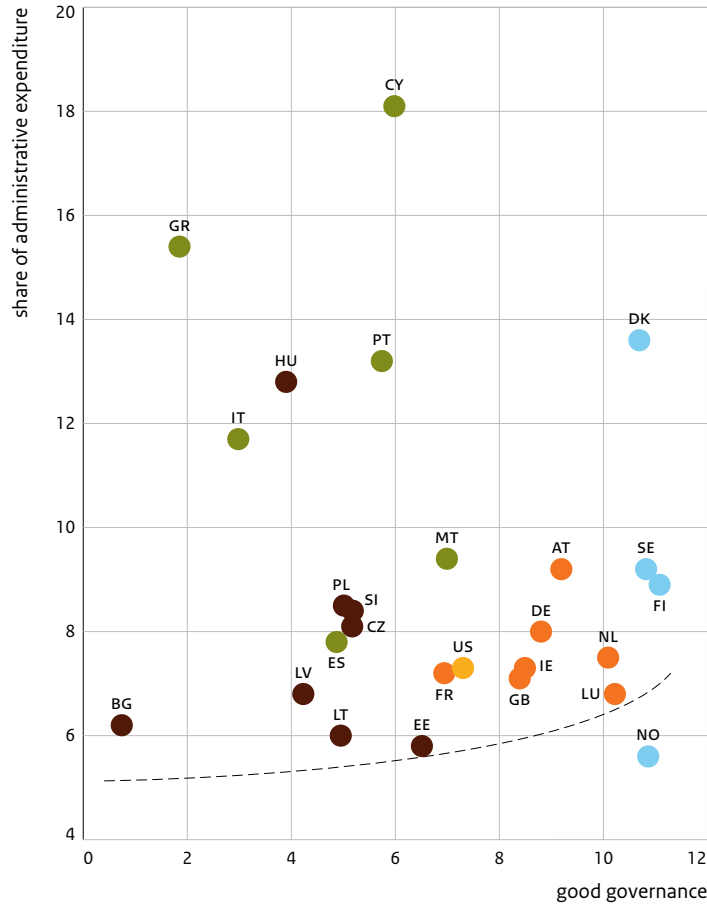


Notes: Data represent the number of employees except for the Czech Republic, the Netherlands and New Zealand, where data represent full-time equivalents; the general government sector comprises all levels of government, including core ministries, agencies, departments and non-profit institutions that are controlled and mainly financed by public authorities. Source: OECD (2013).

■ general government 2001 ■ public corporations 2001 ■ increase gg+pc 2011



Figure 7.10.a Public administration efficiency by expenditure



Sources: World Bank, Eurostat, OECD (2013).

when it comes to public administration. However, we are able to give a rough indication of inputs by combining data about the size of the general government labour force as a share of the total labour force (Figure 7.9). This share was highest in Norway, the Czech Republic, Denmark, Slovak Republic and Sweden (all above 30%), and lowest in New Zealand, Spain, Switzerland and Australia (all 10-15%).

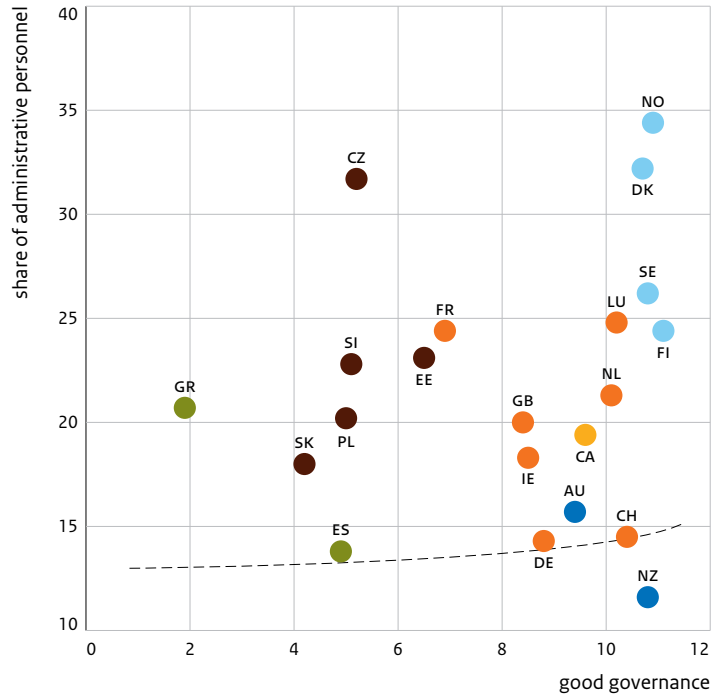
As we do not know the output of public administration, we use the outcome in terms of good governance as a rough indication.

The relationship between outcomes and inputs as presented in Figure 7.10.a and 7.10.b should be convex. This means that more input should give more outcome. Countries with less input and the same level of outcome are the most efficient. We can therefore draw a convex line which connects all countries with the lowest input in both figures. This is a rather difficult exercise





Figure 7.10.b Public administration efficiency by personnel



Sources: World Bank, Eurostat, OECD (2013).

because we have to leave out Norway (expenditure) and New Zealand (labour) in order to draw this line. Furthermore, the line is rather linear, and countries with the same outcome differ widely on levels of input. This makes a good interpretation of the results difficult. However, some general conclusions can be drawn. With regard to expenditure, Southern European countries, except Spain, seem to perform rather inefficiently. The same applies to Hungary. These countries combine a rather poor performance on good governance with rather high levels of expenditure on public administration. With regard to the deployment of personnel, we observe that Northern European countries need high staffing levels to perform well on good governance (Figure 7.10.b).

The results in both figures suggest that the deployment of more money and more personnel does not really help to improve the performance of public administration. We need to look for other factors to explain differences in good governance, i.e. which countries are better able to improve their performance.



## 7.5 Interpreting differences in outcomes

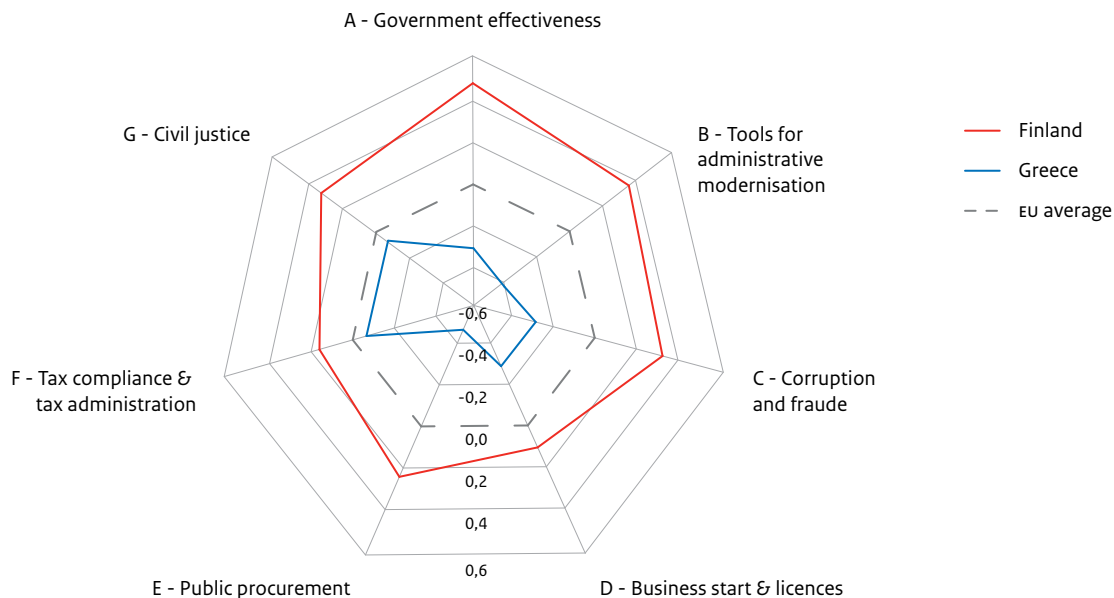
Why do some public administrations perform better than others? This is an important question because the performance of public administration is an important factor of a country's competitiveness and economic outcomes. Public administrations are usually typified by legal origins and administrative cultures (European Commission 2012). Basically, a distinction can be drawn between common law tradition and civil law tradition. Common law tradition has Anglo-Saxon roots, with passive regulation and steering and less state ownership and control; civil law tradition has continental roots, with high public intervention, active regulation and steering and more state ownership and control. The civil law tradition can be further subdivided along the lines of the strength of the legalistic focus and level of centralisation. Loughlin (1994) distinguishes between a Germanic-organicist and a French Napoleonic state tradition. The Scandinavian type is a mix of the first two. However, there is no evidence that differences in administrative culture will affect administrative and economic outcomes (European Commission 2012).

Determinants of performance must match the policy issues that play a role in the modernisation and improvement of public administrations. To improve public administration, the European Commission recommends that Member States create a better business environment (by simplifying rules), professionalise public administrations, improve the effectiveness and efficiency of administrations, improve the quality and independence of the judiciary, combat corruption and design an adequate multi-level governance system (Andor, 2014). According to the European Commission, economic growth and economic competitiveness are hampered in many Member States by inefficient public administrations, weak judicial capacity and legal uncertainty (European Commission 2014, p. 52). More specifically, seven themes and 21 indicators are identified to characterise public administrations in terms of economic competitiveness and to score each country on these indicators. Country-specific scoreboards are generated to improve each public administration on specific weak items. See spider graphs in Figure 7.11 for examples for Finland and Greece.

Three themes have a general administrative character and four themes are directly related to a business-friendly environment. The first general theme concerns government effectiveness (based on the World Bank Good Governance Index: wgi); the second concerns modernisation of public administration (based on three indicators: ec indicators on availability of business-related e-government services, Bertelsmann Sustainable Governance Indicators (Bertelsmann Stiftung (2014)) and the Post-Bureaucracy index described by Demmke and Moilanen (2010)); the third concerns the level of corruption and fraud (based on three indicators: diversion of public funds and irregular payments and bribes from the Global Competitiveness Report, and experience of corruption from the



Figure 7.11 Scoreboard of the best (Finland) and worst (Greece) performing country on public administration



Notes: The spider graph shows the deviation of summary country scores from the EU average. Positive values indicate better than average performance, negative values indicate below-average performance in the respective field. Source: European Commission (2012).

Eurobarometer). Modernisation of public administration, often under the banner of New Public Management (NPM), usually consists in the application of five instruments: (1) more electronic government; (2) more human resources management; (3) more performance orientation; (4) more service orientation; and (5) more market orientation of administration (European Commission 2012: 17).

To explain differences in governance outcomes, Lynn et al. (2000) developed a conceptual model, relating government performance to five governance components: environmental factors (including economic performance and competition and external control mechanisms); client characteristics; work processes and technology (including recruitment and eligibility); organisational structures (such as degree of centralisation and type of budgetary allocations); and managerial roles (including types of leadership and level of professionalism). Based on these five components we identify the following characteristics to explain differences in the performance of public administrations:

- 1 Economic performance;
- 2 Freedom of the press;
- 3 Salary structure of the civil service;
- 4 Quality of public administrative bureaucracy;
- 5 Spending on public administration and tax administration;



- 6 Level of decentralisation;
- 7 Intensity of ICT expenditure;
- 8 Traditional versus modern bureaucracies.

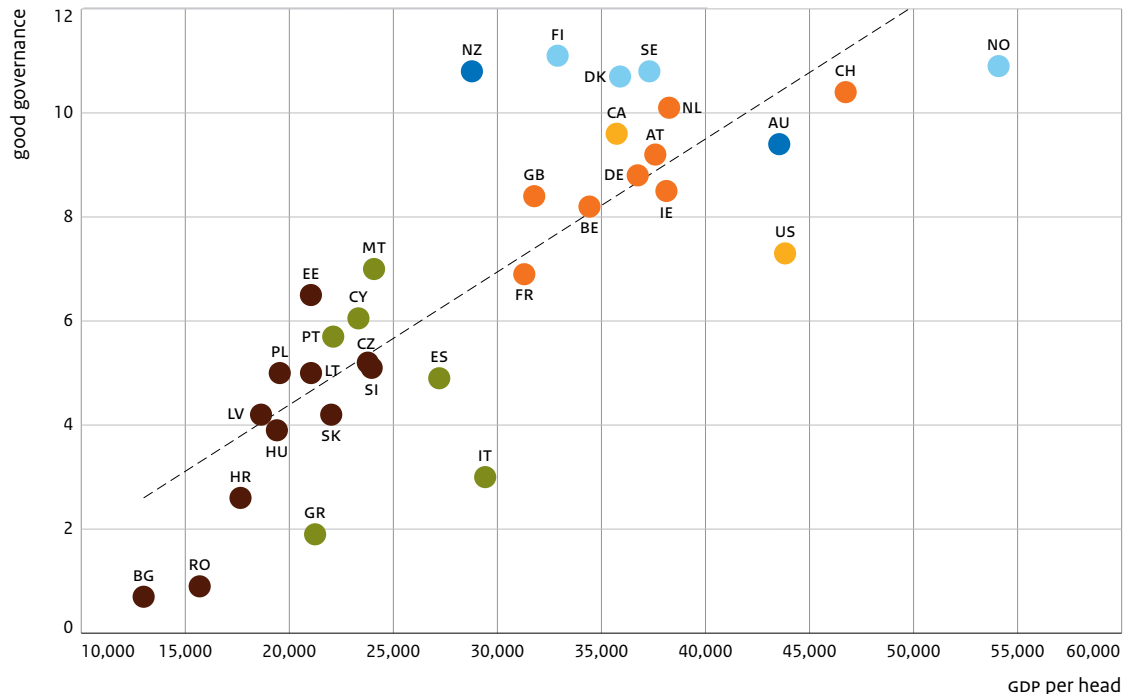
All these indicators are related to actual policy questions, and each of these administrative characteristics may influence the outcomes of public administration. The first indicator refers to economic welfare. Higher welfare is one of the enabling factors for better governance because it leads to political stability, less corruption and a stricter application of the rule of law. The second indicator, a free press, can be seen as a control mechanism that makes governments more accountable to the population. The third indicator should tell us something about the competitiveness of public sector salaries. Fourthly, better quality of public administrative processes contributes to better outcomes of public administration. The fifth indicator refers to the efficiency of the tax administration and gives an indication of total public administration efficiency. The hypothesis is that countries with efficient tax administrations have an efficient public administration that generates better public administration outcomes. The same holds for the seventh indicator on the share of ICT expenditure. The sixth indicator is a measure of decentralisation. In general it is assumed that public activities are most effective if they are provided by central or local authorities; mixed regimes seem to be most inefficient. Finally, reforms of the civil service using New Public Management tools are expected to generate better outcomes of public administration.

Of course, we have to be cautious about causal interpretations of these relationships. We need time series and grounded theory in order to establish a causal relationship, but that goes beyond the scope of this study. Another drawback is the measurement of the concepts of outcome and system characteristics, which sometimes overlap. For example, freedom of speech is part of the chosen indicator of good governance, but freedom of speech also forms part of the freedom of press. In these cases, special analyses are performed in order to separate the two concepts.

### 7.5.1 Economic performance

In general, even though it cannot be seen as a 'system characteristic' and is therefore not mentioned in Table 7.1, it is assumed that a well-performing public administration promotes countries' economic competitiveness (European Commission 2012). It is also argued that the quality of public administration is an important driver of Europe's competitiveness (European Commission 2014). However, the literature suggests that the relationship between governance and economic growth is not straightforward (Avellaneda, 2006). Although there is a broad consensus among economists and policymakers that good governance is a prerequisite for economic growth (Wagener 2004), the causality of this relationship can be



Figure 7.12 Relationship between good governance<sup>a</sup> and GDP per capita, 2013

a 'Good governance' for each country is the summarised score for the six separate indicators used to measure good governance by the World Bank. Source: World Bank (excluding Luxembourg).

challenged (Kurz and Schrank 2007). Albassam (2013) found that a country's level of development influences the relationship between governance and economic growth. He concludes that countries with different levels of development have different requirements and demands to improve governance in order to promote economic growth. We should therefore be cautious with causal interpretations of the relationship between good governance and economic performance.

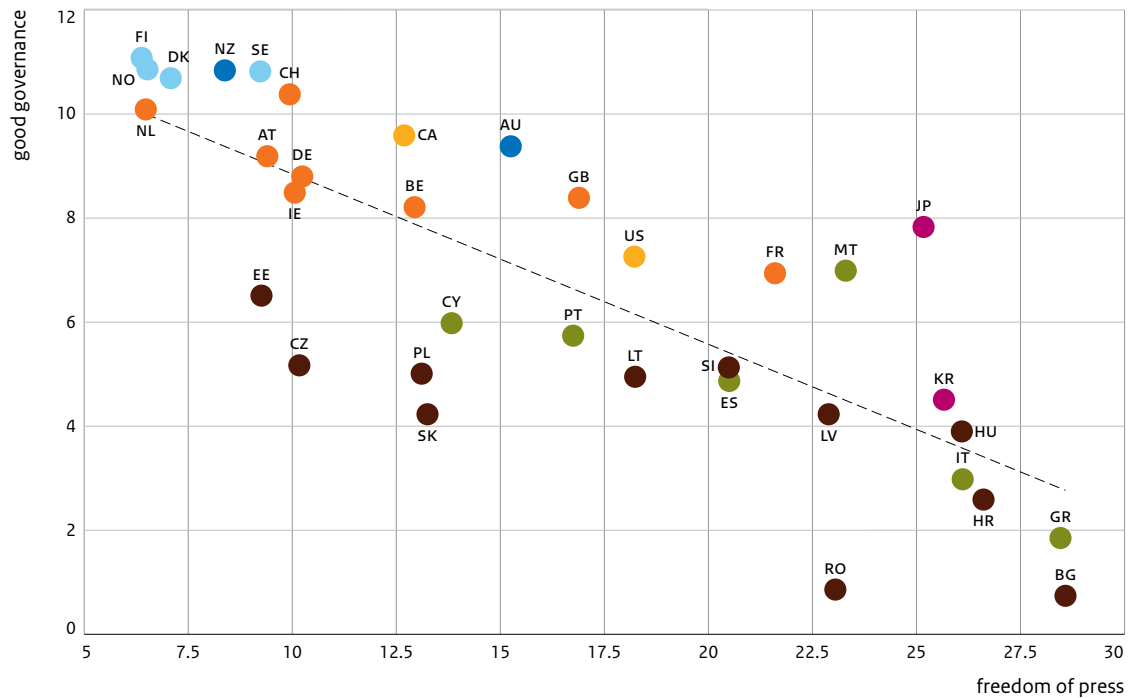
The correlation between GDP per capita (in purchasing power in us dollars) and good governance is fairly strong (0.81, excluding the GDP outlier Luxembourg) (Figure 7.12). Some countries underperform in view of their income (Italy, Greece, Romania, Bulgaria and United States).

### 7.5.2 Freedom of the press

With regard to fighting corruption, Neshkova and Rosenbaum (2015) cite three effective external control mechanisms: freedom of the press, an independent judicial system and bureaucratic professionalism. An independent judicial system is part of the definition of good governance ('rule of law') and bureaucratic professionalism will be discussed separately later.



Figure 7.13 Relationship between good governance and freedom of the press, 2013



Source: World Bank (good governance) and Reporters Without Borders (freedom of the press).

According to UNESCO, a free press promotes good governance because it tends to extend participation in the political decision-making process to the whole population, provides access to a whole variety of different ideas, opinions and information, makes governments more accountable to the population and allows policy implementation and the practices of those in power (such as corruption) to be monitored (UNESCO, Press freedom and development, 2008).

To measure the freedom of the press, we use the World Press Freedom Index (WPFI) prepared by Reporters Without Borders. They use six general criteria: the degree of pluralism; the degree of media independence; the environment in which journalists work and the degree of self-censorship; the quality and effectiveness of the legislative framework; the transparency of the institutions and procedures that affect the production of news and information; and the quality of the infrastructure that supports the production of news and information. These six criteria are measured and collected using surveys in different countries. A score is then calculated between 0 and 100, reflecting the level of violence against journalists. A low score represents a high level of freedom and a high score a low level of freedom (inverted scale).

Figure 7.13 reveals a fairly close relationship between freedom of the press and good governance.<sup>7</sup> High levels of freedom of the press are found in the Northern European countries and the Netherlands. Low levels are found

<sup>7</sup> Since freedom of the press is one of the elements in the first of the six dimensions of good governance, we performed an analysis without the first dimension. The (regression) results indicated no change in the relationship between good governance and freedom of the press. There is thus no tautological relationship between the two variables.



in some Southern (Greece, Italy), Eastern (Bulgaria, Croatia) and Asiatic countries (Korea, Japan). Japan has a rather high level of good governance and Romania a rather low level regarding the degree of press freedom.

### 7.5.3 Salary structure

As far as public salary levels and their effects on quality of government are concerned, two very different theories can be formulated. One, which we could call the 'Singapore model', operates on the assumption that public sector employees should be generously rewarded<sup>8</sup> so as to attract the best and cleverest and to stamp out incentives for corruption: 'The best-trained and most enthusiastic officials will not remain committed if they are not paid adequately' (Fukuyama 2014: 510-511). The second, what we could call the 'Norwegian' model pays civil servants relatively modestly. The idea is that civil servants should be intrinsically motivated to work for the public good and should not isolate themselves from their fellow citizens and the public services they provide, and should not be increasing costs of providing those services by receiving high salaries. Of course, both Singapore and Norway enjoy a robust and high quality of government. According to the World Bank Government Effectiveness Index, Norway is in the top 2% and Singapore the top 1% of the most effective governments in the world.<sup>9</sup> Both high and modest public salary levels apparently can therefore produce effective governments.

According to Figure 7.14, (senior) public administrators in Norway, Sweden, Finland, Estonia, Slovenia, the Slovak Republic and Greece receive comparatively low salaries, while their counterparts in the United Kingdom, Portugal, Poland, France, Belgium, Austria, Japan and especially Italy receive quite a lot more. The income differential between (low) senior-level civil servants and secretariat-level employees in the public sector is also higher in the latter group. Why is the relative pay level for D2 and D3-level public civil servants in Italy so high? Following legislative reforms in 1993, one central agency (ARAN) representing public administration at the central level replaced many different organisations which had previously intervened in the negotiation process (Dell'Aringa et al. 2007: 450). This strengthened the bargaining position of civil servants. In addition, since around 1995, top-level Italian public servants have managed, by exploiting their favourable political situation, to increase their salaries substantially (Dell'Aringa et al. 2007: 454).

Of course, it is very difficult to determine which of the two models – Singapore or Norwegian – is preferable. It may even be the case that both models work well in different environments. The evidence is mixed. For example, a decline in public sector pay after the mid-1970s does correlate with a reduction in average test scores for those entering the civil service in the early 1990s, but this effect is only observed for men, not for women (Nickell and Quintini 2002). And of course, pay is only one of many job

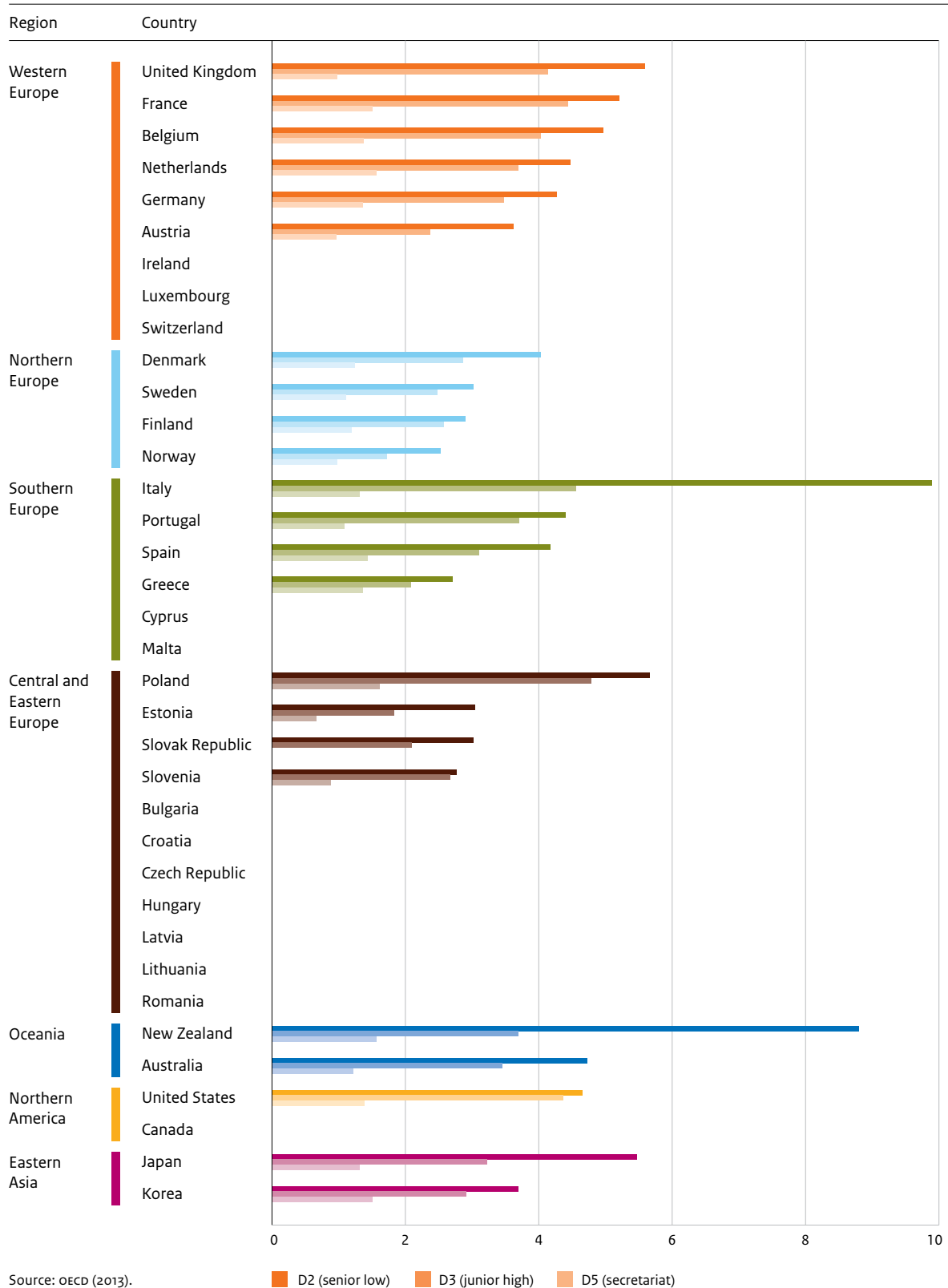
8 See <http://www.bloombergview.com/articles/2012-01-25/why-singapore-has-the-cleanest-government-money-can-buy-view>

9 Singapore achieves an excellent score on government effectiveness and regulatory quality, scores well on three other dimensions of good governance (political stability, rule of law, control of corruption) but scores rather moderately on accountability (voice of the people, freedom of expression, freedom of association and free media). Norway performs well to excellently on all six dimensions of good governance.



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Figure 7.14 Salaries of public administrators relative to GDP per capita, 2011



Source: OECD (2013).





attractions: public sector employees are also attracted to the job security and the chance to do something useful for society (Lewis and Frank 2002). Based on OECD data, we looked for correlations between senior-level public sector pay and a total of 14 public sector-related outcomes for 28 of our in total of 36 selected countries: infant mortality, PISA scores, corruption, trust, youth unemployment, etc.. Without exception, the correlations are low (below 0.4) and not statistically significant. However, ten of the total of 14 correlations investigated were negative, indicating that higher public salaries tend to coincide with decreasing public sector performance. Increasing public sector pay therefore does not seem to guarantee better public sector results.

Salaries are not related to public administration performance indicators. Apparently, rewarding civil servants better does not influence public administration outcomes.

#### 7.5.4 Quality of the public administration bureaucracy

Several studies have looked at the quality of the public administration bureaucracy. Where the quality is higher, the outcomes of public administration are also expected to be higher, or results are expected to be achieved more efficiently. Galanti (2011) distinguishes between several dimensions of a good bureaucracy:

- a Structural differentiation. Homogeneity in organisational models; absence of duplication of offices; existence of mechanisms for coordination.
- b Ability in the management of resources. Evaluation of: government expenditure revenues; budget deficit and public debt; size of personnel and their remuneration.
- c Competence. Levels of professionalization and evaluation of career paths: levels of education; continuous training; promotion based on merit systems.
- d Accountability and responsibility. Clear setting of performance standards. Presence and implementation of ex-post evaluation procedures.
- e Autonomy in public administration. Cultural homogeneity of the administrative elite. Levels of politicisation (participation of bureaucrats in parties or interest groups, membership or candidatures; extent of administrative turnover following elections);
- f Openness towards citizens/society. Existence of transparency and anticorruption measures; perceived levels of corruption; accessibility of information and offices; actual possibility to challenge the actions of public officials in court.

The data used by Galanti (2011) to measure the quantitative aspects of the quality of the bureaucracy are derived from generally accessible sources. Structural differentiation is analysed more qualitatively/descriptively. This requires extensive analysis of policy documents and regulation. Ability is



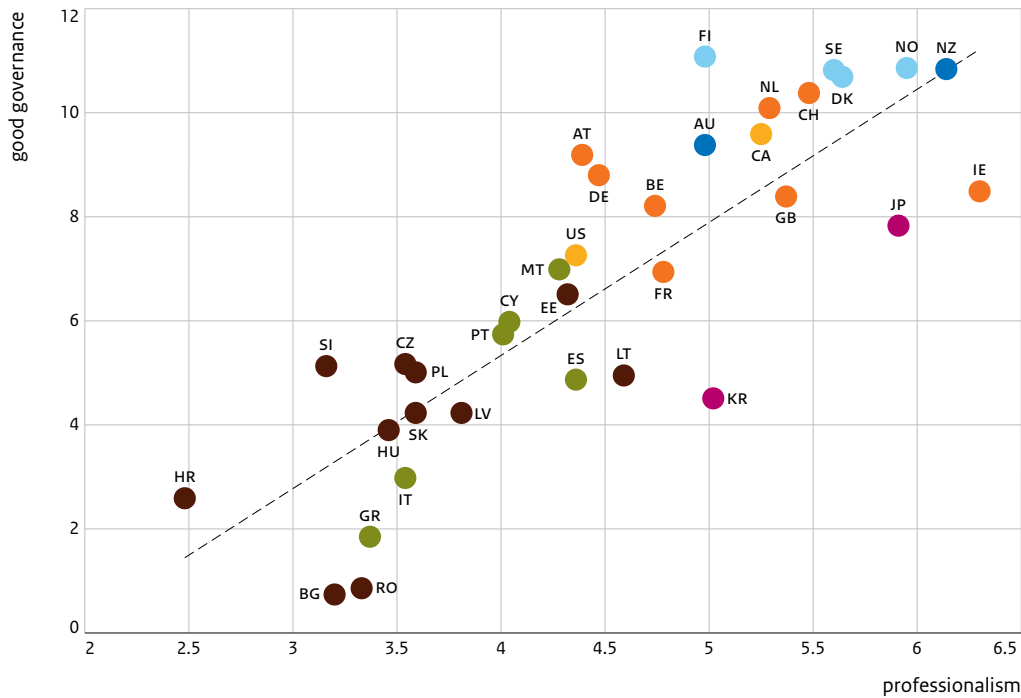
measured by looking at the balance between government expenditure and government revenues and the salaries of government employees. For competence, Galanti looks at the presence of procedures. A composite index on the use of performance assessment is used as a proxy for merit-based systems of recruitment. Additionally, two indices are used to measure performance with regard to technological development or e-government. Accountability is measured by looking at three indices. Autonomy is analysed descriptively and is quantified using an index for “assessing how much strength and expertise bureaucrats have and how able they are to manage political alternations without drastic interruptions in government services or policy changes” (Galanti 2011, p. 23). Finally, three indicators are used to determine the openness of the bureaucracy towards society.

Peter Evans and James Rauch did pioneering work in collecting information through surveys about bureaucracies from various countries for the period 1970 – 1990 (see Rauch and Evans 2000; Evans and Rauch 1999).<sup>10</sup> The Quality of Government institute continued this approach, incorporating more countries.<sup>11</sup> The starting point is that the employment system in the public sector offers a useful means of classifying public bureaucracies in comparable public administrations. Dahlström et al. (2011) collected eight items representing the main employment-related characteristics of a Weberian bureaucracy. Based on a factor analysis of this dataset, they distinguish between three dimensions of bureaucracy: professionalism, closeness and salaries. Professionalism concerns the extent to which bureaucracies are ‘professional’ as opposed to ‘politicised’. Closeness monitors the presence of barriers to entering (or leaving) the civil service. In closed systems, public employees enter the administration through formalised civil service entry examinations, enjoy lifelong tenure and are frequently managed by self-regulated, autonomous administrative bodies. Professional administrations are characterised by meritocratic recruitment, internal recruitment of senior officials and absence of political appointments of civil servants. The two dimensions identified by Dahlström et al. relate to Galanti’s (2011) competence and autonomy dimensions. Although the authors initially propose only these two dimensions, their empirical findings suggest that ‘salaries’ comprise a third, separate dimension. This dimension refers to the competitiveness of salaries in the public administration compared to the private sector. Although this approach does not measure quality of bureaucracy, it does provide important information on distinguishing characteristics of bureaucracies which can be helpful in explaining differences in performance between countries. Information from Dahlström et al. (2011) can be used to determine how the bureaucracies of the various countries can be characterised. Since professional and open bureaucracies are supposed to perform better, we reversed the sign of closeness in order to produce the dimension ‘openness’. The relationship between the openness of the public administration and good governance is rather weak (0.31), but the relationship between the professionalism of public administration and good governance is very

<sup>10</sup> [http://econweb.ucsd.edu/~jrauch/research\\_bureaucracy.html](http://econweb.ucsd.edu/~jrauch/research_bureaucracy.html)  
<sup>11</sup> <http://www.qog.pol.gu.se/data/datadownloads/qogbasicdata/>



Figure 7.15 Relationship between good governance<sup>a</sup> and level of professionalism of public administration, 2013



<sup>a</sup> 'Good governance' for each country is the summarised score for the six separate indicators used to measure good governance by the World Bank. Source: World Bank (good governance) and Dahlström et al. (professionalism).

strong (0.84). Well-performing administrations apparently require recruitment of professional personnel (Figure 7.15).

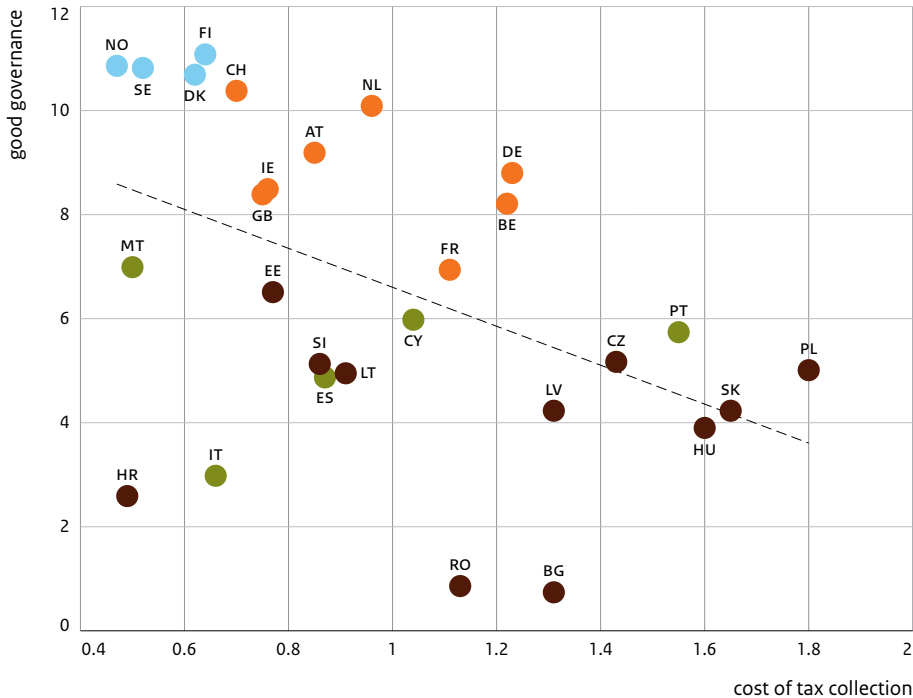
There are some overperforming and some underperforming countries. Finland, Austria and Germany perform better than we would expect from the professionalism score. On the other hand, Bulgaria, Romania, Korea, Japan and Ireland could be expected to perform better given their professionalism score. The same applies to a lesser degree to Greece and some Baltic states.

### 7.5.5 Spending on public administration and tax administration

In general, spending more on something will generate better results. We would therefore expect countries which spend more on public administration to perform better. However, the previous study of public performance found no relationship between expenditure and performance (Jonker and Boelhouwer 2012). Apart from problems of definition and measurement, it was concluded that efficient and effective structuring of public sectors is more important than the amount of money invested. On the contrary, large public sectors in terms of money and personnel usually indicate



Figure 7.16 Relationship between good governance<sup>a</sup>, 2013, and cost of taxation (% of tax revenue collected)<sup>b</sup>, 2012



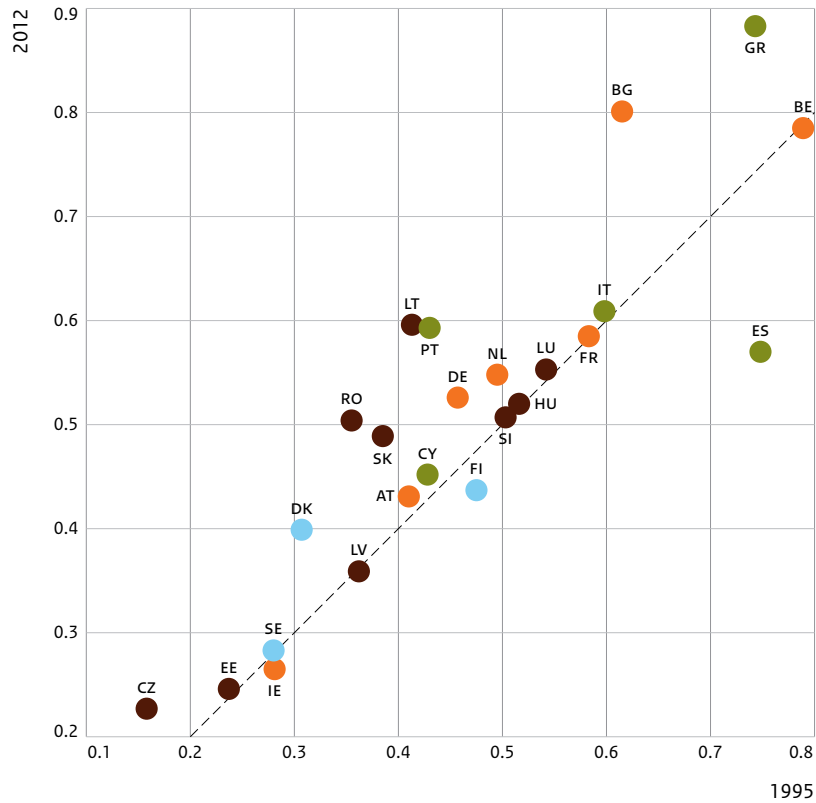
a 'Good governance' for each country is the summarised score for the six separate indicators used to measure good governance by the World Bank. b Taxation data were not available for all our selected countries through IOTA, and not all countries are therefore mentioned in this figure. Source: World Bank and IOTA.

inefficient rather than effective outcomes. The same probably holds for public administration, where the financial input as a share of GDP is negatively correlated with good governance (-0.20) and business-friendliness (-0.31). For example, Greece (and to a lesser degree Italy and Hungary) spends a good deal on public administration but performs poorly on good governance; on the other hand, Norway (and to a lesser extent Finland and Sweden) spends little but performs well. The same applies for business-friendliness.

Even more striking is the negative relationship between the cost of tax collection and good governance (Figure 7.16). Countries with lower tax collection costs perform better than countries with higher costs, although the correlation is not strong (-0.45). This relationship probably expresses the fact that efficiency generally corresponds with good performance. This interdependence, where 'all good things come together', indicates that building a good public administration where none yet exists is an example of a so-called 'wicked problem' (Menkhaus 2010). Hauner and Kyobe (2008) conclude in a meta-study that throwing money at problems, particularly in the education and health sectors, often fails to yield the expected improvement in public services if not bolstered by efficiency-enhancing policies.



Figure 7.17 Share of central government expenditure (including social security spending) in total government expenditure, 1995 and 2012



Source: Eurostat (no data available for Croatia, Malta, Norway, Poland, Switzerland, United Kingdom and non-European countries).

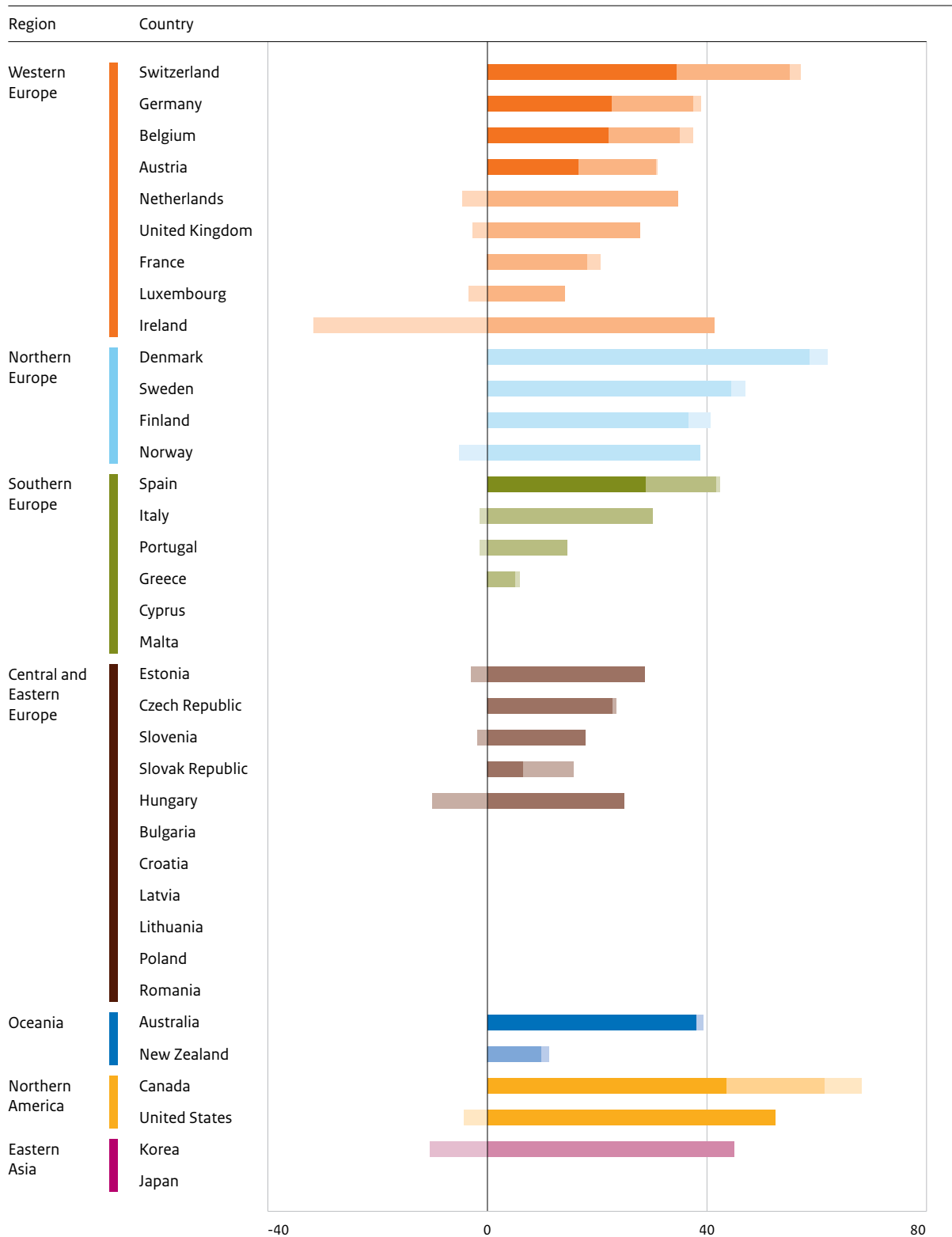
### 7.5.6 Degree of (de)centralisation of government expenditure

In general, the degree of centralisation matters. Fukuyama (2014: 511), for example, argues forcefully that bureaucratic autonomy – and therefore also a degree of decentralisation – is important for the proper functioning of government. Mixed regimes perform worst, because these regimes are more likely to duplicate services, organise complex regulations and generate fragmented responsibilities (European Commission 2012: 15). Mixed regimes have to develop mechanisms (mutual contracts) to facilitate vertical and horizontal coordination. Thus either centralised or decentralised governments seem to be the most efficient. However, much theoretical discussion is generated around the trade-off between the two kinds of regimes: providing customised services in a competitive environment (decentralised regimes) against economies of scale and scope (centralised regimes). The empirical evidence seems to be ambiguous, and not clearly in favour of either a low or high degree of centralisation (European Commission 2012:L 16). We define ‘centralisation’ here as the share of central government expenditure in total government expenditure (which, of course, is different from having a federalised or unitary government structure).



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Figure 7.18 Share of local and state expenditure in total government expenditure, 2001 and 2013

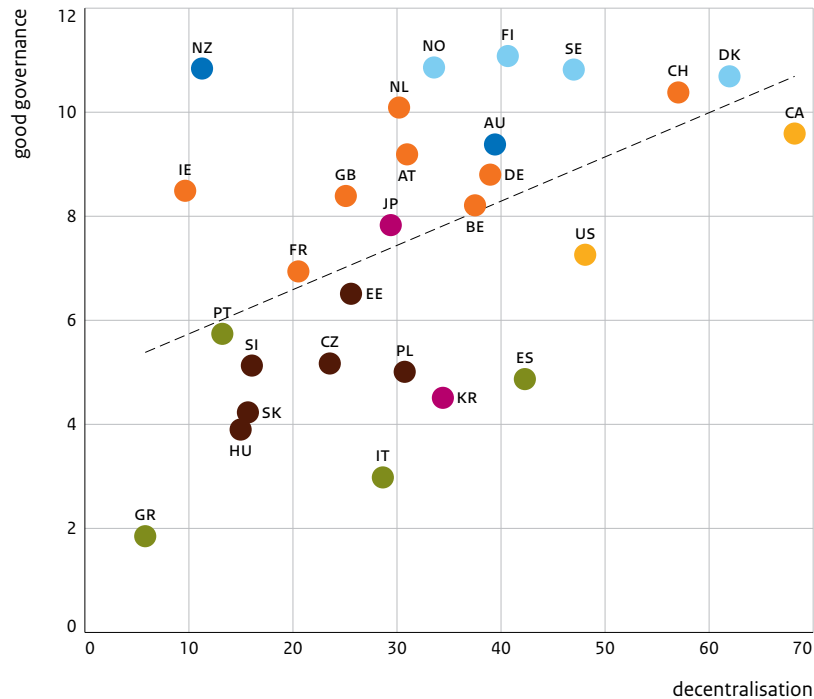


Note: Total government = central government + social security + state government + local government. Source: OECD (2015).

state government 2001 local government 2001 change local+state 2001 > 2013



Figure 7.19 Relationship between good governance and level of decentralisation (=share of local and state expenditure in total government expenditure), 2013



Source: World Bank and OECD (2015).

The degree of centralisation, measured by the share of central government expenditure (including social security) in total government expenditure, varies considerably across countries (Figure 7.17). Nordic and Baltic countries, like Switzerland (not presented in figure 7.17), have low levels of centralisation, while some Southern European countries (Greece, Spain) and Belgium have high levels of centralisation. Eastern and Western European countries are mixed. In general, the degree of centralisation increased between 1995 and 2001 and more or less stabilised between 2001 and 2013 (Figure 7.18). Only Ireland really centralised between 2001 and 2013, while the Slovak Republic decentralised.

Decentralisation corresponds with better governance (Figure 7.19); the correlation is fairly weak, but is statistically significant (0.45).

### 7.5.7 Intensity of ICT expenditure

According to the European Commission, promoting ICT use is one of the areas of public administration modernisation that appears to have the highest potential to improve both the processes inside the bureaucracy (internal management) as well as the external relationships with citizens and



businesses (European Commission 2012: 111). Improved use of e-government applications is thus a central characteristic of many public administration reforms in recent years. The availability of ICT applications in public administration is therefore one of the tools for administrative modernisation in the European Commission's scoreboard of countries. Better e-government may also be associated with lower corruption levels as well as with reduced bureaucratic delays and higher trust by citizens in the public administration (European Commission 2012: 110). In general, therefore, we could expect a higher level of government ICT expenditure to be correlated with improved outcome measures and better governance. This positive relationship does indeed appear, especially as far as business-friendliness is concerned (Figure 7.20).

Business-friendliness is highest in New Zealand, which also has the highest share of ICT expenditure. Clearly, however, expenditure alone does not offer a complete explanation: Italy, Austria and Germany spend about the same (small) amount of money on ICT, but business-friendliness is notably higher in Austria and Germany. According to the European Commission, further optimising e-government services requires reorganisation of backoffices, development of common technical platforms across all levels of government and higher take-up rates in the business sector (European Commission 2012). These developments not only need money but also organisational reforms.

### 7.5.8 Traditional versus modern bureaucracies

According to Demmke and Moilanen (2010), we can distinguish between traditional and modern bureaucracies. Modern administrations tend to be more diverse, more flexible, more representative and less hierarchical and less separated from the citizenry. Traditional bureaucracies represent clear values, such as hierarchy, formalism, standardisation, rationality and obedience. Demmke and Moilanen (2010) constructed an index based on detailed analyses of 27 OECD countries, indicating modern management by the degree to which various human resource management (HRM) tools have been implemented. The authors derived the index by aggregating indicators on a scale from 0 to 100 for:

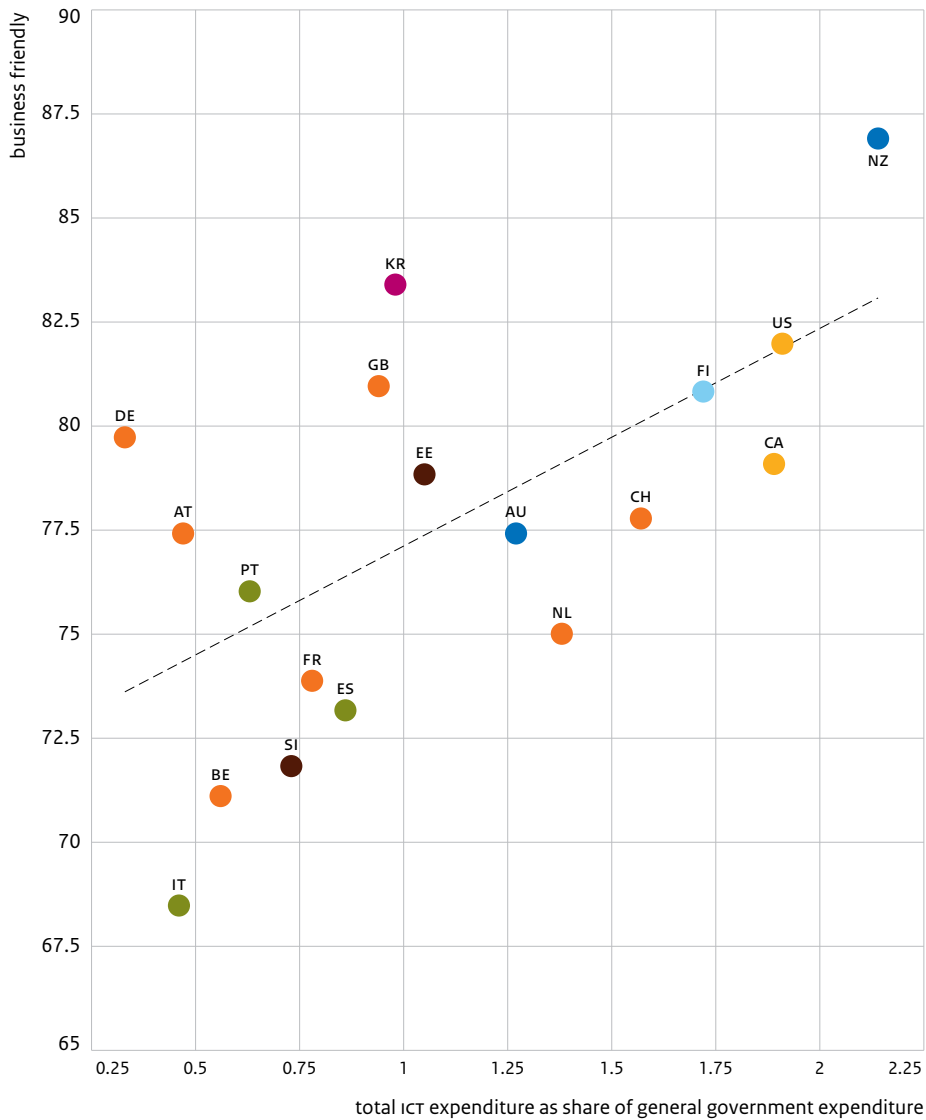
- legal status of employees (public law civil servants vs. employment based on private law);
- career structures (regulated insider promotions, etc.);
- recruitment (special requirements, private sector experience);
- salary systems (seniority, performance-based, regulated by law);
- tenure system (lifetime tenure, special job security).

Low scores indicate a traditional management style and high scores a modern management style.





Figure 7.20 Relationship between business-friendliness and share of ICT expenditure, 2011



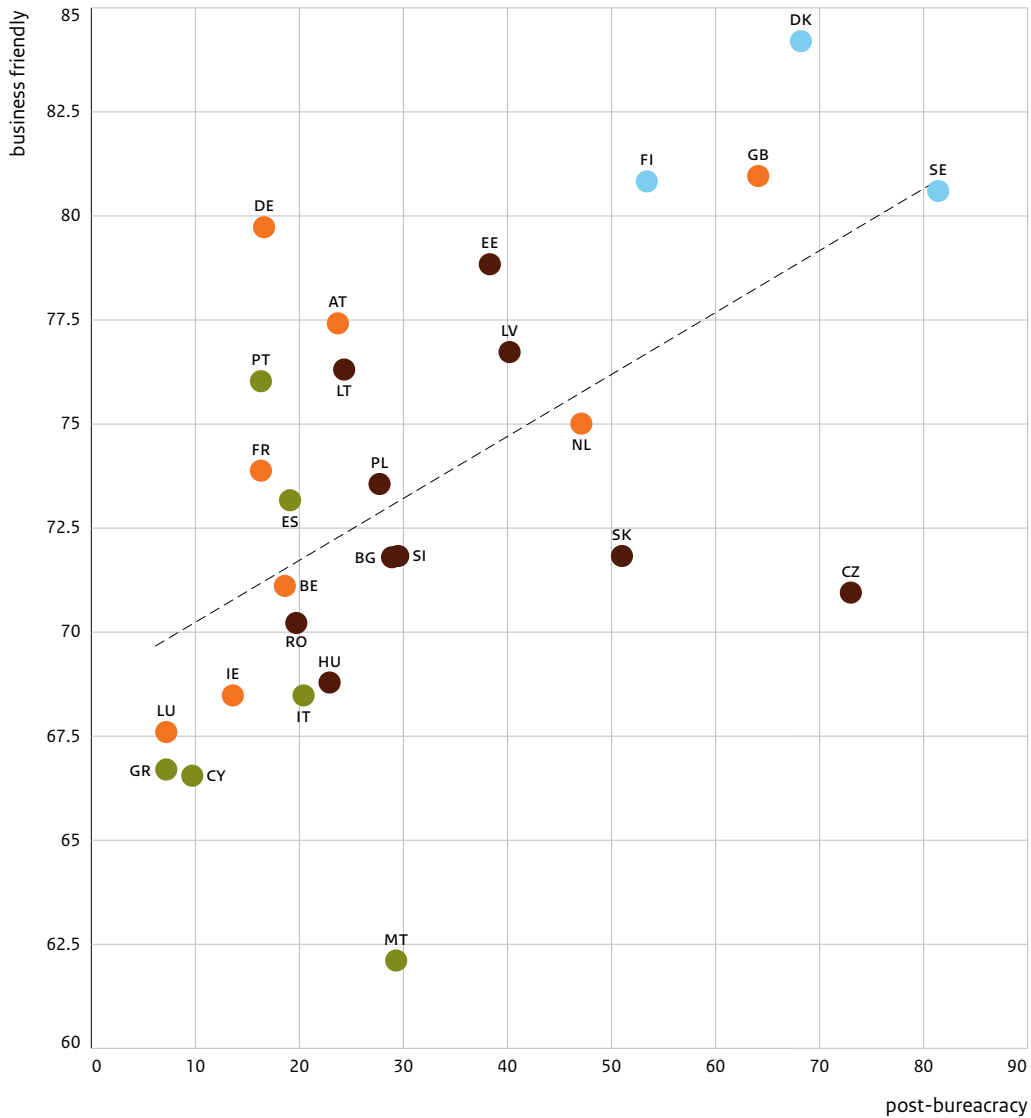
Source: OECD (2013).

There is a significant but weak relationship between modernisation of bureaucracies and good governance. The advantage of modernisation is a more business-friendly public administration. If government wants to promote economic growth, modernising the public administration through greater use of HRM tools may contribute to this objective (Figure 7.21).

Because some countries deviate significantly from the general pattern (Malta, Czech Republic), the relationship between modernisation and the business-friendliness of public administrations is significant but moderate



Figure 7.21 Relationship between business-friendliness of public administrations, 2015, and postbureaucracy, 2010



Source: World Bank (2013).

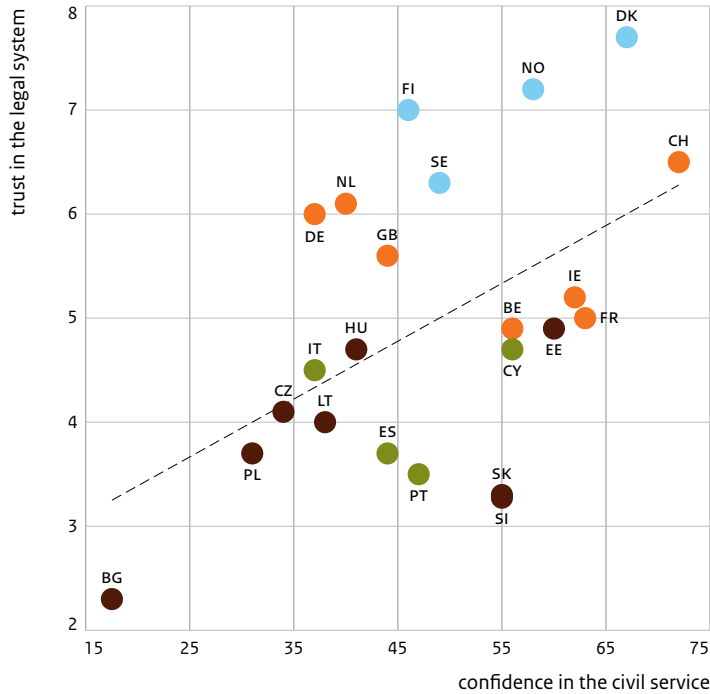
(even though there are a few countries such as Germany that do not fit the general pattern). If we remove both outliers from the dataset, the correlation rises to 0.75, which is quite strong.

### 7.6 Citizens' perceptions of the quality of the public administration

Do citizens have confidence in the civil service of their own country and in their legal system? These confidence questions are included in the European Values Study and European Social Survey. Some information on



Figure 7.22 'A great deal' or 'quite a lot' of confidence in the civil service (%) and trust in the legal system (score between 0-10)



Note: No information on trust in the legal system is available for Austria, Luxembourg, Greece, Malta, Romania, Latvia, Croatia and non-European countries. Source: European Values Study (confidence in civil service, 2008), European Social Survey (trust in legal system, 2012).

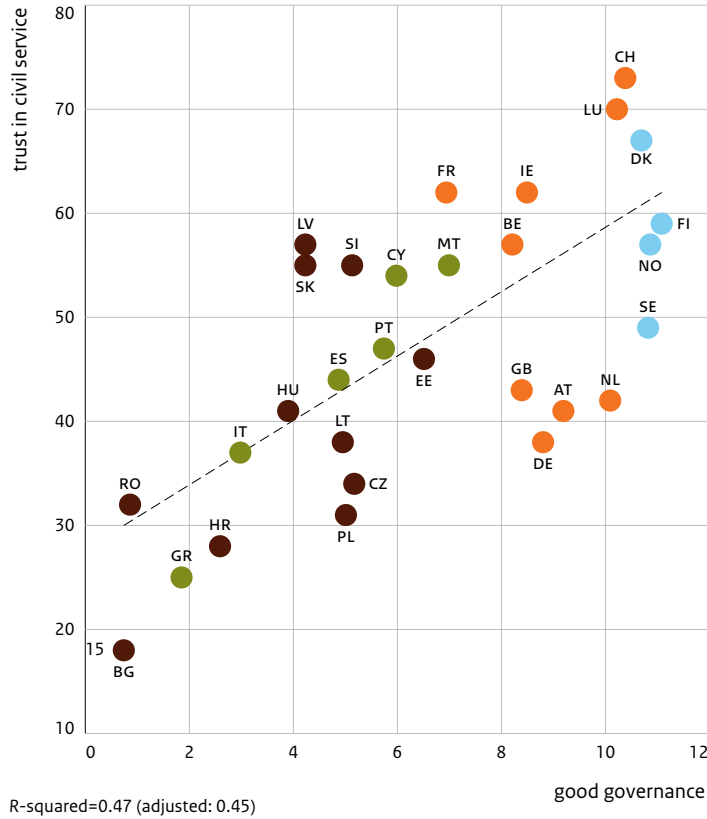
confidence in the civil service can be drawn from the World Values Survey (wave 6, 2010-2014).

The Swiss and people in the Northern European countries have most confidence in their civil service, while in general citizens of Central European countries have the lowest confidence levels as far as their civil service is concerned. However, we also find remarkable differences within geographical clusters, for example between Germany and France or between Estonia and Bulgaria. There is a fairly strong relationship between confidence in the civil service and trust in the legal system. In the Slovak Republic confidence is average but trust very low, but in most other countries higher trust in the legal system correlates with higher confidence in the civil service. Compared with most Northern and Western European countries, confidence in the civil service is rather low in non-European countries: barely 40% in Australia, New Zealand and the us and barely 30% in Japan (World Values Survey 2010-2014).

Finally, we collected a considerable amount of data from experts and all kinds of statistical and other agencies. Does a population know when it has



Figure 7.23 Good governance and ('a great deal' or 'quite a lot' of) trust in the civil service



Sources: World Bank (2013) and European Values Study (2008).

a good public administration? Their answer appears to be ‘yes’: there is a relationship between the good governance score assigned to each country by experts and the trust and confidence shown by citizens themselves in the public administration and civil service.

As can be seen in Figure 7.23, civil services that perform better, are generally also more trusted by their citizens. The correlation is even quite high (0.69). Therefore, contrary to Kettl’s (2015, p. 8) conclusion, good public governance does appear to improve or at least correlate with higher public trust in government. And of course, when a population trusts its civil service, it makes it easier for the civil service to improve the quality of government.

### 7.7 Conclusions and discussion

A considerable number of indicators were collected for this chapter to measure the quality of ‘public administration’. The World Bank Good



Table 7.6 Summary of results: relationship between outcome and system characteristics (Pearson's r)

	Good governance	e-Government	Business friendliness	Rule of law
Share of expenditure	-0.20	-0.07	-0.32	-0.16
Share of labour	0.11	0.05	0.03	0.20
Professionalism	<b>0.84</b>	<b>0.69</b>	<b>0.61</b>	<b>0.80</b>
Openness	0.31	0.24	<b>0.49</b>	0.21
Decentralisation	<b>0.45</b>	<b>0.59</b>	<b>0.52</b>	<b>0.55</b>
Share of tax administration	<b>-0.45</b>	<b>-0.38</b>	-0.18	<b>-0.49</b>
Post-bureaucracy	0.35	<b>0.42</b>	<b>0.59</b>	0.30
Structure of salaries	-0.10	-0.07	-0.10	-0.22
Freedom of press (reverted)	<b>0.80</b>	<b>0.45</b>	<b>0.51</b>	<b>0.62</b>
Share of ict expenditure	<b>0.56</b>	<b>0.48</b>	<b>0.64</b>	<b>0.53</b>
GDP per capita	<b>0.74</b>	<b>0.54</b>	0.25	<b>0.78</b>

Notes: Bold = significant (5%), italic = significant (10%). Source: See relevant figures.

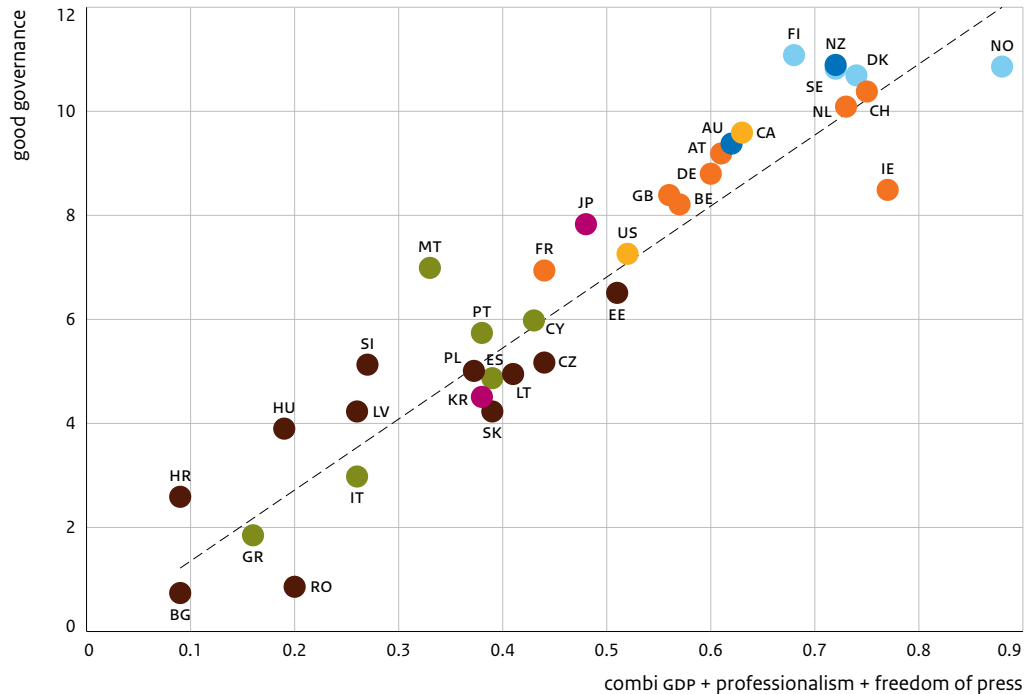
Governance indicators constitute an influential set of indicators that measure good governance on six dimensions. These dimensions are (highly) correlated, indicating that they measure the same latent construct (good governance). The Scandinavian countries, Oceania and Northern America, in particular, enjoy high levels of good governance, while governments in Central and Eastern and Southern Europe are far less effective and reliable. Government effectiveness has decreased considerably since 1996 in the Southern European countries, especially Greece.

We have tried to relate certain structural characteristics of the public administration to those outcome measures of good governance. Our main results are summarised in Table 7.6. In this table, four key public administration outcome indicators – one overall index ('good governance') and three specific indices – are correlated with eleven structural characteristics.

What can we conclude from this table? First, some structural characteristics seem to matter more than others. For example, the size of (central) government (share of expenditure) is not related to our four outcome measures. Four structural characteristics are however significantly and positively related to all four outcome measures: *share of ict expenditure*, *professionalism*, *level of decentralisation* and *freedom of press*. 'Professionalism' and 'freedom of press', especially, appear to be very important characteristics. They are not only the most strongly correlated with our outcome measures, but it may be assumed that the direction of any causal link is also more evident than in the case of ict expenditure: a professional, independent administration based on meritocracy rather than political appointments



Figure 7.24 Relationship between good governance and a scale [0,1] representing a combination of professionalism of public administration, freedom of the press and gdp per capita, 2013



Source: World Bank (good governance); oecd (GDP); Dahlström et al. (professionalism); Reporters Without Borders (freedom of the press).

and favourable conditions for a free press increase the quality of public administration. Another important structural characteristic is GDP per capita, which is significantly and positively related to three of our four outcome measures. Of course, cause and effect will very likely be mingled as far as this structural characteristic is concerned. A high GDP per capita enables a country to build its state capacity (Fukuyama 2014) and, for example, invest in ICT, which improves public administration. On the other hand, a well-functioning public administration is an important condition for economic growth. A fifth important structural characteristic is the efficiency of the tax administration. An efficient tax administration is probably an overall characteristic of good governance, because only countries with a certain minimum state capability are able to efficiently extract taxes from their populations. Finally, decentralisation is significantly and positively correlated with three of our four outcome measures. Even though, as we have mentioned, there does not seem to be a general consensus in the literature as to whether centralisation or decentralisation is beneficial, our data do seem to indicate that decentralisation improves the performance of a public administration.

To determine the most important and significant contribution of relevant characteristics, we regressed them all on the factor 'good governance'. Three characteristics remained after this exercise as the most interesting



and significant: the level of professionalism, the degree of press freedom and GDP per capita. Together they explain about 88% of the total difference in good governance between countries, which is rather high. Figure 7.24 presents the relationship between the combination of these three factors and good governance.<sup>12</sup> The combined scale is calculated using the methodology of the World Bank. The resultant scale varies between 0 and 1.<sup>13</sup>

When looking at good governance, some contrasts stand out. At a low level of good governance, Bulgaria performs less well than we would expect on the determining characteristics, and Malta performs better. At a high level, Ireland and Norway perform less well than expected. One reason may be that Norway is a very wealthy country thanks to its large oil and gas reserves, making it difficult to translate this into a correspondingly higher level of good governance. Another reason may be that Norway underperforms on the sixth dimension of good governance – regulatory quality – indicating that Norway could do better in formulating and implementing sound policies and regulations to promote private sector development in proportion to the score on the three combined characteristics. The low score of Romania can be attributed to the higher level of corruption and the lower level of government effectiveness than would be expected from the score of the three combined characteristics. Finally, Malta shows a higher level of political stability and Ireland a lower level of political stability than would be expected on the basis of the three explanatory characteristics.

12

A new scale is constructed (based on World bank methodology), ranging from 0 to 1:  $(x - \min) / (\max - \min)$ , where  $x$  is the actual value and  $\min$  and  $\max$  are minimum and maximum values, respectively, of the old scale.

13

The combined scale is constructed by calculating the sum of  $(x - \min) / (\max - \min)$ , where  $x$  is the actual value and  $\min$  and  $\max$  the minimum maximum values, respectively, of the selected characteristics for the selected countries, and dividing the result by the number of characteristics.

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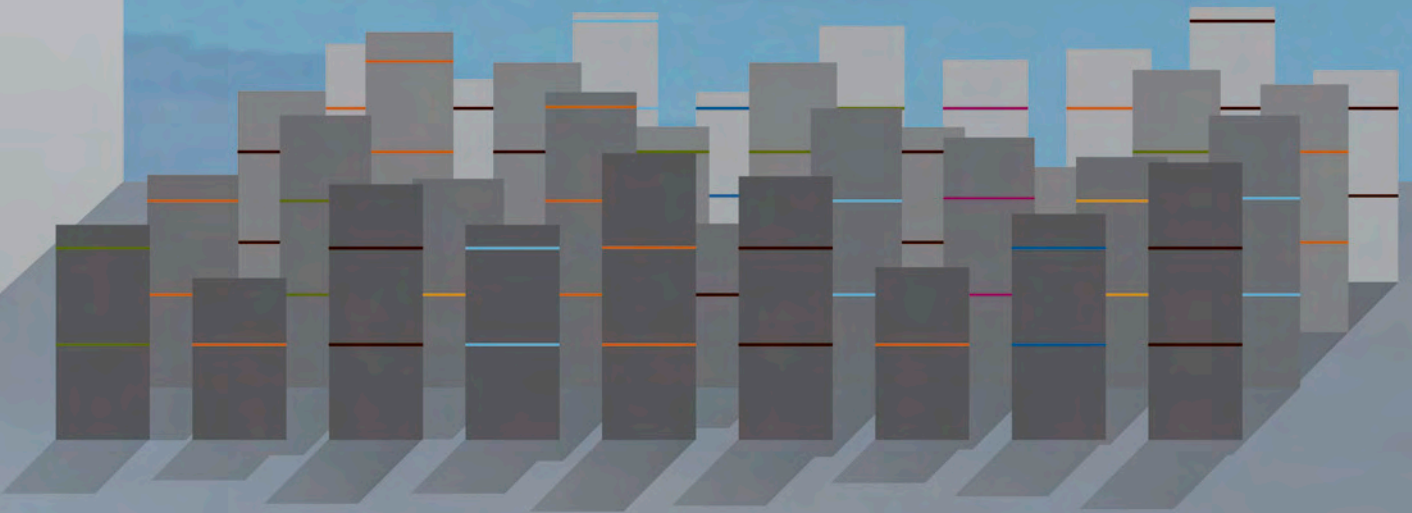


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Part IV

# Preliminary analysis





# A first inventory of three other sectors

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## 8.1 Introduction

*A first inventory of the performance in three other sectors*

The foregoing chapters describe six sectors in detail, following the heuristic model presented in Chapter 1. This chapter will briefly examine the performance of countries in three other sectors: 1) economic affairs and infrastructure; 2) environmental protection; and 3) sport, culture and participation. As already mentioned in Chapter 1, only the outcomes and inputs (in terms of expenditure) for these sectors will be examined. Outcome indicators have been chosen to provide an insight into the performance of the sectors. Most of these indicators can be influenced by policymakers, but for some sectors (for instance sport, culture and participation), their scope of action is very limited. Instead of government spending, some outcome indicators are influenced mainly through accommodation, regulation and legislation, or by private expenditure. Unlike the previous chapters, this chapter will include neither outputs nor citizens' perceptions of the quality of the sectors. Nor will this chapter look at developments over time, but will instead focus on the most recent available data for outcomes and inputs only. Presenting only a restricted overview of these sectors is partly due to the less straightforward relationship with general government, and to the limited availability of the information. The results are intended as a starting point for a more extensive approach as has been adopted for the other sectors.

*What is the goal of this chapter?*

The goal of this chapter is to provide an overview of the performance of the remaining three public sectors, given the limitations mentioned in the previous paragraph. By doing so, this chapter aims to contribute to the insight into the performance of the public sector as a whole. For each public sector, different outcome indicators are described and the performance on these outcomes are compared between the various countries and regions. In addition, countries' inputs in the three public sectors are presented and compared in terms of financial investment.

*Structure of the chapter*

The structure of this chapter differs from that of the other chapters, as it describes three public sectors. Each public sector is presented in a different section. In section 8.2 we describe the public sector of economic affairs and infrastructure. Section 8.3 examines the public sector of environmental protection, while Section 8.4 investigates the public sector of sport, culture and participation. Each section starts with a short introduction including an



overview of the indicators used for that specific sector, followed by three subsections focusing on outcomes, inputs and conclusion.

## 8.2 Economic affairs and infrastructure

The sector economic affairs and infrastructure consists of two distinctly different components. Economic affairs concerns a country's economic growth, covering a range of areas such as economics, industry, mining, trade, energy policy, agriculture, fishery and tourism. The public sector plays a limited role in economic affairs. Besides economic affairs, this sector also includes investments and maintenance of various infrastructures, which are more closely connected to the public sector. In most countries, governments are responsible for building and maintaining various types of infrastructures and ensuring their quality and safety.

### *Indicators for economic affairs and infrastructure*

Three different indicators are used to measure the outcome performance of this public sector; one for economic activities and two for infrastructure (Table 8.1). As an indication for the input for this sector, we present the general government expenditure on economic affairs and infrastructure as a percentage of national GDP for each country.

Table 8.1 Outcome and input indicators used in this section and corresponding data sources

Level	Indicators	Sources
Outcome	Global Competitiveness Index	World Economic Forum
	Quality of infrastructure	World Economic Forum
	Number of fatal traffic accidents	OECD / Community database on Accidents on the Roads in Europe
Input	General government expenditure (% of GDP)	Eurostat / OECD

### 8.2.1 Outcomes

#### *Global competitiveness as an indicator for economic affairs*

Three indicators have been selected to assess the outcome of the public sector of economic affairs and infrastructure. First, performance on economic activities is measured using the Global Competitiveness Index (GCI) (Schwab, 2014). This index measures the "microeconomic and macroeconomic foundations of national competitiveness" (Schwab, 2014, p. 4). Various components, which are grouped under 12 different pillars, contribute to the GCI. These pillars are institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labour market efficiency, financial market development, technological readiness, market size, business

sophistication, and innovation. High GCI scores can be interpreted as having a high level of productivity, and thus a high level of economic prosperity (Schwab, 2014).

*Quality of infrastructure and number of fatal traffic accidents as indicators for infrastructure*

The Executive Opinion Survey of the World Economic Forum (WEF) contains a question on the overall quality of the infrastructure (Schwab, 2014). This quality refers to the infrastructure of transport, telephony and energy. In addition, we present information on road safety for the infrastructure of transport measured solely by the number of fatal traffic accidents per million inhabitants. The underlying assumption is that roads that are of better quality will lead to a lower number of (fatal) accidents. Clearly, the quality of vehicles and the 'habits' of drivers are other factors that influence road safety. However, it goes beyond the scope of this report to carry out a full analysis of the determinants of road safety (see Broughton et al., 2012 for more European Union traffic safety figures).

*Western and Northern Europe perform well on all outcome indicators*

The outcome performance on economic affairs and infrastructure is highest in Switzerland, Finland and the Netherlands (Table 8.2). These countries score well on all three indicators. Japan, Germany, Austria, Sweden, Denmark and France also do well. The Central and Eastern European and Southern European countries score relatively low on the outcome indicators for economic affairs and infrastructure. Overall, Bulgaria, Romania, the Slovak Republic, Greece and Poland show the poorest results. Greece scores lowest on competitiveness, while the low-scoring Central and Eastern European countries attain especially low scores on infrastructure. The number of road deaths in less populous countries such as Luxembourg, Malta and Cyprus may be more subject to chance, and should therefore be interpreted with caution.



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Table 8.2 Outcomes for the public sector economic affairs and infrastructure

Region	Country	Global competitive index (score, 1-7) 2014-15	Overall quality of infrastructure (score 1-7) 2013-14	Road deaths, per million inhabitants, 2013
Western Europe	Austria	5.2	6.2	63 <sup>a</sup>
	Belgium	5.2	5.8	65
	France	5.1	6.1	56 <sup>a</sup>
	Germany	5.5	6.0	41
	Ireland	5.0	5.1	35 <sup>a</sup>
	Luxembourg	5.2	5.9	84
	Netherlands	5.5	6.3	28
	Switzerland	5.7	6.6	33
	United Kingdom	5.4	5.3	28
Northern Europe	Denmark	5.3	5.8	34
	Finland	5.5	6.4	48
	Norway	5.4	5.3	37
	Sweden	5.4	5.7	27
Southern Europe	Cyprus	4.3	5.2	51
	Greece	4.0	4.6	89 <sup>a</sup>
	Italy	4.4	4.6	57
	Malta	4.5	4.9	31 <sup>c</sup>
	Portugal	4.5	6.0	61
	Spain	4.6	5.9	36
Central and Eastern Europe	Bulgaria	4.4	3.6	103 <sup>c</sup>
	Croatia	4.1	4.9	86
	Czech Republic	4.5	5.0	62
	Estonia	4.7	5.2	59 <sup>c</sup>
	Hungary	4.3	5.0	60
	Latvia	4.5	5.0	88
	Lithuania	4.5	4.9	90 <sup>c</sup>
	Poland	4.5	4.0	93 <sup>a</sup>
	Romania	4.3	3.8	93
	Slovak Republic	4.2	4.2	69 <sup>c</sup>
	Slovenia	4.2	5.1	63 <sup>a</sup>
Oceania	Australia	5.1	5.1	62 <sup>c</sup>
	New Zealand	5.2	5.1	64 <sup>b</sup>
Northern America	Canada	5.2	5.6	64 <sup>c</sup>
	United States	5.5	5.8	104 <sup>b</sup>
Eastern Asia	Japan	5.5	6.2	45 <sup>c</sup>
	Korea	5.0	5.5	105 <sup>b</sup>

a 2012, b 2011, c 2010. Source: World Economic Forum (Global Competitiveness Report, 2014; Global Competitiveness Index, Overall quality of infrastructure), Eurostat (Persons killed in road accidents, 2015), OECD Statistics (Road injury accidents, 2015), Community database on Accidents on the Roads in Europe (2015).



## 8.2.2 Input

*Transport accounts for the largest share in expenditure in most countries*

Considering the latest available data for 2012, general government expenditure on economic affairs and infrastructure amounted to 4% of GDP for the 28 Member States of the European Union (EU-28). Spain (8%) and Belgium (7%) are the countries with the highest government spending as a share of GDP, followed by Japan, Hungary and Romania (each 6%). The lowest ratios are found in the United Kingdom and Portugal (both 3%), followed by several countries, including Cyprus, Greece, Lithuania, Italy, Germany, the Slovak Republic, Ireland, the United States, Denmark, France and Slovenia, all with expenditure ratios of between 3% and 4%. The subsector related to transport accounts for the largest share in expenditure on economic affairs and infrastructure, and in most countries for more than half the expenditure (Figure 8.1).

Traditionally, public spending on infrastructure as a percentage of GDP was one of the government's main activities. Over the last few decades, however, the share of public expenditure devoted to infrastructure has declined. Nowadays, countries tend to enter into public-private partnerships to manage the infrastructure, especially transport. According to Dias et al. (2014), variations between countries in the proportion of transport in public expenditure depend on the availability of subsidies to operate public transport, and on whether public transport companies are classified as being part of general government or as non-financial corporations. The lack of information on the expenditure on infrastructure through public-private partnership constructions makes it difficult to interpret differences between countries and to relate the input indicator to the outcome indicators.

## 8.2.3 Conclusion

To conclude, the outcomes of this public sector are generally best in the Western and Northern European countries. In particular, Switzerland, Finland and the Netherlands score well above average. Most opportunities for improvement are found in the Central and Eastern European countries and in Greece.

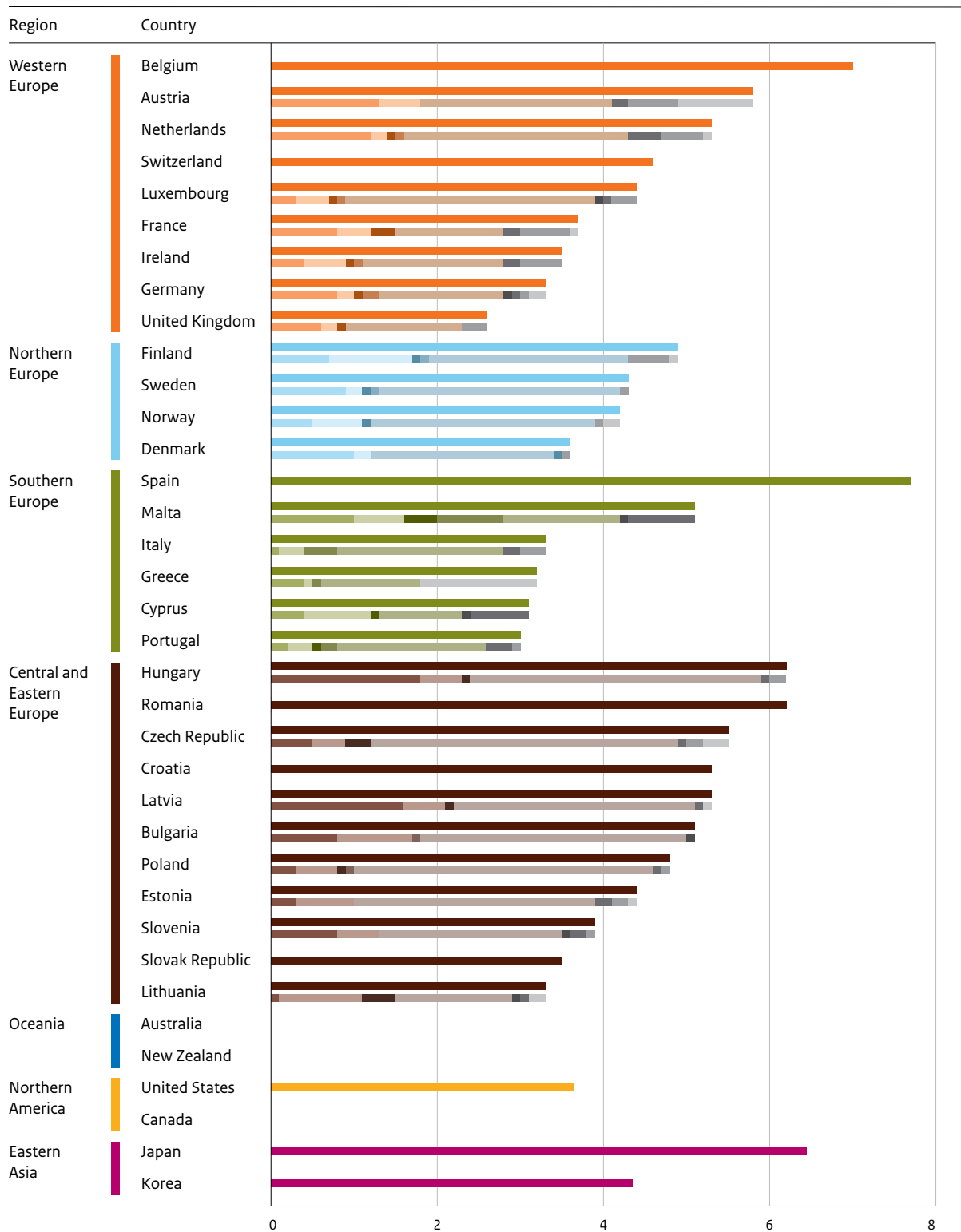
The differences in outcomes between the countries coincide with the division in Europe between a highly competitive Northern and Western Europe and a less competitive Southern and Central and Eastern Europe (Schwab, 2014). Furthermore, most of the infrastructure in almost all Central and Eastern European countries was until recently outdated, but these countries are now on their way to bridging the gap with Western and Northern Europe. This burden from the past in the Central and Eastern European countries is also reflected in the road fatality rates, perhaps suggesting





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Figure 8.1 General government expenditure on economic affairs and infrastructure (total and by subgroup), % of GDP, 2012



Source: Eurostat (Total general government expenditure, 2015), oecd Statistics (National Accounts at A Glance, 2015), SCP treatment

- economic affairs (total)
- general economic, commercial and labour affairs
- agriculture, forestry, fishing and hunting
- fuel and energy
- transport
- communication
- other industries
- R&D economic affairs
- mining, manufacturing and construction
- economic affairs n.e.c.



a lag in traffic safety policies (Broughton et al., 2012). Countries which currently lag behind in this regard but which are implementing necessary reforms are likely to progress, and may narrow the gap with the Western and Northern European countries over time.

### 8.3 Environmental protection

The somewhat isolated theme of environmental protection, which dates back to the 1970s, has in recent decades been integrated into the later and much broader agenda of sustainable development. This latter concept entails, as famously stated in the UN's Brundtland Report *Our common future*, "a development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987). Sustainable development was later specified in terms of safeguarding four kinds of capital: economic, natural, social and human capital (Joint UNECE/Eurostat/OECD Task Force 2013). As other forms of capital have been dealt with in other chapters, the focus here is on natural capital only, and hence on environmental protection, i.e. on activities aimed at the prevention, reduction and elimination of pollution or any other degradation of the environment. Three issues are at the fore in protecting natural capital: climate change, depletion of natural resources and environmental protection.<sup>1</sup>

In the COFOG classification (see introductory chapter), environmental protection is about both climate and the environment. COFOG breaks down environmental protection into five groups: 1) waste management (collection, treatment and disposal of waste); 2) waste water management (sewage system operation and waste water treatment); 3) pollution abatement (ambient air and climate protection, soil and groundwater protection, noise and vibration abatement and protection against radiation); 4) protection of biodiversity and landscape (protection of fauna and flora species); 5) research and development.

#### *Indicators for environmental protection*

A broad range of indicators can be grouped under the umbrella notion of environmental protection, ranging from sustainability and climate change to indicators that are more related to citizens' immediate residential environments. The indicators for environmental protection chosen in this chapter focus on land and ecosystems, water, air quality, climate and energy resources (Table 8.3).

At the forefront, and connected to all indicators, is the need to reduce the carbon footprint. Attempts to achieve this need not necessarily imply massive government expenditure, but may in part, even in large part, be achieved by changing the economic playing field through legislation. Hence, measuring the input of governments solely in terms of their

<sup>1</sup> The notion of sustainable development has strong connotations of future wellbeing and of wellbeing in other parts of the world. These are left out of consideration here. Another illustration of the transnational character of this issue is the fact that the extent to which climate change in general is successfully mitigated can hardly be traced to the input of any single national government.



financial expenditure on environmental protection by no means gives the full picture. In contrast, in an IMF working paper (Coady et al. 2015), the point was made recently that not putting a price on emissions (un-priced externalities of energy consumption) is in fact a hidden subsidy for the use of fossil fuels, a point which, if accepted, further clouds the issue of measuring governmental attempts to protect the environment in terms of public expenditure only.

Table 8.3 Outcome and input indicators used in this section and corresponding data sources

Level	Indicators	Sources
Outcome	Land and ecosystems: protected areas for biodiversity	Eurostat
	Water: renewable internal freshwater resource	UN data
	Air quality: urban exposure to ozone	Eurostat
	Climate: greenhouse gas (GHG) emissions	Eurostat
	Energy resources: energy consumption	OECD statistics
Input	Government expenditure on environmental protection (% of GDP)	Eurostat / OECD

### 8.3.1 Outcomes

*Land and ecosystems: shares of protected areas for biodiversity vary across countries*  
Biodiversity is the variety of life on earth. The European Union (EU) is committed to the protection of biodiversity and has built up a large network of 26,000 protected areas in all the Member States, covering more than 750,000 square kilometres, or 18% of the EU's total land area, over the last 25 years (Natura 2000). Designation of protected areas is an important policy tool for halting biodiversity decline. For each EU-28 Member State, we present the sum of protected terrestrial and marine areas as a percentage of mainland national territory. A higher percentage of protected areas may indicate a country's greater effort towards protecting its biodiversity. Countries with high shares of protected terrestrial and marine areas are Malta (74%), Denmark (53%), Croatia (46%) and the Netherlands (42%) (Table 8.4). However, when only protected terrestrial areas are taken into account, discarding the marine areas, the ranking of countries changes, resulting in Slovenia (38%) and Croatia (37%) having the highest shares and Denmark (8%) and the United Kingdom (9%) having the lowest shares of protected terrestrial areas.

*Water: renewable internal freshwater resource highest in less densely populated countries*

Renewable internal freshwater resources refer to internal river flows and groundwater from rainfall. Countries with the highest internal freshwater resources per capita are Canada, Norway, New Zealand, Australia, Finland, Sweden and Ireland, all with at least 10,000 cubic metres per capita (Table 8.4). Note that these countries are amongst the less densely



populated countries. Only four countries have less than 1,000 cubic metres per capita of renewable internal fresh water resources. These are Malta (119 cubic metres per capita), Hungary (606 cubic metres per capita), the Netherlands (655 cubic metres per capita) and Cyprus (684 cubic metres per capita).

*Air quality: urban exposure to ozone highest in continental European countries*

The air quality in cities is important for the health of its citizens. Considerable progress has been made in recent years in improving urban air quality, but issues remain. A number of air pollutants such as nitrogen dioxide, particulate matter and ozone remain above regulated levels, posing a threat to human health (EEA, 2015). The European long-term objective for the protection of health is an eight-hour average concentration of 120 micrograms per cubic metre. Ozone concentrations above this level may reduce lung function. The European information threshold for ozone smog is set at an hourly average of 180 micrograms per cubic metre (Van Pul et al., 2011). Extrapolating the hourly smog threshold to daily micrograms per cubic metre shows that Hungary, the Slovak Republic, Slovenia, Italy, Bulgaria, Austria, Spain and the Czech Republic currently exceed the smog threshold (Table 8.4). It should be kept in mind that ozone concentrations may fluctuate between seasons, and are dependent on climate. Northern European countries and the most westerly of the Western European countries have a climate that is more conducive to lower ozone concentrations than the more inland and Southern European countries.

*Climate: greenhouse gas (GHG) emissions are declining across Europe*

Massive reduction of greenhouse gas (GHG) emissions is at the heart of policies aimed at preventing climate change due to global warming. The EU has formulated the ambitious target of reducing GHG emissions to 80-95% below their 1990 level by 2050. This presents an enormous challenge to national governments, a challenge that is often referred to in terms of the need for an 'energy transition' towards renewable energy (i.e. away from fossil fuels). In the shorter run, the EU has adopted the target of reducing GHG emissions by 20% compared to their 1990 level by 2020 (EEA, 2015). Luxembourg, Estonia, Ireland and the Czech Republic are countries with relatively high GHG emissions per capita (Table 8.4).

Looking at the percentage change in total GHG emissions between 1990 and 2012 for most, but not all countries, the emissions are declining. Countries that are already on target to reduce emissions by 20% are Sweden, Germany, Denmark, the United Kingdom, the Czech Republic, Hungary, the Slovak Republic, Bulgaria, Romania, Estonia, Lithuania and Latvia (EEA, 2015).

*Energy resources: energy consumption highest in Western and Northern Europe*

Saving energy could contribute to reducing the GHG emissions from fuel combustion; for households it reduces energy bills. One of the objectives of the EU Sustainable Development Strategy is to achieve an overall saving



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Table 8.4 Outcomes for the public sector of environmental protection

Region	Country	Protected terrestrial and marine areas for biodiversity (% of mainland national territory) 2013	Water: renewable internal freshwater resource per capita (cubic metres) 2013
Western Europe	Austria	15	6,491
	Belgium	17	1,072
	France	20	3,029
	Germany	23	1,327
	Ireland	23	10,663
	Luxembourg	18	1,841
	Netherlands	42	655
	Switzerland	.	4,999
	United Kingdom	39	2,262
Northern Europe	Denmark	53	1,069
	Finland	17	19,671
	Norway	.	75,135
	Sweden	16	17,826
Southern Europe	Cyprus	31	684
	Greece	33	5,257
	Italy	21	3,050
	Malta	74	119
	Portugal	24	3,633
	Spain	29	2,384
Central and Eastern Europe	Bulgaria	35	2,891
	Croatia	46	8,865
	Czech Republic	14	1,250
	Estonia	33	9,595
	Hungary	21	606
	Latvia	18	8,314
	Lithuania	13	5,264
	Poland	22	1,391
	Romania	23	2,119
	Slovak Republic	30	2,327
	Slovenia	38	9,061
Oceania	Australia	.	21,270
	New Zealand	.	73,141
Northern America	Canada	.	81,062
	United States	.	8,914
Eastern Asia	Japan	.	3,377
	Korea	.	1,291

Source: Eurostat (Protected Areas for biodiversity, 2015; Urban population exposure to air pollution by ozone, 2015; Greenhouse gas emissions, 2015), UN data (Renewable internal freshwater resources per capita, 2015), OECD Statistics (Greenhouse gas emissions, 2015).



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Table 8.4 Outcomes for the public sector of environmental protection (continued)

Country	Air quality: urban population exposure to air pollution by ozone (micrograms per cubic metre day) 2012	Climate: Greenhouse gas (GHG) emissions (Tonnes of CO <sub>2</sub> equivalent, per capita) 2012	Energy resources: final energy consumption (tonnes of oil per capita) 2013
Austria	5,039	10	3.3
Belgium	1,905	11	3.1
France	3,428	8	2.3
Germany	3,027	11	2.6
Ireland	676	13	2.3
Luxembourg	1,447	23	7.6
Netherlands	1,719	11	3.1
Switzerland	4,274	6	.
United Kingdom	951	9	2.1
Denmark	2,632	9	2.5
Finland	1,326	11	4.5
Norway	438	11	.
Sweden	2,633	6	3.3
Cyprus	.	11	1.8
Greece	.	10	1.4
Italy	6,561	8	2.0
Malta	.	8	1.2
Portugal	3,334	7	1.5
Spain	4,660	7	1.7
Bulgaria	5,173	8	1.2
Croatia	.	6	1.4
Czech Republic	4,471	13	2.3
Estonia	1,514	14	2.2
Hungary	6,806	6	1.5
Latvia	3,367	5	1.9
Lithuania	2,722	7	1.6
Poland	3,526	10	1.7
Romania	2,406	6	1.1
Slovak Republic	6,713	8	2.0
Slovenia	6,699	9	2.3
Australia	.	.	.
New Zealand	.	.	.
Canada	.	.	.
United States	.	.	.
Japan	.	.	.
Korea	.	.	.

Source: Eurostat (Protected Areas for biodiversity, 2015; Urban population exposure to air pollution by ozone, 2015; Greenhouse gas emissions, 2015), UN data (Renewable internal freshwater resources per capita, 2015), OECD Statistics (Greenhouse gas emissions, 2015).



of 9% of final energy consumption over nine years by 2016 as set out in the EU Directive on energy end-use efficiency and energy services (EU 2006). Final energy consumption covers total energy consumption in industry, transport and other sectors, for all energy uses, and is presented here for the 28 EU Member States (Table 8.4). The data are converted into tonnes of oil equivalent (TOE) to allow the addition and comparison of different nature fuel types, e.g. solid and liquid fuels in thousands of tonnes, electricity in kilowatt hours, heat and gases in terajoules. High energy consumption per capita is found in Luxembourg (7.6 tonnes), Finland (4.5 tonnes), Sweden (3.3 tonnes), Austria (3.3 tonnes), Belgium (3.1 tonnes) and the Netherlands (3.1 tonnes). Low levels of energy consumption are found in Southern European and Central and Eastern European countries, all with levels between 1.1 and 2.3 tonnes per capita.

Besides the saving on energy consumption, we should mention that the share of energy from renewable sources is also important here. It is not the consumption of energy per se that is detrimental to the environment, but the use of non-renewable energy such as fossil fuels rather than renewable energy. The share of renewable energy in primary energy consumption in the EU-28 increased from around 5% in 1990 to 12% in 2012 (EEA 2015).

### 8.3.2 Inputs

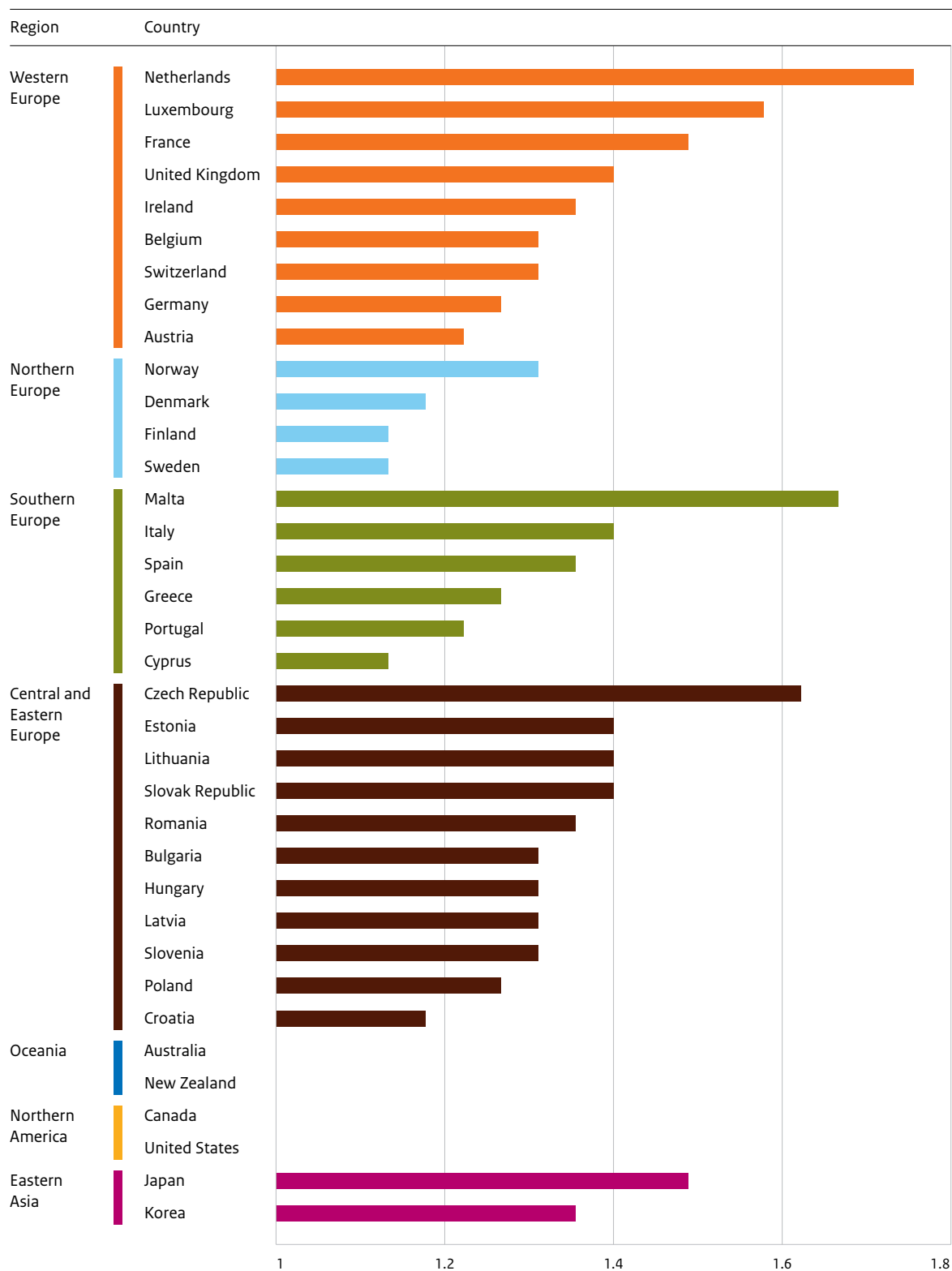
General government expenditure on environmental protection can be divided into expenditure on waste management, waste water management, pollution abatement, and expenditure on protection of biodiversity and landscape. Overall, considering the latest available data for 2012, the share of general government expenditure on environmental protection is only modest (Figure 8.2). Expenditure accounts for just over 1% of GDP in the Netherlands (1.7%), Malta (1.5%), the Czech Republic (1.4%), Luxembourg (1.3%), France (1.1%) and Japan (1.1%). Expenditure is lower in the other countries, with expenditure as a share of GDP ranging between 0.3% and 0.9%. The highest proportion of the expenditure is spent on waste management and waste water management. These types of spending are targeted mainly at 'damage repair', not at providing measures to prevent waste and climate change.

Although not included in the input indicator, policies to reduce and prevent climate change play an important role in environmental protection, as mentioned earlier. For instance, countries invest a lot to switch from fossil fuels to renewable energy. Also, EU-initiated legal interventions by national governments may affect environmental protection, for example the phasing out of incandescent light bulbs and banning energy-guzzling vacuum cleaners to reduce electricity consumption, or the use of unleaded fuels for road transport. Hence, relating expenditure to outcome performance is not warranted here.



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Figure 8.2 General government expenditure on environmental protection, % of GDP, 2012



Source: Eurostat (Total general government expenditure, 2015), oecd Statistics (National Accounts at A Glance, 2015).





### 8.3.3 Conclusion

Protecting the environment has become part of the much broader aim of preventing climate change and enhancing sustainability. This is a very broad agenda indeed – broad in the sense of encompassing many issues and also in the sense that it is a global rather than a national issue. In Europe, the EU has formulated ambitious targets, which imply major challenges for national governments, especially in reducing greenhouse gas (GHG) emissions. This largely entails the need for an energy transition away from fossil fuels and towards renewable energy (aided by further reductions in energy use). Although energy alone is not the whole story, it is the main policy target. Achieving that target not only depends on government expenditure, but also on legislation that restricts GHG emissions (possibly also using the monetary incentive of putting a price on the use of fuel energy – incidentally illustrating the fact that protecting the environment is not merely a matter of spending public money). Hence, ranking the performance of countries based on the input and outcome indicators might not be fully justified here. Across most EU countries, there is a discernible trend towards reducing GHG emissions, saving energy and moving towards renewable sources of energy, though for the moment it remains an open question whether the ambitious EU targets will be met.

### 8.4 Sport, culture and participation

Sport, culture and participation are a heterogeneous mix of activities in which the public sector plays a limited role. The main role of governments is to provide the conditions to enable individuals to be active in their leisure time and to take up a social role in society. Governments do facilitate this, for example by providing places where people can come together. As far as ‘participation’ is concerned, many governments are trying to ‘activate’ their citizens, among other things in order to reduce government spending on things such as health care or social services. However, compared to the clear targets that exist for policy sectors such as education and healthcare, government policy on sport, culture and participation is facilitating rather than intervening. Strictly speaking, we are not really talking about a public sector at all here, but about a public incentive with regard to a sector that is largely part of civil society.

#### *Sport: improving wellbeing and social cohesion*

Sport and recreation refers to the time people spend on leisure activities, which are related to health issues, being a part of people’s lifestyle, as well as to community issues, in the sense of promoting social cohesion within local communities. “Sport means all forms of physical activity which, through casual or organised participation, aim at expressing or improving physical fitness and mental wellbeing, forming social relationships or obtaining results in competition at all levels.” (Council of Europe, 1992)



from: Gratton et al., 2011). The European Commission has given attention to sports in a Work Plan for Sport for the period 2014-2017 (European Commission 2014a), setting the following priorities for Member States and for the European Commission itself:

- *Integrity of sport*, in particular anti-doping, the fight against match-fixing, protection of minors, good governance and gender equality;
- *The economic dimension of sport*, in particular sustainable financing of sport, the legacy of major sporting events, economic benefits of sport and innovation;
- *Sport and society*, in particular the European network for the promotion of health-enhancing physical activity (HEPA), volunteering, employment in sport as well as education and training in sport.

Engaging in sport is considered an individual responsibility; the role of the public sector is mainly limited to providing infrastructure, such as sports halls, or organising or supporting sporting activities in order to enable people to become active. Although the influence of governments on people's physical activity is limited, guidelines have been formulated for recommended policy actions in support of health-enhancing physical activity (EU 2008). While recognising the benefits of physical activity, the emphasis is placed on a cross-sectoral approach, with attention for the following public sectors: sport, health, education, transport, environment, urban planning and public safety, working environment and services for senior citizens.

Three indicators have been selected here to assess the outcomes relating to sport. Being active in sports and exercise or engaging in other moderate physical activity (such as gardening or DIY) are measurements for physical activity in relation to health. Being a member of a sports club, a fitness/health club or other social organisation for sport provides an indication of social cohesion. It should be noted here that differences between countries can be partly due to different interpretations of the term 'sport and exercise' (Van Tuyckom et al. 2011). All indicators are based on the Eurobarometer survey that is held among residents aged 15 years and over in the 28 European Union Member States (European Commission 2014b).

#### *Culture: arts and heritage*

Culture has a range of meanings, from all human artefacts and interactions in general to arts and heritage in particular. Here culture is given the latter meaning. In enhancing and protecting arts and heritage, governments not only see culture as a goal, but also as a means to further cohesion, creativity, profit and health. Here the focus is on culture as an end in itself. For an individual, culture is something that can be visited as well as something they can do themselves (such as play an instrument or study local heritage in their leisure time). Public policy regarding culture is aimed at enhancing quality in supply and quantity in demand, by 1) protecting heritage (artefacts, monuments and archaeological sites); 2) supporting production (arts) and presentation (arts and heritage); 3) encouraging people to visit



what is presented; and 4) encouraging people to practise arts and heritage themselves. Cultural education in schools is at the interface of educational and cultural policy. Governments may take direct responsibility or leave things to the free forces in society and economy. There is also variation in the policy means (both within and between nations), from laws on fixed book prices and measures to protect a national cinematic culture to subsidies for all or part of the arts and heritage, as well in the extent to which culture and heritage are seen as a concern for central government or for federal, regional or local government. Typically, laws protecting heritage, stipulating fixed book prices, protecting cultural diversity and specifying cultural education are a matter for central government (but then not all countries have a fixed book price or protect their cinematic culture), whereas providing facilities for the amateur arts may be an issue for local government, as often the case with the funding of local theatres or museums.

Numerous indicators can be used to measure cultural public performance. Both protection and enhancement of culture (supply) and promotion of public interest in culture (demand) are policy aims. As indicators for supply are notoriously difficult to measure, we restrict ourselves here to indicators for demand, i.e. cultural participation.

*Participation: increasing social capital and communities*

Outcomes concerning participation are aimed at increasing social capital, the sense of community and strengthening the responsibility and manageability of citizens. These concepts are difficult to measure and compare across countries, and virtually no information is available on them. Furthermore, the role of the public sector is largely absent when it comes to the participation of people. Outcomes related to participation will therefore not be presented here.

*Indicators for sport, culture and participation*

To describe the performance of this public sector, we use seven different indicators to measure the outcomes: three for sport and four for culture (Table 8.5). As an indicator for the input for this sector, we use expenditure as a percentage of the GDP of each country.



Table 8.5 Outcome and input indicators used in this section and corresponding data sources

Level	Indicators	Sources
Outcome	<i>Sport:</i>	
	Exercise or play sport at least once a week (%)	Eurobarometer
	At least four days a week moderate physical activity (%)	Eurobarometer
	Member of a sports club, fitness/health club or social organisation for sport (%)	Eurobarometer
	<i>Culture:</i>	
	Visited a historical monument or site	Eurobarometer
	Visited a museum or gallery	Eurobarometer
	Been to the theatre	Eurobarometer
	Involved in creative activity	Eurobarometer
Input	Government expenditure on sport and recreation (% of GDP)	Eurostat / OECD

### 8.4.1 Outcomes

*Sport: A sporting nation is not always a physically active nation*

In 2013, the outcome performance for sport and physical activity was highest in the Netherlands, Denmark and Sweden (Table 8.6). These countries score highly on all three indicators. Finland and Germany also do well. The Central and Eastern European and Southern European countries score relatively low in general. Portugal, Italy and Greece, for example, have the lowest percentage of inhabitants with regular physical activity, while participation in sport on a weekly basis is lowest in Bulgaria, Malta and Romania. But there are also some surprising differences. Inhabitants of Latvia, Bulgaria and Hungary, for example, are much more often physically active on at least four days a week than many inhabitants of Western or Northern European countries. Sports participation in Germany, Estonia and the Netherlands is the most organised: the share of people active in sports through a club or social organisation is the highest in these countries. Although Finnish people are very active in sport and exercise, a relatively small proportion are active in an organised setting.

Based on organisational structure and sporting intensity, Van Tuyckom (2013) distinguished between six sporting worlds, not necessarily based on geography, history or policy. The results show a difference between countries in the way sport is organised. In some countries sport is practised mainly in a commercial fitness setting (e.g. Italy, Greece, Portugal), while in other countries sports clubs (e.g. Denmark, the Netherlands, Austria), or sport at school (e.g. Hungary, Poland, Latvia, Lithuania) dominate. Finland and Sweden stand out with the largest and most wide-ranging sports organisations, while the remaining countries have an active multi-context system of participating in sport.



A PRELIMINARY ANALYSIS OF THREE OTHER SECTORS

Table 8.6 Outcomes for the public sector for sport and recreation (in %), 2013

Region	Country	Exercise or play sport at least once a week (%)	At least 4 days a week moderate physical activity (%)	Member of a sports club, fitness/health club or social organisation for sport <sup>a</sup> (%)
Western Europe	Austria	45	33	30
	Belgium	47	32	32
	France	43	23	26
	Germany	48	39	40
	Ireland	52	27	35
	Luxembourg	54	24	35
	Netherlands	58	53	46
	Switzerland	.	.	.
	United Kingdom	46	24	31
Northern Europe	Denmark	68	38	53
	Finland	66	34	30
	Norway	.	.	.
	Sweden	70	35	53
Southern Europe	Cyprus	36	22	16
	Greece	31	17	17
	Italy	30	14	20
	Malta	19	24	15
	Portugal	28	14	12
	Spain	46	20	21
Central and Eastern Europe	Bulgaria	11	36	6
	Croatia	35	31	21
	Czech Republic	36	26	25
	Estonia	39	30	31
	Hungary	38	41	11
	Latvia	31	37	11
	Lithuania	37	30	22
	Poland	28	22	13
	Romania	21	35	12
	Slovak Republic	34	22	20
Slovenia	51	27	24	
Oceania	Australia	.	.	.
	New Zealand	.	.	.
Northern America	Canada	.	.	.
	United States	.	.	.
Eastern Asia	Japan	.	.	.
	Korea	.	.	.

<sup>a</sup> Respondents could mention different organisations where they practised sport and exercise. The percentage is calculated as the residue of all respondents minus those who said they are not a member of a sports organisation. Source: European Commission (Eurobarometer 2014), scp treatment.



*Culture: cultural participation highest in Northern Europe, followed by Western Europe*

For Europe, data on a number of cultural activities are available from Eurobarometer. Here we have chosen four of the available indicators, three on attending cultural manifestations and one on practising cultural activities. Whereas figures on attendance cover aspects of both arts and heritage, figures on practising only refer to amateur arts (such as singing, painting, etc.), and do not include 'amateur heritage' (such as studying local history, family trees, etc.). The upshot of these figures is that cultural participation is at a much higher level in the North-western region of Europe than elsewhere on the continent. The Scandinavian countries in particular stand out positively (Table 8.7).

Similar information is available for Australia, New Zealand, Canada and the United States. However, different surveys were used, raising issues with regard to the comparability of the data between countries. Stating this with a reservation, the general impression is that participation rates in Australia, New Zealand and Canada are altogether not too dissimilar from those in Western Europe, whereas the United States participation rates are much lower.

#### 8.4.2 Inputs

*Government spending on sport, culture and participation is limited*

General government expenditure on sport, culture and participation includes spending on recreational and sporting services, cultural services, broadcasting and publishing services, religious and other community services. Considering the latest available data for 2012, total general government expenditure varies between 0.3% and 2.7% of GDP (Figure 8.3). In most countries, cultural services and recreational and sporting services account for the highest shares of expenditure. The Central and Eastern European countries spend relatively high amounts as a percentage of GDP on cultural services, especially Latvia (1.1%) and Estonia (1.0%). At the other end of the scale, the Southern European countries spend less, with expenditure range between 0.1% and 0.3% across Greece, Portugal, Cyprus and Italy. For sport and recreation, the Netherlands, France and Sweden are the countries with the highest government spending as a share of GDP (all 0.6%), while the lowest shares are found in Ireland, Croatia and Lithuania (all 0.1%).

*Other types of input may also contribute to the outcome performance*

It is reasonable to assume that total government expenditure, not specifically aimed at sport, recreation and physical activity are related to higher levels of physical activity. Educational investments, for example, seem to be associated with higher levels of sport participation as well as physical activity (Lera-López et al. 2015). In general, gross domestic product per



A PRELIMINARY ANALYSIS OF THREE OTHER SECTORS

Table 8.7 Outcomes for the public sector for culture (% of population involved), 2013

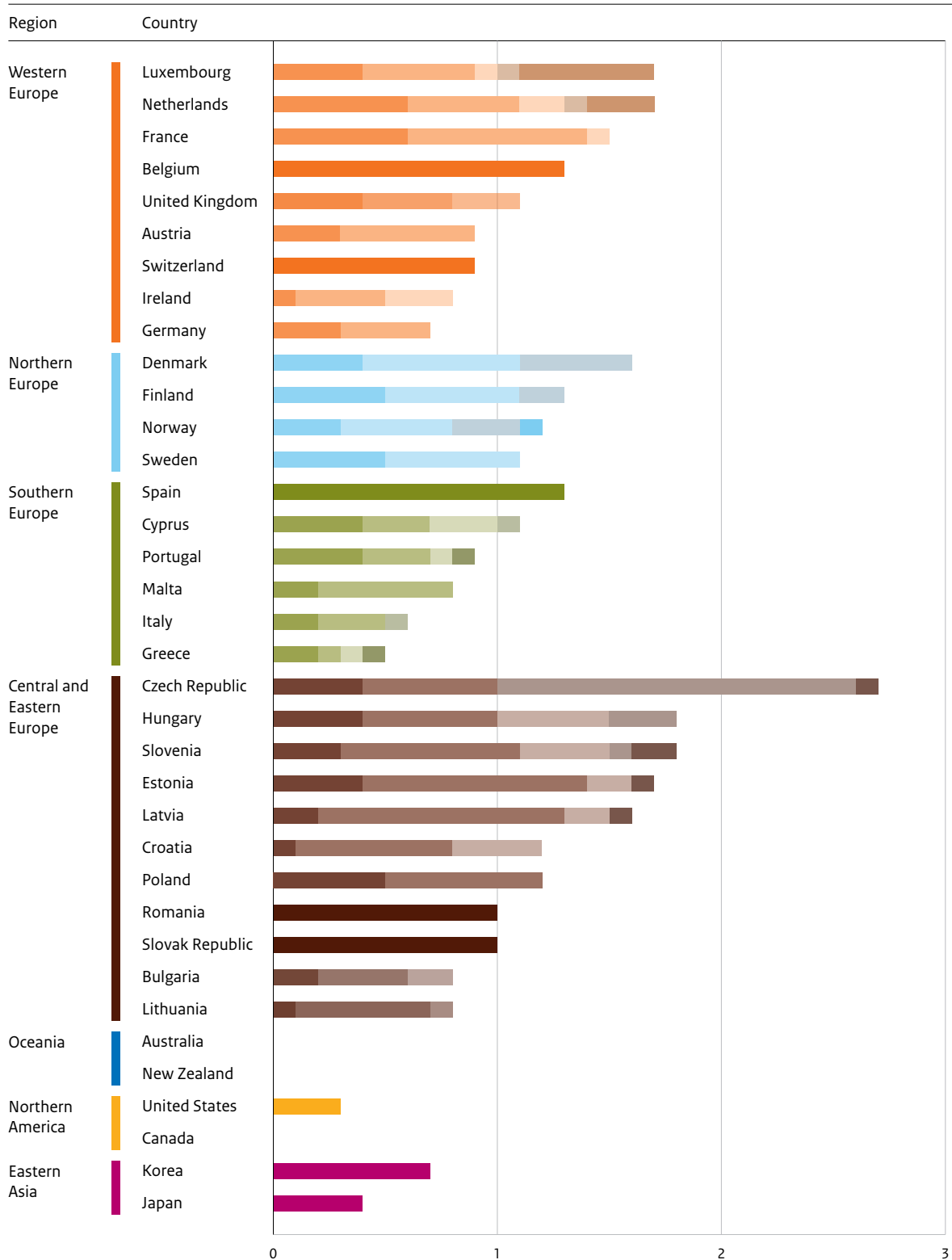
Region	Country	Three forms of visiting heritage and arts			Practising arts
		Historical site or monument	Museum or gallery	Theatre	At least one artistic activity
Western Europe	Austria	57	42	40	44
	Belgium	51	40	32	46
	France	54	39	21	51
	Germany	63	44	30	42
	Ireland	54	40	31	41
	Luxembourg	59	49	35	57
	Netherlands	71	60	53	58
	Switzerland	.	.	.	.
	United Kingdom	65	52	39	41
Northern Europe	Denmark	73	62	38	74
	Finland	47	40	42	63
	Norway	.	.	.	.
	Sweden	79	76	53	68
Southern Europe	Cyprus	31	18	23	33
	Greece	22	16	24	26
	Italy	41	30	24	20
	Malta	53	37	24	18
	Portugal	27	17	13	22
	Spain	48	29	21	32
Central and Eastern Europe	Bulgaria	41	26	24	14
	Croatia	37	29	22	21
	Czech Republic	60	37	36	37
	Estonia	59	46	45	50
	Hungary	33	28	20	21
	Latvia	60	49	43	42
	Lithuania	53	39	34	29
	Poland	36	24	16	32
	Romania	33	21	15	26
	Slovak Republic	49	31	30	38
Slovenia	52	36	33	51	
Oceania	Australia	.	.	38	48
	New Zealand <sup>a</sup>	.	51	33	50
Northern America	Canada <sup>b</sup>	46	36	44	.
	United States <sup>c</sup>	24	21	(23)	23
Eastern Asia	Japan	.	.	.	.
	Korea	.	.	.	.

a 2011; b 2010; c 2012. Note: Within the EU, this was measured identically; for other countries we had to rely on national statistics derived using various methodologies. Information between parentheses should be treated with additional caution as they do not cover precisely the same ground. Sources: European Commission (Cultural Access and Participation, 2013), Australian Council for the Arts (Arts in Daily Life, 2014), Creative New Zealand (New Zealanders and the Arts, 2012), Hill Strategies (Canadian's Arts, Culture and Heritage Activities in 2010, 2012) and National Endowment for the Arts (A Decade of Arts Management, 2014).



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Figure 8.3 General government expenditure on sport, culture and participation (total and by subgroup), % of GDP, 2012



Source: Eurostat (Total general government expenditure, 2015), oecd Statistics (National Accounts at a Glance, 2015), SCP treatment.

■ Recreation, culture and religion (total)
 ■ Recreational and sporting services  
■ Cultural services
 ■ Broadcasting and publishing services  
■ Religious and other community services
 ■ Recreation, culture and religion n.e.c.





capita and economic freedom are associated with higher participation in physical activity (Ruseski and Maresova 2014). But other factors may also influence physical activity, such as values regarding health and the personal responsibility for improving health, the configuration of a residential area, e.g. proximity of green spaces, feelings of safety when outside the home, availability of pavements or cycle paths (Wendel-Vos et al., forthcoming).

In addition to financial measures, and hence falling outside the perspective of purely monetary inputs, there are laws to protect culture and heritage. Several European countries have laws on fixed book prices, which precludes price competition on the book market. The aim is to enable publishers and retailers to publish and sell a wider range of books, but no public money is involved. Some other countries, e.g. France, have measures in place to protect the national cinematic culture against the international (in practice us) supply on the market. Heritage is protected both financially and legally, in part by European laws (such as the Valetta Treaty, known also as the Malta Convention or Convention on the Protection of the Archaeological Heritage). Recently, the idea is gaining ground, at least in the Netherlands, that culture should perhaps be left (more) to society to enable it to flourish, in which case the basic argument is that less government expenditure (monetary input) leads to a healthier cultural sector. To complicate matters further, in between the culture that is on offer and the degree of cultural participation by the population, the level of educational attainment is of major importance. It is a well-established fact that better educated people are more inclined to be involved in culture, especially as visitors. As levels of education vary between countries, this might interfere with a possible relationship between expenditure and participation. It might even be the case that educational expenditure is of more importance here than cultural expenditure.

### 8.4.3 Conclusion

*Sport, culture and participation: public sector or civil society?*

Sweden, Denmark and the Netherlands, in particular, score well above average with regard to public involvement in sport and culture. This may be related to a variety of social, economic and cultural characteristics of those countries. Although there is governmental input in these sectors, it is meaningless to interpret the societal outcomes entirely as a result of public sector input. It is not at all clear whether and how the outcomes relate to the inputs. Many sports and cultural activities take place in 'civil society', whereas both sport and culture are also in part provided for in the marketplace. Participation takes place entirely within 'civil society'. As a result, sport, culture and participation are only marginally part of the public sector, and their indicators are therefore less suitable for measuring the performance of countries in terms of their public sector outcomes and inputs.



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Part v  
Synthesis





# Some general patterns in outcomes

Benedikt Goderis and Simone Croezen

9

As discussed in the heuristic model presented in Figure 1.1 in Chapter 1, public sector outcomes are at the core of this study, as they reflect how well a country (or its population) is doing in terms of the goals that public policies aim to achieve. In this final chapter, we provide a graphic overview of the performance of regions and countries in terms of these outcomes. Specifically, we first compare *regions* in terms of their performance across public sectors. We then compare *countries within each region* in terms of their performance across public sectors. We focus on the five public sectors that are studied in more detail in chapters 2, 3, 5, 6 and 7, namely education, health, housing, social security and public administration. We exclude the sectors economic affairs and infrastructure, environmental protection, and sport, culture and participation, which were only briefly examined in Chapter 8. We also exclude social safety. This is because, as discussed in Chapter 4, the comparability of nationally recorded crime rates is subject to various measurement problems, probably the most crucial of which derives from the vast cross-country differences in reporting by citizens and registration by the police, which lead to artificial differences in recorded crime rates. High levels of *recorded* crime may reflect high levels of *actual* crime (unfavourable), but could equally well indicate high reporting and registration rates (favourable). Because of this ‘safety paradox’, we exclude social safety from the diagrams presented in this chapter.<sup>1</sup>

This chapter should be viewed as an illustration of some of the results for public sector outcomes documented in earlier chapters. But it also goes beyond those chapters by looking at five sectors simultaneously. This allows us to identify possible cross-sectoral patterns in the performance of regions and countries. Again, we emphasise that the outcome indicators do not necessarily reflect the performance of the public sector, but instead indicate how well a country (or its population) is doing in terms of the indicators at which public policies are ultimately aimed.

## 9.1 Constructing outcome indices to measure the performance of regions and countries

In each of the chapters 2 to 7, the individual outcome indicators are combined in a composite outcome *index*. This index is constructed as follows:

- (i) We first identify the most recent year for which outcome data are available (in most cases this is 2012, see Table A9.1 in the appendix to this chapter). Throughout the steps below, we use data for this most recent available year only and disregard data for all other years.

<sup>1</sup> While not shown in the diagrams, the outcome index for social safety was computed, and is reported in the appendix to this chapter.

- (ii) We then identify the countries for which we have data on *all* outcome indicators for education, health, social safety, housing, social security and public administration. These are the 28 EU Member States, minus Cyprus, Malta, Greece and Croatia. We use these 24 countries as a reference group against which to evaluate the performance of countries.
- (iii) For each outcome indicator, we then compute the mean and standard deviation across this group of 24.
- (iv) We next standardise each outcome indicator by subtracting this mean and dividing by this standard deviation. This yields standardised scores for all countries with data on the corresponding outcome indicator (potentially up to all 36 countries studied in this volume, not just the 24 reference countries).
- (v) Finally, for each sector, the outcome index then corresponds to the average of these standardised outcome indicators.<sup>2</sup>

Table 9.1 lists the outcome indicators used to construct the outcome indices for each sector. For education, we use the *PISA maths and reading scores*, which capture the average scores of 15 year-olds in internationally standardised mathematics and reading tests. We also use the *variation in PISA maths scores explained by socioeconomic status* as an indicator for inequality of educational opportunity. For health, we use *life expectancy at birth* and *infant mortality*. For social safety, we use *recorded crime rates*. For housing, we use *households with no housing problems*, which refers to households that do not experience any problems from a specific list of items regarding (i) the quality of dwellings, (ii) the extent to which dwellings provide sufficient space, and (iii) the affordability of dwellings. For social security, we use *contextual poverty*, *non-employment in youth*, *long-term unemployment* and the *pension replacement rate*. Contextual poverty refers to a measure of absolute poverty that takes into account differences between countries and over time in terms of the budget needed to acquire the minimum necessities. Non-employment in youth corresponds to the percentage of the population aged 15 to 24 years that are not employed and not engaged in education or training (that is, unemployed or inactive). The pension replacement rate constitutes the level of earnings from pensions relative to earnings when working. For public administration, we use the *World Bank good governance indicator*, which measures countries' average performance on six dimensions of governance: accountability, control of corruption, rule of law, government effectiveness, political stability and regulatory quality. Table A9.1 in the appendix to this chapter presents the computed outcome index scores.<sup>3</sup>

<sup>2</sup> In the absence of an objective and systematic method for attaching weights to the outcome indicators, we use the unweighted average.

<sup>3</sup> More detailed information on the outcome indicators used to construct the indices, as well as information on additional outcome indicators, is available in chapters 2 to 7.

Table 9.1 Outcome indicators used to construct the outcome indices

Chapter	Public sector	Outcome indicator
2	Education	PISA maths score
		PISA reading score
		Variation in PISA maths scores explained by socioeconomic status
3	Health	Life expectancy at birth
		Infant mortality
4	Social safety	Recorded crime rates
5	Housing	Households with no housing problems
6	Social security	Contextual poverty
		Non-employment in youth
		Long-term unemployment
		Pension replacement rates
7	Public administration	World Bank good governance indicator

Sources: Eurostat, OECD, UNODC, EU-SILC, World Bank.

## 9.2 Comparing the performance of regions and countries within each sector and across sectors

Using the outcome indices, we now present spider charts to visualise the performance of regions and countries within and across sectors. As explained above, the charts include the sectors education, health, housing, social security and public administration.

### *Comparing regions*

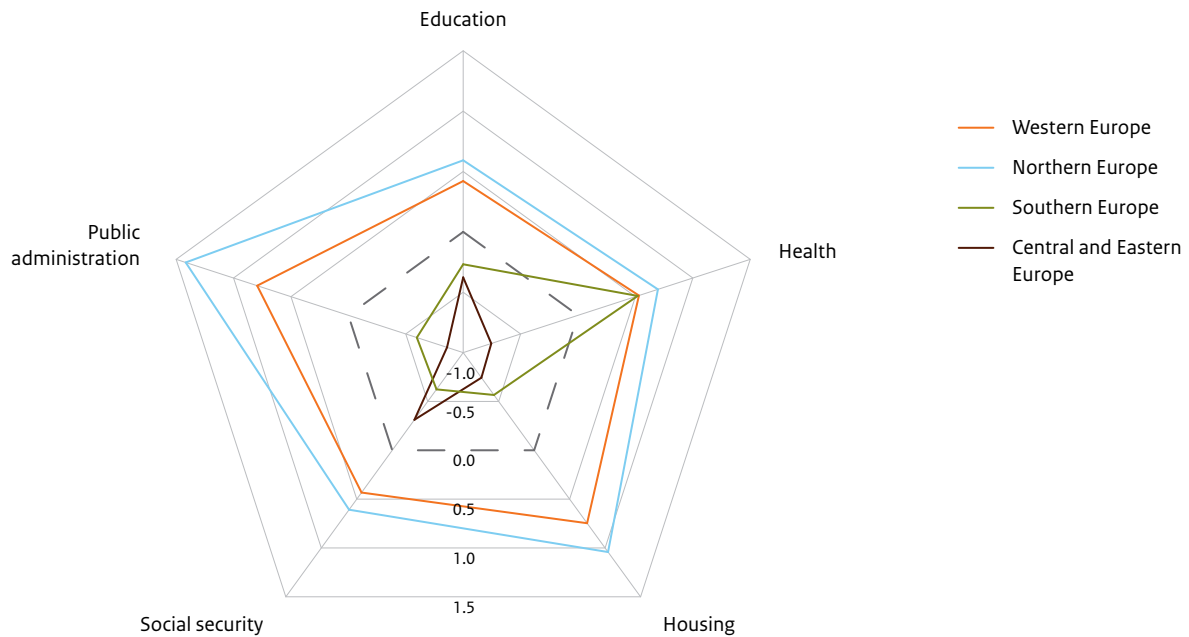
Figure 9.1 shows the average performance of European regions in each of the five sectors. On each of the five axes, a score of zero implies that the performance was equal to the average performance in the reference group of 24 EU Member States. A score of +1 implies that the performance was 1 standard deviation higher than the average performance in the reference group. Hence, higher scores correspond to better performance. As can be seen, Northern Europe performs best across all five sectors, followed by Western Europe. Both regions perform above average. Central and Eastern Europe and Southern Europe perform below average across (almost) all sectors. Central and Eastern Europe attains the lowest average scores on education, health, housing and public administration, while Southern Europe records the lowest scores for social security. The differences between the best and worst-performing regions are greatest for public administration and housing. In the health sector, Southern Europe performs exceptionally well, comparable to Western Europe.





Figure 9.1 does not include Oceania, Northern America, and Eastern Asia because data for these regions are available only for education, health and public administration. We observe the following points when looking at these data:

Figure 9.1 Comparing regions – average performance of European regions in five public sectors



Notes: See chapters 2, 3, 5, 6 and 7 for more details. For each region, performance is measured by the unweighted average of the relevant outcome index for all countries in the region for which data are available. On each of the five axes, a score of 0 (+1) implies that the performance was equal to (1 standard deviation above) the average performance in the reference group of 24 EU Member States. Hence, higher scores correspond to better performance. Source: Eurostat, OECD, UNODC, EU-SILC, World Bank, SCP treatment.

On average, Eastern Asia outperforms all other regions in education and health. The lead in education is particularly impressive: almost two standard deviations above the mean, compared to 0.7 standard deviations in the best-performing European region (Northern Europe). In public administration, the region scores just below the average of the reference group.

Oceania performs roughly comparably to Western Europe on average and somewhat below Northern Europe.

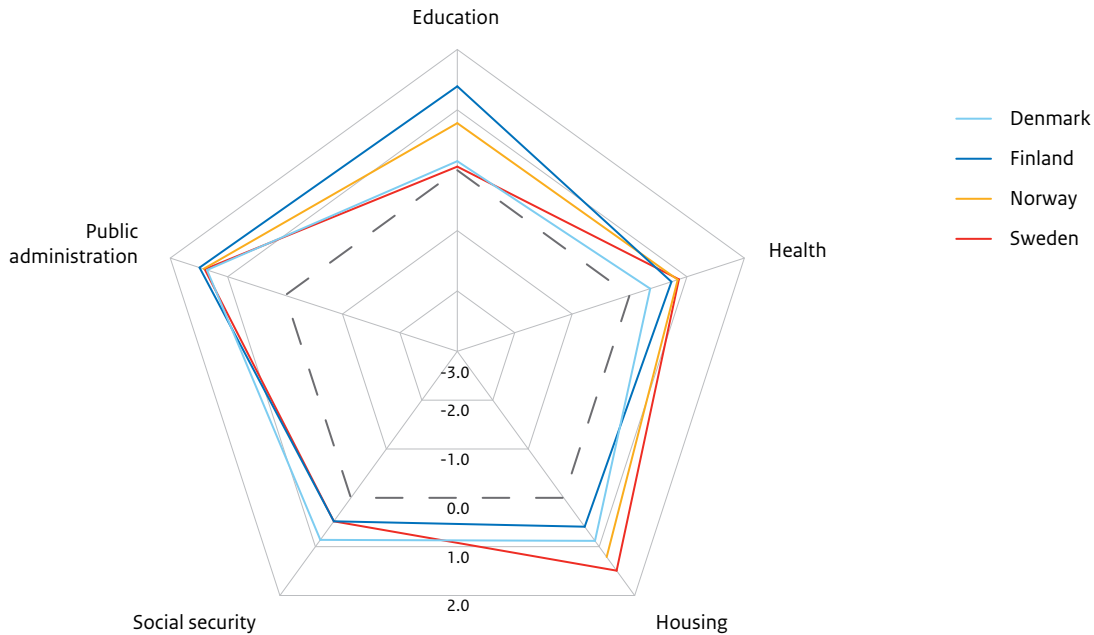
Northern America performs roughly comparably to Western Europe in education and public administration, but not in health, where it does considerably worse and actually scores below the average of the reference group of 24 EU Member States.



*Comparing countries*

Figures 9.2 to 9.5 show the performance of individual countries within each region.

Figure 9.2 Comparing countries – performance of Northern European countries in five public sectors



Notes: See chapters 2, 3, 5, 6 and 7 for more details. Performance is measured by outcome index scores. On each of the five axes, a score of 0 (+1) implies that the performance was equal to (1 standard deviation above) the average performance in the reference group of 24 EU Member States. Hence, higher scores correspond to better performance. Missing data for social security in Norway. Source: Eurostat, OECD, UNODC, EU-SILC, World Bank, SCP treatment.

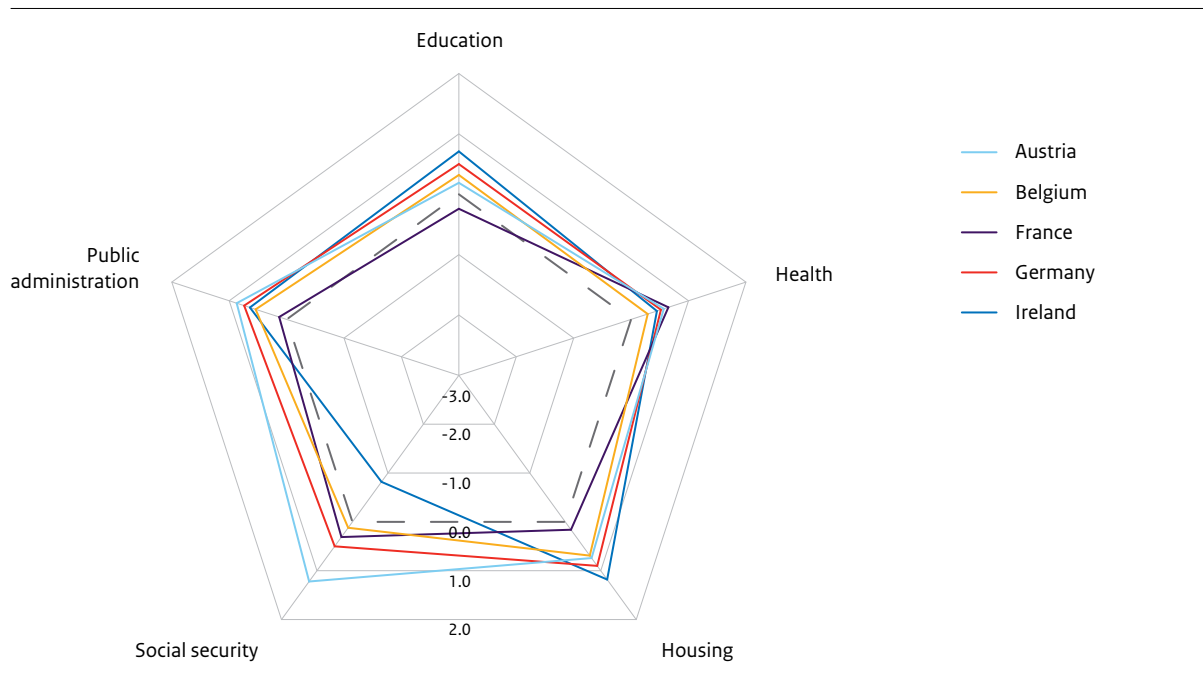
*Northern European countries score consistently highly across sectors*

We have already documented Northern Europe's strong average performance relative to other European regions. Figure 9.2 shows the performance of individual countries within Northern Europe. It reveals that all four countries achieve fairly consistently high scores across the sectors. Variation between countries is limited, except in education, where Sweden and Denmark perform around the average, while Finland performs well above average. No single country dominates in all five sectors.



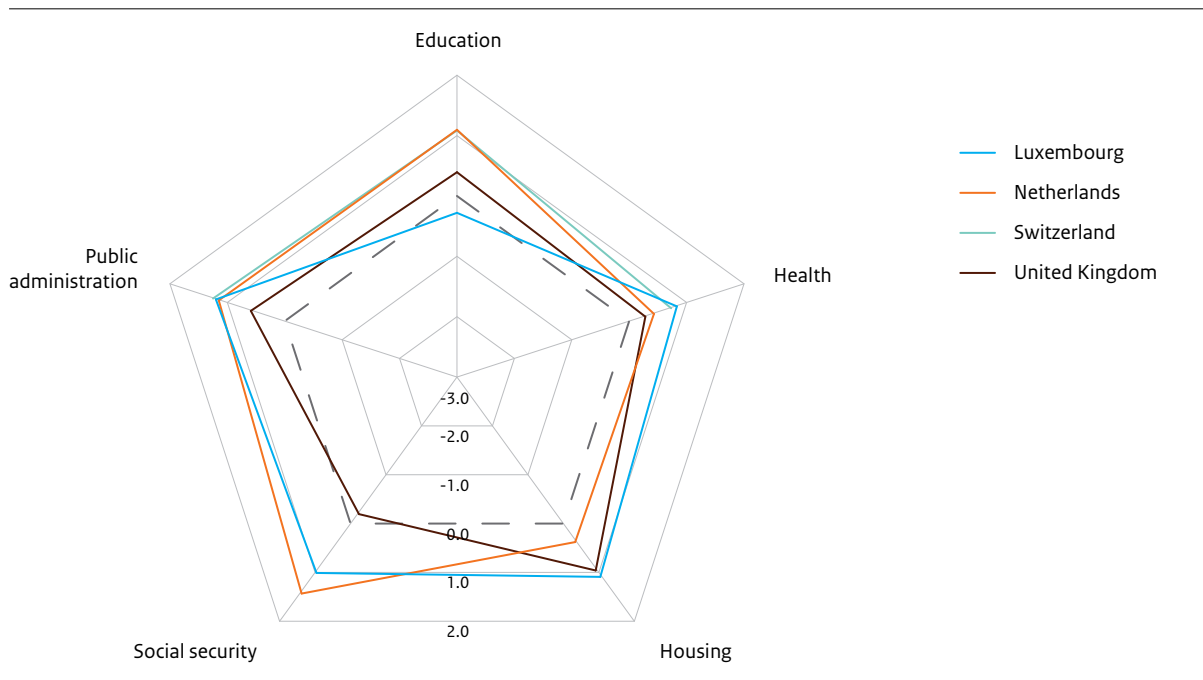
SOME GENERAL PATTERNS IN OUTCOMES

Figure 9.3.a Comparing countries – performance of Western European countries in five public sectors



Notes: See chapters 2, 3, 5, 6 and 7 for more details. Performance is measured by outcome index scores. On each of the five axes, a score of 0 (+1) implies that the performance was equal to (1 standard deviation above) the average performance in the reference group of 24 EU Member States. Hence, higher scores correspond to better performance. Source: Eurostat, OECD, UNODC, EU-SILC, World Bank, SCP treatment.

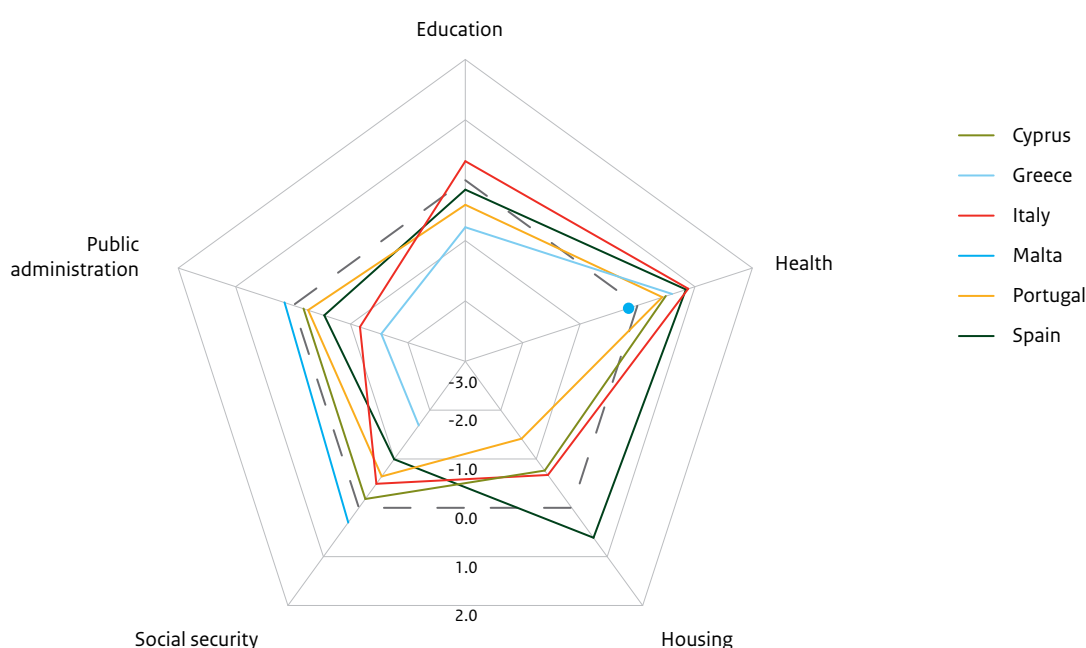
Figure 9.3.b Comparing countries – performance of Western European countries in five public sectors (continued)



Notes: See chapters 2, 3, 5, 6 and 7 for more details. Performance is measured by outcome index scores. On each of the five axes, a score of 0 (+1) implies that the performance was equal to (1 standard deviation above) the average performance in the reference group of 24 EU Member States. Hence, higher scores correspond to better performance. Missing data for housing and social security in Switzerland. Source: Eurostat, OECD, UNODC, EU-SILC, World Bank, SCP treatment.



Figure 9.4 Comparing countries – performance of Southern European countries in five public sectors



Notes: See chapters 2, 3, 5, 6 and 7 for more details. Performance is measured by outcome index scores. On each of the five axes, a score of 0 (+1) implies that the performance was equal to (1 standard deviation above) the average performance in the reference group of 24 EU Member States. Hence, higher scores correspond to better performance. Missing data for education in Cyprus and Malta and housing in Greece and Malta. Source: Eurostat, OECD, UNODC, EU-SILC, World Bank, scp treatment.

*Western European countries rank second after Northern Europe, but variation between countries is considerable*

We have already seen that Western Europe ranks second on average among the regions in Europe. However, Figures 9.3.a and 9.3.b reveal that its average scores mask considerable differences between countries, except in health:

- (i) In social security, the United Kingdom and, to a larger degree, Ireland, score below the average of the reference group of 24 EU Member States, while the Netherlands and Austria score well above average.
- (ii) In education, Luxembourg and France perform below average, while the Netherlands and Switzerland perform well above average.
- (iii) In public administration, France performs only just above average; Switzerland and Luxembourg perform much better.
- (iv) In housing, France again does only slightly better than average, while Ireland and Luxembourg score well above average.

Overall, no single country dominates in all five sectors but two observations stand out. First, Switzerland has data only for education, health and public administration but achieves (close to) the highest scores in all three



sectors. Second, France achieves relatively low scores in three of the five sectors (education, housing and public administration).

*Southern European countries score relatively well on health*

As we have seen, Southern European countries perform much less well on average than Northern and Western European countries, except in health, where their scores are comparable to those of Western Europe. Figure 9.4 shows that all individual countries in Southern Europe attain relatively high scores for health, except Malta, which scores just below average.

Differences in the other sectors are considerable:

- (i) In housing, Portugal scores far below average, while Spain scores well above average. The strong performance of Spain might be explained by its large investments in new construction preceding the housing 'bubble'.
- (ii) In social security, as well as in public administration, Malta does better than average, while Greece scores far below average.
- (iii) In education, Italy performs better than average, while Greece scores well below average.

Overall, no single country dominates in all five sectors, but one observation stands out. Greece performs worst and far below its peers in education, social security and public administration. It is possible that this poor performance is partially due to the country's debt crisis, which began in 2010. At the same time, Greece's weak public administration may also have been one of the reasons behind the crisis.

*Central and Eastern European countries perform less well on average and intraregional differences are larger, except in social security*

Figures 9.5.a and 9.5.b reveal that Central and Eastern European countries achieve the lowest average scores among European regions and have the largest intraregional differences, except in social security, where the performance is relatively high and stable across countries:

- (i) In education, Bulgaria and Romania score far below the average of the reference group of 24 EU Member States, while Estonia scores far above the average.
- (ii) In health, Romania and Bulgaria perform far below average, while Slovenia performs well above average.
- (iii) In housing, Bulgaria, Latvia and Romania do much worse than average, while the Czech Republic performs somewhat above average.
- (iv) In public administration, Bulgaria and Romania perform far below average, while Estonia performs around the average.
- (v) In social security, Romania, Latvia, Bulgaria, Poland and the Slovak Republic perform well below average, while the Czech Republic and Slovenia score around the average.

Looking at these results, we observe that Bulgaria and Romania are among the worst performers in all sectors. The Czech Republic, Estonia and Slovenia are among the best performers in two of the five sectors.



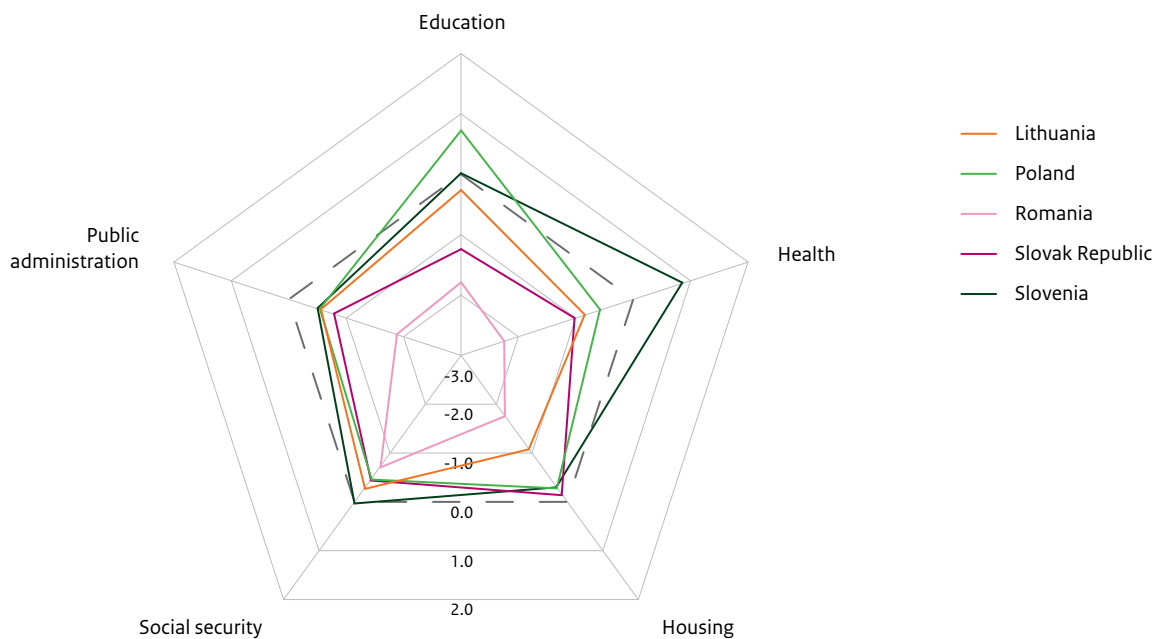
PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Figure 9.5.a Comparing countries – performance of Central and Eastern European countries in five public sectors



Notes: See chapters 2, 3, 5, 6 and 7 for more details. Performance is measured by outcome index scores. On each of the five axes, a score of 0 (+1) implies that the performance was equal to (1 standard deviation above) the average performance in the reference group of 24 EU Member States. Hence, higher scores correspond to better performance. Missing data for housing and social security in Croatia. Source: Eurostat, OECD, UNODC, EU-SILC, World Bank, SCP treatment.

Figure 9.5.b Comparing countries – performance of Central and Eastern European countries in five public sectors (continued)



Notes: See chapters 2, 3, 5, 6 and 7 for more details. Performance is measured by outcome index scores. On each of the five axes, a score of 0 (+1) implies that the performance was equal to (1 standard deviation above) the average performance in the reference group of 24 EU Member States. Hence, higher scores correspond to better performance. Source: Eurostat, OECD, UNODC, EU-SILC, World Bank, SCP treatment.



*Performance of countries in the three non-European regions*

We do not present spider charts for the countries in Oceania, Northern America and Eastern Asia because data for these regions is available only for education, health and public administration. We observe the following when looking at these data:

As already documented, Eastern Asia outperforms all other regions on average in health and, especially, education. In public administration, the region scores just below average. At the country level, Korea performs relatively better in education, while Japan performs better in health and much better in public administration.

On average, Oceania performs roughly comparably to Western Europe and somewhat below Northern Europe. Australia does better in education and health, while New Zealand performs better in public administration.

Northern America performs roughly comparably to Western Europe on average, except in health, where it does considerably worse and scores below average. Canada does considerably better than the United States in all three sectors.



PUBLIC SECTOR ACHIEVEMENT IN 36 COUNTRIES

Appendix

Table A9.1 Outcome indices for education, health, social safety, housing, social security and public administration (in standardised scores)

Region	Country	Public sector					
		Education 2012	Health 2012	Social safety 2012	Housing 2012	Social security 2011-2013	Public administration 2013
Western Europe	Austria	0.19	0.57	0.28	0.74	1.22	0.87
	Belgium	0.32	0.29	-2.57	0.69	0.12	0.54
	France	-0.24	0.65	-0.31	0.16	0.31	0.13
	Germany	0.50	0.52	0.64	0.90	0.50	0.74
	Ireland	0.71	0.45	-0.18	1.18	-0.82	0.64
	Luxembourg	-0.27	0.84	-0.91	1.05	0.97	1.21
	Netherlands	1.10	0.44	-1.03	0.34	1.39	1.16
	Switzerland	1.09	0.74	0.20			1.26
Northern Europe	United Kingdom	0.40	0.29	-1.31	0.92	-0.23	0.60
	Denmark	0.15	0.36	-1.57	0.88	0.86	1.36
	Finland	1.39	0.73	-0.10	0.59	0.48	1.49
	Norway	0.78	0.84	0.23	1.21		1.42
Southern Europe	Sweden	0.06	0.86	-1.08	1.49	0.48	1.40
	Cyprus		0.48	0.85	-0.77	-0.19	-0.19
	Greece	-0.79	0.59	-0.27		-1.69	-1.54
	Italy	0.30	0.87	-0.11	-0.68	-0.50	-1.17
	Malta		-0.08	0.75		0.29	0.14
	Portugal	-0.42	0.42	-0.03	-1.42	-0.65	-0.27
Central and Eastern Europe	Spain	-0.17	0.83	-0.26	0.60	-1.00	-0.55
	Bulgaria	-2.13	-1.90	0.83	-1.85	-0.46	-1.91
	Croatia	-0.14	-0.19	0.86			-1.30
	Czech Republic	0.11	0.23	0.98	0.49	0.06	-0.46
	Estonia	1.35	-0.30	0.12	-0.27	-0.31	-0.01
	Hungary	-0.82	-0.91	0.52	-0.51	-0.12	-0.87
	Latvia	0.02	-1.52	0.78	-1.78	-0.48	-0.76
	Lithuania	-0.26	-0.82	0.68	-1.07	-0.26	-0.53
	Poland	0.73	-0.55	1.02	-0.27	-0.45	-0.51
	Romania	-1.79	-2.24	1.32	-1.75	-0.70	-1.87
Oceania	Slovak Republic	-1.24	-1.00	1.23	-0.13	-0.43	-0.76
	Slovenia	0.02	0.90	1.07	-0.29	0.04	-0.47
Oceania	Australia	0.75	0.71				0.93
	New Zealand	0.24	0.05 <sup>1</sup>				1.41
Northern America	Canada	1.36	0.17 <sup>1</sup>				1.00
	United States	0.00	-0.68 <sup>1</sup>				0.23
Eastern Asia	Japan	1.83	1.21				0.42
	Korea	2.05	0.69				-0.67

<sup>1</sup> Data are (partially) from 2011. Notes: See chapters 2-7 for more details. A score of 0 (+1) implies that the performance was equal to (1 standard deviation above) the average performance in the reference group of 24 EU Member States. Hence, higher scores correspond to better performance. Source: Eurostat, OECD, UNODC, EU-SILC, World Bank, SCP treatment.









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