

## Chapter 4

### Non-standard work, job polarisation and inequality

*This chapter provides evidence for the implication of trends in non-standard work for individual and household earnings and income inequality. It first presents the socio-demographic characteristics of non-standard workers before discussing the contribution of non-standard work to overall changes in employment. It shows that, in a majority of OECD countries, standard jobs have disappeared in the middle of the distribution in terms of wages and skill, while non-standard jobs have contributed to an increase in jobs at both ends of the distribution. Non-standard jobs tend to pay lower wages than standard jobs, especially at the bottom of the earnings distribution, thereby raising earnings inequality. The chapter then looks at the impact of non-standard work on household incomes and shows that non-standard workers living alone or with other non-standard workers suffer from higher chances of low income and poverty. Finally, the chapter examines the work incentives and adequacy effects of tax and benefit rules. It finds that some non-standard workers, such as the self-employed, usually face different statutory rules and shows that taxes and benefits reduce poverty gaps for non-standard workers but create work disincentives for moving from inactivity to work.*

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

## 4.1. Introduction and key findings

Changes in earnings – which constitute three-quarters of household income – and in labour market conditions have been identified as the most important direct driver of rising income inequality. This concerns, in particular, changes in the distribution of gross wages and salaries, which have become more dispersed in most OECD countries in the past 25 years. But this is also linked to changes in employment patterns, working conditions and labour market structures. For instance, growing levels of non-standard work, such as part-time work, casual work and work on temporary contracts, may help to explain the puzzle of increasing inequality despite aggregate employment growth prior to the global economic crisis.

The effects of the rising share of employment in non-standard work (NSW) arrangements have gained centre stage in policy debates in recent decades. Since the 1980s, labour markets in OECD countries have been subject to major structural changes. The employment protection legislation (EPL) became less strict in countries where protection had been relatively strong to start with, while countries where the strictness of the EPL was below average in 1985 tended to stick with a similar policy in the late 2000s (OECD, 2011). Alongside these institutional changes, demographic and societal developments – ageing and higher female labour market participation – have also profoundly modified the labour force. Finally, structural changes in employment due to growth in services and knowledge jobs, a greater use of ICTs and just-in-time delivery have all had implications for the demand and supply drivers of atypical forms of work. As NSW is often portrayed as being associated with lower earnings and with job insecurity, this has drawn attention to its potentially adverse impact on the distribution of individual earnings as well as of household income more generally.

Evidence from OECD (2011) has shown the impact of non-standard work on the level of overall earnings inequality: adding the earnings of part-time workers to the distribution of full-time employees increased earnings inequality by almost 20%, and adding self-employed workers increased inequality by a further 5%. In addition, policy reforms such as weaker employment protection for temporary contracts have tended to increase *employment* opportunities but were associated with wider *wage inequality*.

There is however a lack of empirical evidence on the detailed channels through which non-standard work may affect the distribution of individual and household income. Non-standard employment might be associated with poorer labour conditions (wages, working time, job security, leave entitlements, etc.), particularly in the case of dual or segmented labour markets, if firms use such arrangements for cost or flexibility reasons or as a probationary device. On the other hand, part-time, temporary and self-employment arrangements may be attractive to certain workers, and workers might choose this type of employment to achieve a better work-family life balance, higher life satisfaction or, in the case of self-employment, a greater sense of control. The degree of mobility between both segments is also likely to influence whether there are persistent wage differentials between both sectors.

The chapter is organised as follows. Section 4.2 defines different forms of non-standard work and the demographic composition of these workers. Section 4.3 analyses the extent to which employment growth stems from non-standard work and how NSW contributes to job polarisation. Section 4.4 looks at the question of whether non-standard jobs pay less and whether such jobs improve employment prospects. It also discusses the implications for the distribution of earnings. The contribution of NSW to

household income inequality and poverty is discussed in Section 4.5. Finally, Section 4.6 presents the impact of tax-benefit policies on income adequacy and on work incentives for non-standard workers.

The key findings from this chapter are:

- Non-standard work (temporary, part-time and self-employment taken together) represents one-third of total employment in the OECD, ranging from a low of under 20% in the eastern European countries (except Poland) to 46% or more in the Netherlands and Switzerland. Women (especially part-time), youth (especially temporary jobs) and workers with lower level of education are over-represented in NSW, as are workers in small firms.
- Close to half of employment growth since the 1990s and up to the global economic crisis has been in the form of non-standard work; the share reaches almost 60% of if the crisis years are included.
- Non-standard work contributes to job polarisation, i.e. to jobs disappearing in the middle of the distribution relative to those at the bottom and at the top: nearly all employment losses in middle-skill occupations were in standard work contracts, while job gains in high- and low-skill jobs were mainly in NSW.
- Non-standard work is not always a stepping stone to stable employment. Temporary contracts increase the chances of acquiring a standard job compared with remaining unemployed, but a part-time job or self-employment does not increase the chances of a transition to a standard job.
- Non-standard workers are worse off in terms of many aspects of job quality. They tend to receive less training and, in addition, those on temporary contracts have more job strain and have less job security than workers in standard jobs. Earnings levels are also lower in terms of annual and hourly wages but, for part-timers, once other demographic and job characteristics are taken into account, the differences in hourly wages tend to disappear. On the other hand, compared with permanent workers, temporary workers face substantial wage penalties, earnings instability and slower wage growth.
- Non-standard work tends to lower wages at the bottom of the earnings distribution, while the effect is often neutral at the top, thereby contributing to increased individual earnings inequality.
- Adding earnings from non-standard work to households where standard work is the norm increases household earnings inequality by three Gini points on average and help explain about 20% of household income inequality.
- Slightly more than half of non-standard workers are the main breadwinners in their household, and the great majority of them (80% or more) live in a household with two persons or more, including children.
- While not all low-wage non-standard workers live in low-income households, households with non-standard work arrangements are overrepresented at the lower end of the household income distribution. But the household constellation matters: low-income and poverty risks are five and ten times higher respectively if NSW is the main source of earnings rather than if NSW live with a standard worker.

- About 60% of working poor households are households where the main source of earnings is NSW.
- Non-standard workers face different statutory and effective entitlements to taxes and benefits in comparison to workers in standard jobs. For the self-employed, this is due to structurally different policy rules, while for part-timers it is the particular circumstances of these jobs that lead to different outcomes in terms of adequacy and incentives. In most countries, taxes and benefits significantly reduce in-work poverty gaps for NSW, though they are more effective for part-time than for self-employed workers.

## 4.2. A snapshot of non-standard work

There is no universally accepted definition of non-standard work arrangements. In its broadest sense, NSW may be defined as all employment relationships that do not conform to the “norm” of full-time, regular, open-ended employment with a single employer (as opposed to multiple employers) over a long time span. Such a broad definition of non-standard employment includes three partly overlapping types: a) self-employment (own-account workers<sup>1</sup>); b) temporary or fixed-term contracts; and c) part-time work.<sup>2</sup> It is clear that such a definition comprises very different groups of workers: for some (e.g. involuntary part-timers), this employment may have job characteristics associated with precariousness (low pay, instability); for others (e.g. voluntary part-timers with long tenure), such a job may actually be a desired outcome. Furthermore, transforming this definition into comparable cross-country statistics is not without problems, and the process is constrained by data availability (Box 4.1).

### Box 4.1. Defining non-standard forms of employment

Figures on non-standard employment are not easily comparable across countries because of national differences in definition and measurement. The difficulties in defining non-standard work on a comparable basis are accentuated if attempts are made to link non-standard forms of employment with wages and household earnings, as few data sources contain information on both employment and wages over time. Labour force surveys or household surveys typically ask respondents first, to classify themselves as employees or self-employed according to their status in their main job, and then ask employees to report on their type of contract and their working hours. Self-reporting errors may be present in such information, and figures should be used to indicate broad levels and trends across countries.

In its broadest sense, NSW arrangements are defined by what they are *not*: full-time dependent employment with a contract of indefinite duration, or what is generally considered the “standard” work arrangement. This definition generally implies that self-employed own-account workers and all part-time workers fall under “non-standard workers”. While problematic – as this lumps together precarious and non-precarious forms of work – this convention is followed by a large part of academic international and national research (e.g. Houseman and Osawa, 2003; Wenger, 2003; Görg et al., 1998; Kalleberg et al., 1997; Kalleberg, 2000; Leschke, 2011), as well as by international organisations (e.g. International Labour Organisation, World Bank, Eurofound).

As noted above, this chapter breaks down non-standard employment into three separate categories: 1) self-employed (own-account), 2) temporary full-time employees and 3) part-time employees (including permanent and temporary contracts). Unpaid family workers are excluded from the analysis. Where possible, a distinction is made to break down the category of part-time employees into voluntary and non-voluntary part-timers, as well as part-timers on temporary and permanent contracts.

The distinction between different forms of employment has become increasingly blurred. There is a growing grey area, for instance between self-employment and wage employment (OECD, 2000). The growth in the numbers of self-employed contractors working for just one company or franchisees constitute groups on the borders of dependent and self-employment.

#### **Box 4.1. Defining non-standard forms of employment (cont.)**

Temporary jobs for the purpose of this analysis are defined as dependent employment of limited duration, including temporary work agency, casual, seasonal or on-call work. Definitions across countries outside the European Union are not harmonised and are based on different approaches. For Korea, workers in temporary jobs include fixed-term jobs or jobs of a limited duration, which is close to so-called contingent workers, as well as other atypical workers, i.e. temporary agency workers, individual contract workers, at-home workers, on-call workers and others. In the case of Australia, a broad definition of temporary work includes jobs of fixed-term duration, those employed through a labour hire or a temporary work agency as well as casual workers. Casual workers may lack entitlements to key fringe benefits such as paid vacation or sick leave or may not be protected by legislation against unfair dismissal, but might otherwise have continuous and stable employment, and are therefore one form of atypical or NSW. In this respect, this definition follows the work undertaken by the Australia Productivity Commission (2006) in classifying casual work as one form (and the most sizeable one) of non-standard work.

Part-time employees are defined based on their weekly working hours, namely working less than 30 hours per week. This may differ from national definitions which use different hours thresholds. Part-time work is also further disaggregated into part-time temporary and part-time permanent jobs when the data is available.

Employment in NSW arrangements in the OECD today is sizeable, comprising on average one-third of total employment (Figure 4.1). Permanent full-time employment remains nonetheless the norm in a majority of OECD countries, although there is substantial diversity across countries. In the Netherlands, more than one job in two is non-standard (though more than half of these are permanent part-time jobs), while in some eastern European countries the share is less than one in four jobs.

#### ***Different forms of non-standard work and their prevalence across the OECD***

The three main forms of non-standard work, i.e. self-employment, temporary employment and part-time work, account for fairly similar shares on average in the OECD, but they differ greatly by country (Figure 4.1, Panel A). For instance, self-employment is the most prevalent form of non-standard work in Greece, Turkey and the Czech Republic. On the other hand, part-time employment represents close to or over 60% of total non-standard employment in the Netherlands, the Nordic countries (except Finland), Belgium, Luxembourg and Switzerland, while it is only 12% in Korea and Poland. In Australia, where a broad definition of temporary employment also includes casual workers (Box 4.1), this type of work accounts for 85% (43%) of part-time (full-time) workers with a temporary employment contract.

Part-time workers are a very heterogeneous group with very different labour supply patterns. Some people work part-time because they wish to do so and would not take on full-time employment, while others do so because there is no full-time employment available. On average, involuntary part-time accounts for close to 30% of total part-time employment, with just under half of this associated with a temporary contract (Figure 4.1, Panel B). There are, however, large variations across countries. In Greece, Spain and Italy, over 60% of part-timers want to work more hours but could not find full-time jobs. In contrast, in Austria, Luxembourg, the Netherlands, Belgium and Switzerland, part-time work is predominantly voluntary and is associated with a permanent contract.

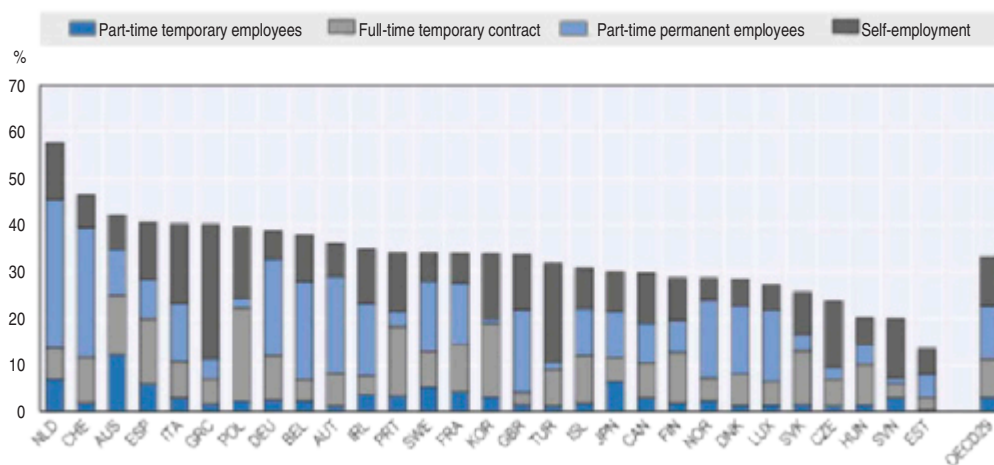
The characteristics and preferences of workers, as well as institutional factors and the sectoral composition of employment, all play a role in explaining cross-country differences in the share of non-standard workers. The tax wedge, product market regulations, employment protection legislation and the size of the public sector have been found to have



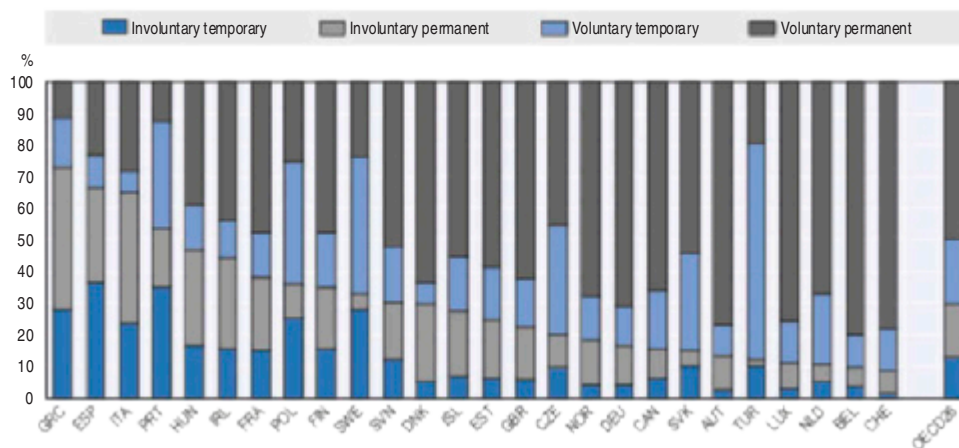
an impact on the incidence of different categories of non-standard work. For instance, there is a well-established negative relationship between the level of GDP and the self-employment rate (Acs et al., 1994). In addition, self-employment rates tend to be high in countries where the public sector is small, taxation levels are high, product market regulation (PMR) is tight<sup>3</sup> and the rule of law is weakly enforced (OECD, 1999; Schuetze, 2000; Torrini, 2005). Temporary employment tends to be higher in countries with stricter employment protection legislation for regular workers (OECD, 2014; Chen et al., 2015, forthcoming). One explanation put forward is that the employment protection of permanent jobs has a minor impact on total employment, but leads to a stronger substitution of temporary jobs for permanent jobs (Cahuc et al., 2012).

**Figure 4.1. Share of non-standard employment by type, 2013**

Panel A. Non-standard forms of employment as a percentage of total employment



Panel B. Part-time employment by type



*Note:* Sample restricted to paid and self-employed (own account) workers aged 15-64, excluding employers, student workers and apprentices. Breakdown of part-time employment by voluntary/involuntary is not possible for non-European countries. Panel A. For Australia, 42.6% of full-time temporary contract are casual; and 85.2% of part-time temporary employees are casual.

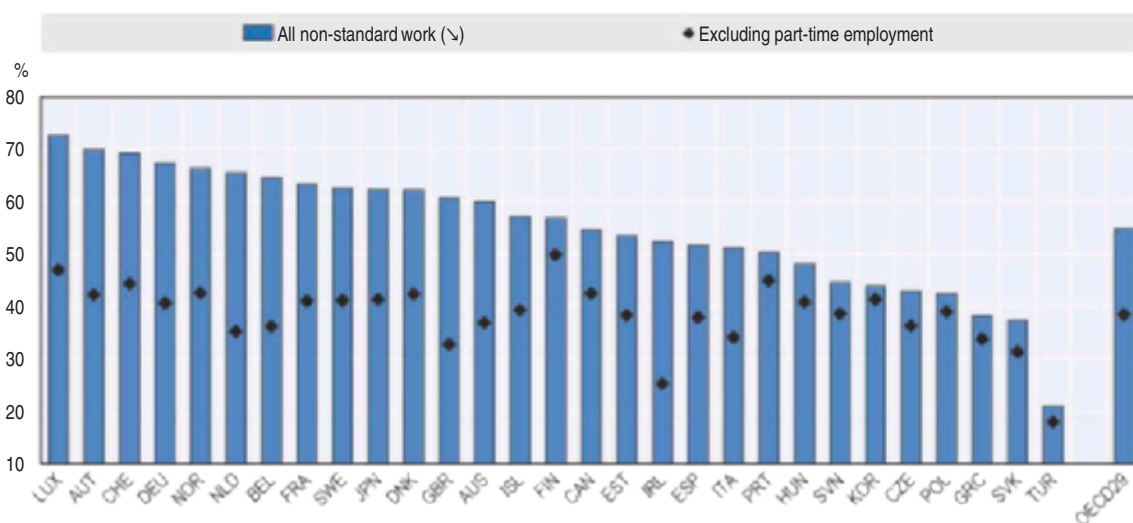
*Source:* European Union Labour Force Survey (EU-LFS, 2013), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Japan Labour Force Survey “Basic Tabulation” (2012), Korean Labor & Income Panel Study (KLIPS, 2009) and Labour Force Survey (LFS, 2013) for Canada.

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### Typical profiles of non-standard employment by worker characteristics

Given the predominance of part-time work in total non-standard employment in many countries, women are disproportionately represented among non-standard workers in about half of the OECD countries (Figure 4.2). They represent close to 70% of non-standard workers in Luxembourg, Austria and Switzerland, and more than 60% in most Nordic countries, the Netherlands, Germany, France, Belgium and Japan. If part-timers are excluded, women account for roughly 38% of non-standard employment (i.e. full-time temporary employment and self-employment), with higher shares (close to 50%) in Finland, Luxembourg and Portugal.

Figure 4.2. Share of women in non-standard employment, 2013



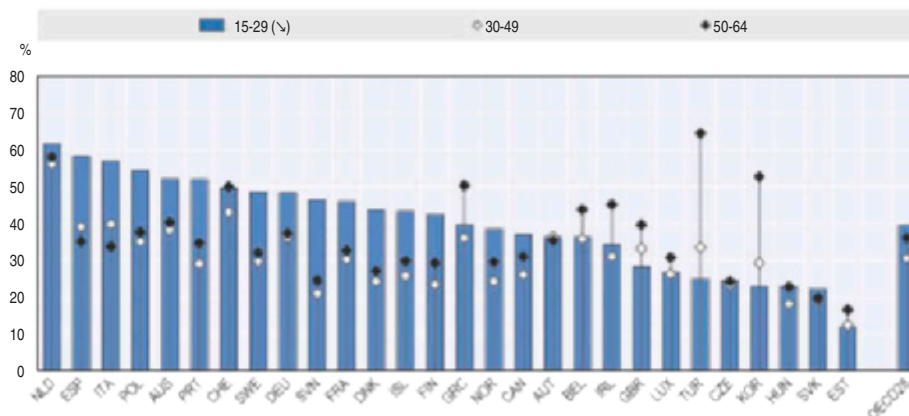
Note: Sample restricted to paid and self-employed (own account) workers aged 15-64, excluding employers, student workers and apprentices.

Source: European Union Labour Force Survey (EU-LFS, 2013), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Japan Labour Force Survey “Basic Tabulation” (2012), Korean Labor & Income Panel Study (KLIPS, 2009) and Labour Force Survey (LFS, 2013) for Canada.

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While youth represent a small fraction of total non-standard workers (less than 25%), they are the group with the highest incidence of NSW (Figure 4.3). The incidence of NSW is 40% among younger workers (versus 30% for prime-age), and it is over 50% in Australia, the Netherlands, southern Europe and Poland. This mostly involves younger workers on temporary contracts. On average in the OECD, 43% of temporary workers are aged 15 to 29, and this share is over 60% in Austria, Germany and Switzerland, suggesting that these jobs are often entry ports for young workers (figures not shown).

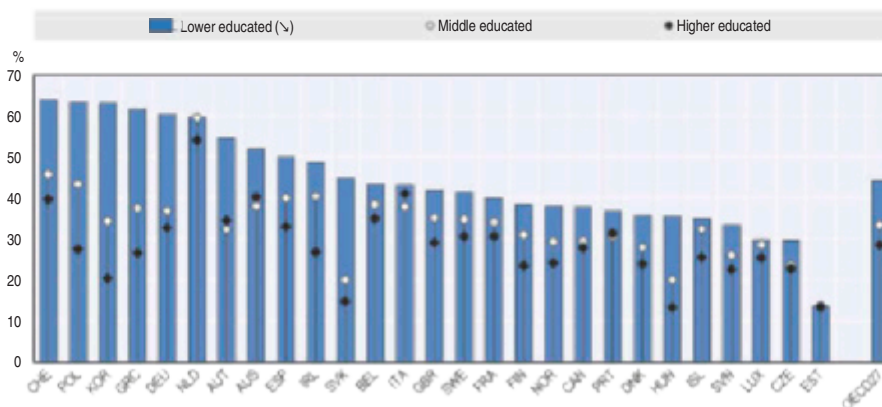
Education and skill levels also matter. The incidence of non-standard employment is highest among workers with a lower level of education (around 44%) and lowest among the higher educated (Figure 4.4). In particular, the incidence of non-standard work among those with a lower level of education is over 60% for workers in Greece, Korea, Poland, Switzerland, Germany and the Netherlands.

**Figure 4.3. Incidence of non-standard employment by age group, 2013**

*Note:* Sample restricted to paid and self-employed (own account) workers aged 15-64, excluding employers, student workers and apprentices.

*Source:* European Union Labour Force Survey (EU-LFS, 2013), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009) for Korea and Labour Force Survey (LFS, 2013) for Canada.

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**Figure 4.4. Incidence of non-standard employment by educational attainment, 2013**

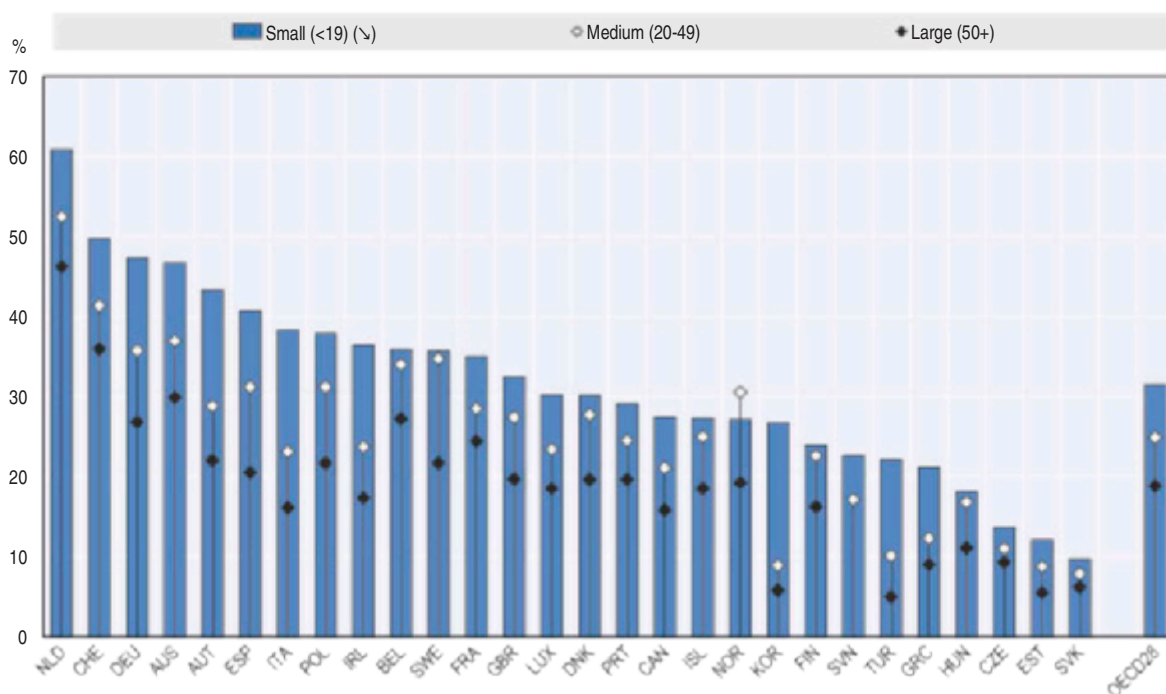
*Note:* Sample restricted to paid and self-employed (own account) workers aged 15-64, excluding employers, student workers and apprentices. Lower educated corresponds to basic education to levels 0 to 2 of the International Standard Classification of Education (ISCED), middle educated to ISCED 3-4 and higher educated to ISCED 5-6.

*Source:* European Union Labour Force Survey (EU-LFS, 2013), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009) for Korea and Labour Force Survey (LFS, 2013) for Canada.

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Non-standard workers are also more likely to be found in small firms (Figure 4.5). Small firms might be more likely to make use of NSW arrangements as a screening process, or they may prefer more flexible work arrangements to cope with fluctuations in demand when lay-off costs for permanent workers are high (Bentolila and Saint-Paul, 1994). Indeed, a little less than half of all non-standard workers (excluding the self-employed) are working in small enterprises. Incidence of non-standard work is highest among small firms in the Netherlands with over 60%, followed by Switzerland, Germany and Australia, where close to 50% of workers in small firms are in NSW.



**Figure 4.5. Incidence of non-standard employment by firm size, 2013**

*Note:* Sample restricted to paid workers aged 15-64, excluding employers, self-employment, student workers and apprentices. For Australia and Canada, medium size refers to 20-99 workers and large to 100+ workers.

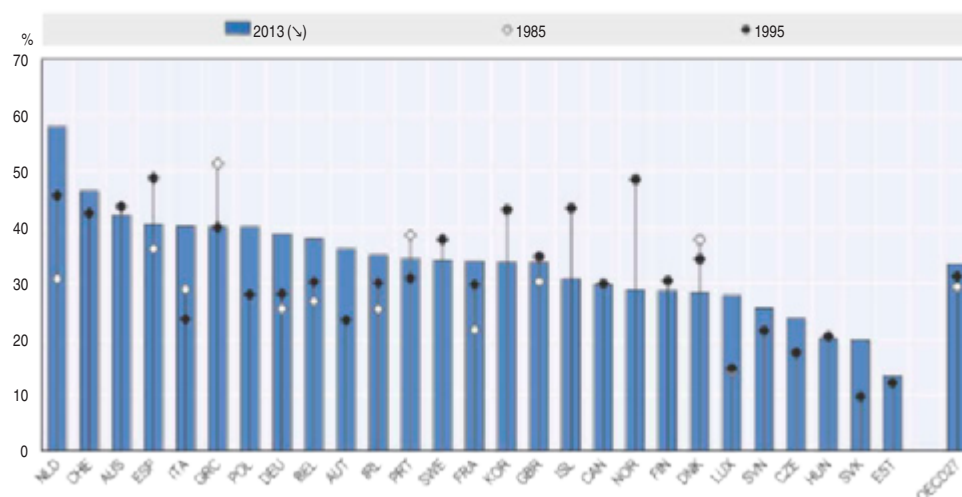
*Source:* European Union Labour Force Survey (EU-LFS, 2013), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009) for Korea and Labour Force Survey (LFS, 2013) for Canada.

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### 4.3. The role of non-standard employment in overall employment growth and job polarisation

#### *How did non-standard work contribute to employment growth?*

Non-standard employment has increased in OECD countries, but only at a moderate level. On average, the share of non-standard employment increased by two percentage points between 1985 and 1995 in 12 countries for which data is available (Figure 4.6), and by another two points between 1995 and 2013 for a larger sample of countries. Non-standard employment has grown significantly in the Netherlands, where it increased by almost 30 percentage points, as well as in Austria, France, Germany and Luxembourg. In some Nordic countries (Iceland, Norway, Denmark), Greece and Korea, on the other hand, it declined by 20% or more. In Spain, non-standard employment increased until 1995 but declined in the subsequent decade.

**Figure 4.6. Trends in shares of non-standard employment, shares in total employment, 1985-2013**

*Note:* Sample restricted to paid and self-employed (own account) workers aged 15-64, excluding employers, student workers and apprentices.

1. Indicates 1998 instead of 1995 for Czech Republic, Estonia, Hungary, Luxembourg, Poland, Slovak Republic, Slovenia, and Switzerland.

*Source:* European Union Labour Force Survey (EU-LFS, 1985, 1995, 2013), Household, Income and Labour Dynamics in Australia (HILDA, 2001, 2012) for Australia, Korean Labor & Income Panel Study (KLIPS, 1999, 2009) for Korea and Labour Force Survey (LFS, 1997, 2013) for Canada.

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While the overall increase was moderate, NSW represents a substantial fraction of the overall employment created since 1995: on average across countries, more than 40% of the growth in employment in the period up to the global economic crisis is attributable to non-standard jobs (Figure 4.7, Panel A). However, the trends vary largely by country. In Austria, Germany, the Netherlands and the Czech and Slovak Republics all employment growth over this period can be attributed to non-standard employment. During this same period, the total number of workers in standard employment in these countries has fallen, especially in Germany. Nevertheless, standard work was an important source of employment growth prior to the crisis in many other OECD countries, such as Norway and Greece but also Iceland and Hungary (where non-standard jobs declined).

The share of *part-time permanent employment* increased in more than half of the countries up to the global economic crisis and has contributed in itself to more than one-third of non-standard employment growth and 15% of overall employment growth. The rise in part-time employment was very prominent in Ireland, Luxembourg and Belgium, with growth of at least 10%. On the other hand, part-time employment declined sharply in some of the Nordic countries. Evidence shows that higher female labour force participation accounts for more than half of the growth in part-time employment in Europe and the United States during the 1980s and 1990s (OECD, 2010). Further evidence shows that part-time work has not developed at the expense of full-time employment (e.g. Jaumotte, 2003; Genre et al., 2005). In countries where part-time employment is widespread, inactivity rates are much lower. The relationship between part-time work, full-time work and inactivity varies significantly across different demographic groups. Higher part-time shares are unambiguously associated with a larger labour supply for youth and older workers, while

prime-age women may be substituting part-time work for full-time work in order to balance work and family life (OECD, 2010).

*Temporary employment* has increased in more than three-quarters of the countries and constitutes the bulk of growth in non-standard employment. The increases during the pre-crisis period were particularly large in Poland, Portugal and Spain, with growth of over 10%. In Poland, all employment growth during this period was in the form of temporary employment, while other types of jobs declined. There is also some evidence that strict EPL for permanent workers together with the weakening of regulations for temporary employment have contributed to the growth in the share of temporary jobs in some European countries, such as Spain.

Trends in *self-employment* are more mixed, with most countries showing stability and even a small decline, although a few countries experienced larger changes. Hungary and Poland have the largest relative declines in self-employment rates. This downward trend is strongly correlated with a reduction in the agricultural sector in OECD countries. At the same time, there has been growth in the numbers of own-account self-employed working for just one company. For some of this group, self-employment may be linked to tax incentives or employment protection legislation, i.e. the phenomenon of so-called “false” self-employment, especially in the sectors of construction, real estate and business activities. For instance, as a response to this phenomenon, a tax reform was introduced in the Czech Republic in 2004 to halt the spread of “false” self-employment, although the ban was overturned in 2007. While it remains difficult to isolate the effect of policy reforms from other factors, the incidence of own-account work increased less in the Czech Republic than in the Slovak Republic during this period (OECD, 2008a). In Italy, the legislation introduced in 1997 and 2003 to legalise temporary work agencies (while reforming collaboration agreements) may have led to an increase in self-employed workers who are in fact working for the same company, but as own-account workers.

The pattern of employment dynamics evolved differently during the recent global crisis (2007-13). Foremost, instead of the approximate 17% growth in employment recorded in the pre-crisis period (1995-2007), Figure 4.7 (Panel B) reports, on average, a 2% drop in the total number of persons employed in the latter period. There is, however, large cross-country variation. In about half of the countries, the loss in employment is mainly associated with standard jobs. In Greece and Ireland, for instance, the decline in the number of standard workers is responsible in itself for 15% drop in total employment over this period.

Full-time temporary workers were also hit hard during the global economic crisis. In Spain, for example, the losses of such jobs accounted for the biggest part of the drop in total employment, while in Portugal and Slovenia this represented 30% and 40%, respectively. The start of a recovery is underway in some countries and in a third of those (including Germany, Luxembourg, Norway, Belgium, Switzerland and Sweden, positive employment growth occurred in standard work during this period. It is also noteworthy that in Germany the number of workers of this type shrank between 1995 and 2007, but then increased again slightly. Changes in the relative share of standard and non-standard workers during the economic recession have led to a discussion about whether the crisis led to a “deskilling” of the workforce, with a destruction of full-time permanent jobs and a rise of more atypical jobs. However, the opposite might have occurred as in some countries, a large share of temporary jobs were eliminated, thus the economic crisis could have led to an up-skilling. So far, the evidence on this topic is inconclusive (Gallie, 2013).

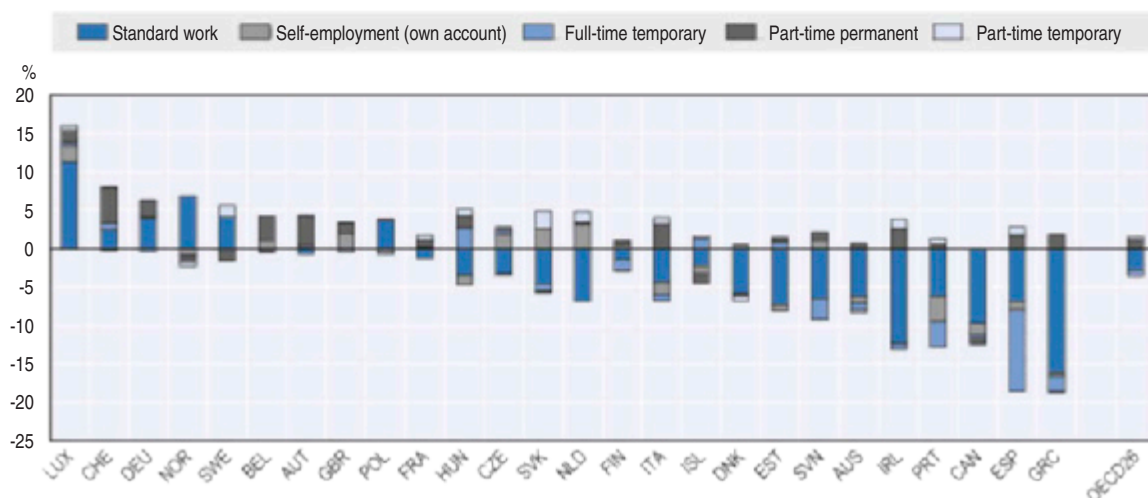
**Figure 4.7. Employment growth by type of employment**

Percentage

Panel A. 1995-2007



Panel B. 2007-2013



*Note:* Working-age (15-64) workers, excluding employers as well as students working part-time. Countries are ranked from left to right in decreasing order for total employment growth. Temporary for Australia includes both casual and fixed-term work.

*Source:* European Union Labour Force Survey (EU-LFS), Labour Force Survey for Canada, Household, Income and Labour Dynamics in Australia (HILDA) for Australia.

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Interestingly, except in Canada and the Nordic countries, the number of part-timers continued to grow, albeit moderately, during the crisis and consolidation/recovery phase. Because of this growth in part-time employment and the important drop in standard employment in many countries, 56% of employment growth can be attributed to non-standard employment in the period from 1995 to 2013 as a whole.

### *Is job polarisation linked to the growth of non-standard employment?*

When employment is divided into three broadly defined tasks – abstract, routine and non-routine manual<sup>4</sup> – a clear and robust pattern of polarisation in job tasks can be seen in most EU countries between the mid-1990s and 2010 (Figure 4.8). The employment shares of routine-task jobs, which are traditionally composed of middle-skill standard job workers, have declined significantly in all OECD countries. At the same time, there has been an increase in non-routine manual jobs (9%), which were more often non-standard jobs and a large increase in the employment share of abstract jobs (21%). The growth of non-routine manual jobs (e.g. drivers or care workers) is more visible in Switzerland, Ireland and Portugal, where the employment share of such jobs grew by 20% or more. In Portugal and Switzerland, for instance, this corresponds to more than two-thirds of the total change in employment over the period. The observed polarisation by task in OECD countries since the mid-1990s has been driven primarily by within-sector movements in employment rather than by changes in the use of tasks between sectors. The within-component alone can explain about 80% of the increase in the share of abstract jobs and 63% of the reduction of routine jobs (see Table 4.A1.1).

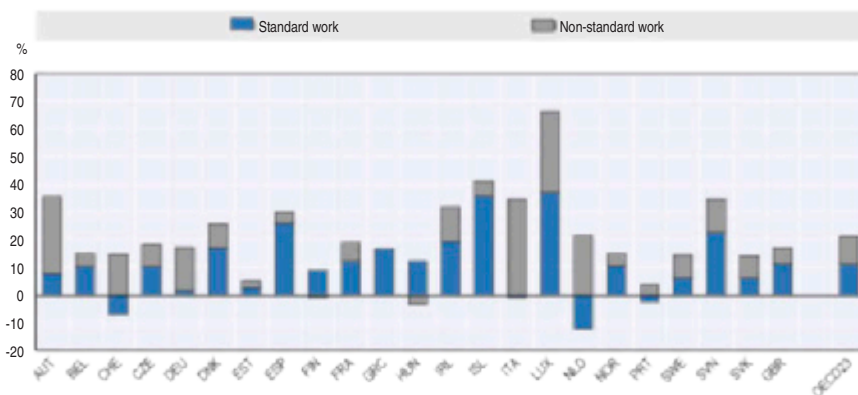
While the literature on job polarisation often emphasises that the adoption of technology significantly alters the tasks performed by workers at their jobs, the analysis below adds another dimension to this phenomenon: the role of non-standard employment. In most countries nearly all the growth in low-skill/non-routine manual jobs (Figure 4.8, Panel C) was in non-standard employment, while losses in middle-skill/routine jobs were primarily associated with standard employment (Panel B), and both non-standard and standard work on average contributed roughly equally to the increase in abstract jobs (Panel A). The graphs also demonstrate a certain degree of “substitution” whereby some standard workers performing low-skilled tasks were replaced by workers with the same skill but on non-standard contracts (e.g. Austria, Germany, Italy, Luxembourg, the Netherlands and Slovenia). In a few countries like Austria, Germany, Italy, the Netherlands and Switzerland, even growth in high-skilled occupations (abstract jobs) was entirely driven by non-standard employment. Since nearly all job losses, regardless of the type of task, were associated with regular work, while growth in employment took place mainly in the form of non-standard employment, technological advancement alone cannot be the only explanation for job polarisation. Labour market institutions and policies have also probably played a role in the patterns of substitution observed in certain countries.

In reality, there is considerable variation in the level of skills used to perform the three broad tasks defined above (and thus wages), and as a result, different patterns of job polarisation could emerge depending on how the skill/value of a job is measured. Another way to look at employment polarisation is to use the “jobs-based” approach to analyse employment shifts (see Annex 4.A1 for a detailed description).<sup>5</sup> In general, the analysis based on this approach and presented in Figure 4.9 shows a clear trend towards job polarisation in more than half of the countries (i.e. 11 out of 19) for which linked job-wage data is available (Panels A and B).<sup>6</sup> In eight countries the pattern of employment shifts is strongly U-shaped across job deciles, with contractions of employment shares in the middle of the distribution and expansions at both ends. In Germany, for instance, the employment share of the least-paid and highest-paid jobs increased by about 2.7 and 2.3 percentage points, respectively, between 1995 and 2010, whereas the share of employment has fallen in most other job deciles. Polarisation varies across countries, however. For instance, jobs vanished mostly in the lower-middle (i.e. 2<sup>nd</sup>-5<sup>th</sup>) deciles of the skill distribution in Belgium, Canada, France and Norway, but in the more central (i.e. 3<sup>rd</sup>-7<sup>th</sup>) deciles in Germany, Finland, the Netherlands and the United Kingdom.



**Figure 4.8. Contribution of non-standard work/standard work to changes in employment share by task, 1995/98-2010**

Panel A. Abstract task



Panel B. Routine task



Panel C. Non-routine manual task



*Note:* Standard and non-standard workers, respectively, as defined in the text, with occupations classified as follows: Abstract (ISCO88: 12-34); Routine (ISCO88: 41-42, 52, 71-74, 81-82 and 93); and Non-routine manual (ISCO88: 51, 83 and 91). The overall sample is restricted to workers aged 15-64, excluding employers as well as students working part-time.

*Source:* European Union Labour Force Survey (EU-LFS).

StatLink  <http://dx.doi.org/10.1787/888933208091>

Using the “job-based” approach to classify employment confirms that a shift from standard towards non-standard employment (i.e. de-standardisation of the employment contract) played a crucial role in the trend in job polarisation between 1995 and 2010. Among countries exhibiting a polarisation in jobs over this period (Panels A and B), some degree of polarisation in standard employment alone is observed, with a significant decline in this type of employment in the middle of the job spectrum. The pattern of polarisation becomes more visible once non-standard is factored in, as net expansion in such work has been concentrated mostly in both the lowest-paid and highest-paid occupations.<sup>7</sup>

Similarly, non-standard employment also intensifies the patterns towards job upgrading in Luxembourg, Italy and Sweden where there was an obvious expansion of atypical jobs in the top of the job distribution (Panel C). The growth in self-employed professionals may be part of the story of this development. Interestingly, in Poland and the Czech Republic changes in non-standard work tend to reduce the degree of upgrading in employment, as expansion of non-standard jobs was concentrated mostly in the middle to lower-end of the job deciles.

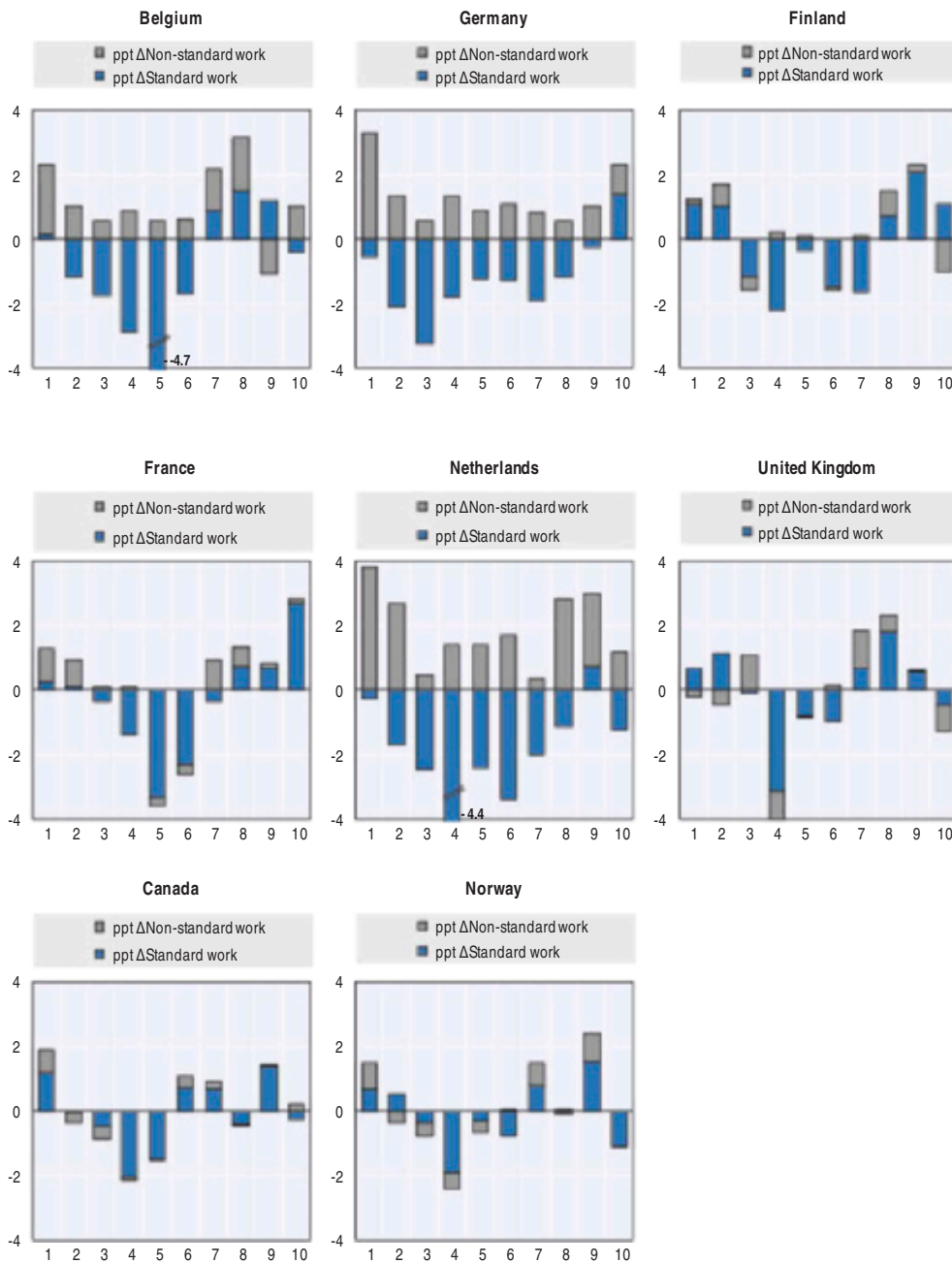
It is also noteworthy that in a few countries, such as Germany, the Netherlands and Poland, a decline in mid-range standard jobs was accompanied by similar growth in non-standard employment within the same job deciles, resulting in a moderate overall loss of jobs in the middle.

These findings suggest that the “routinisation” story cannot be the only explanation for the hollowing out of the middle, since the vanishing standard jobs in the middle, if driven by technology, cannot be easily replaced by workers with the same skill but in non-standard forms of employment.

Other mechanisms, in particular institutional changes such as those favouring more flexible labour force, are also at work in reshaping the pattern of employment polarisation in these countries. Some of the countries that experienced polarisation were characterised by high levels of employment protection legislation for regular jobs (full-time or part-time permanent) and low levels of protection for temporary jobs (full-time or part time), while others were not. Supply side factors, such as an increase in educational attainment or migration,<sup>8</sup> could also accelerate/decelerate the pace of job polarisation.

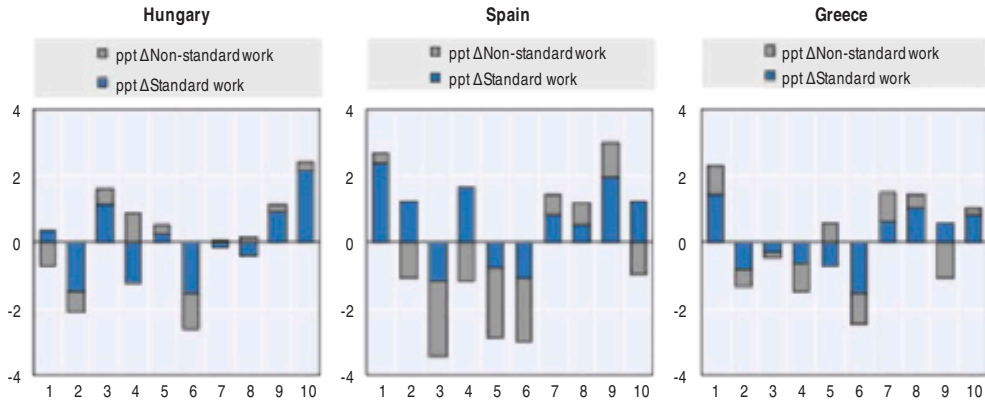
**Figure 4.9. Percentage-point change in employment share due to non-standard work/standard work by job decile, mid-1990s to 2010**

Panel A. Strong polarisation

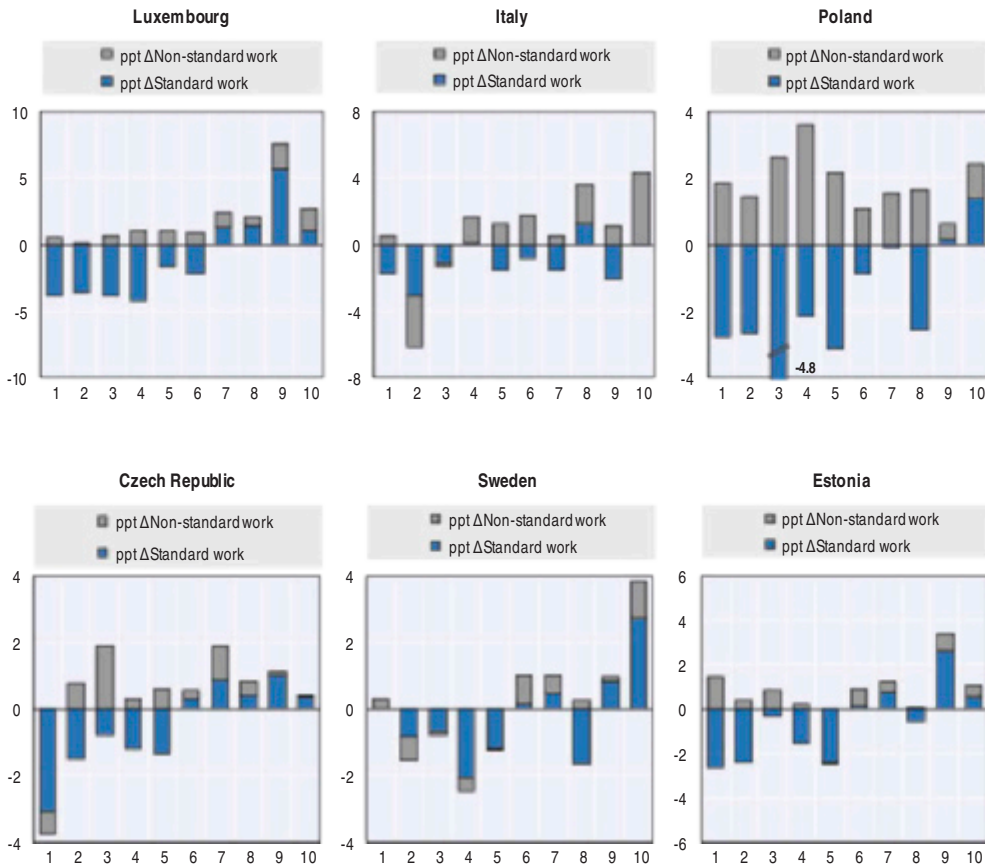


**Figure 4.9. Percentage-point change in employment share due to non-standard work/standard work by job decile, mid-1990s to 2010 (cont.)**

Panel B. Moderate polarisation

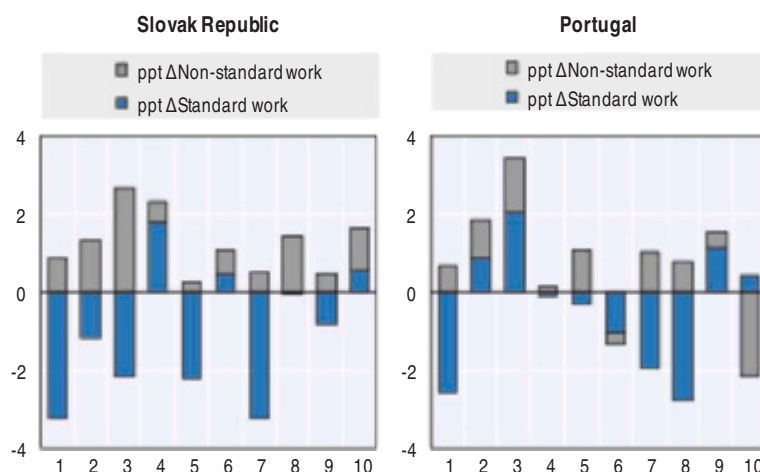


Panel C. Upgrading



**Figure 4.9. Percentage-point change in employment share due to non-standard work/standard work by job decile, mid-1990s to 2010 (cont.)**

Panel D. Other



Note: Working-age (15-64) workers, excluding employers as well as students working part-time.

Source: European Union Labour Force Survey (EU-LFS).

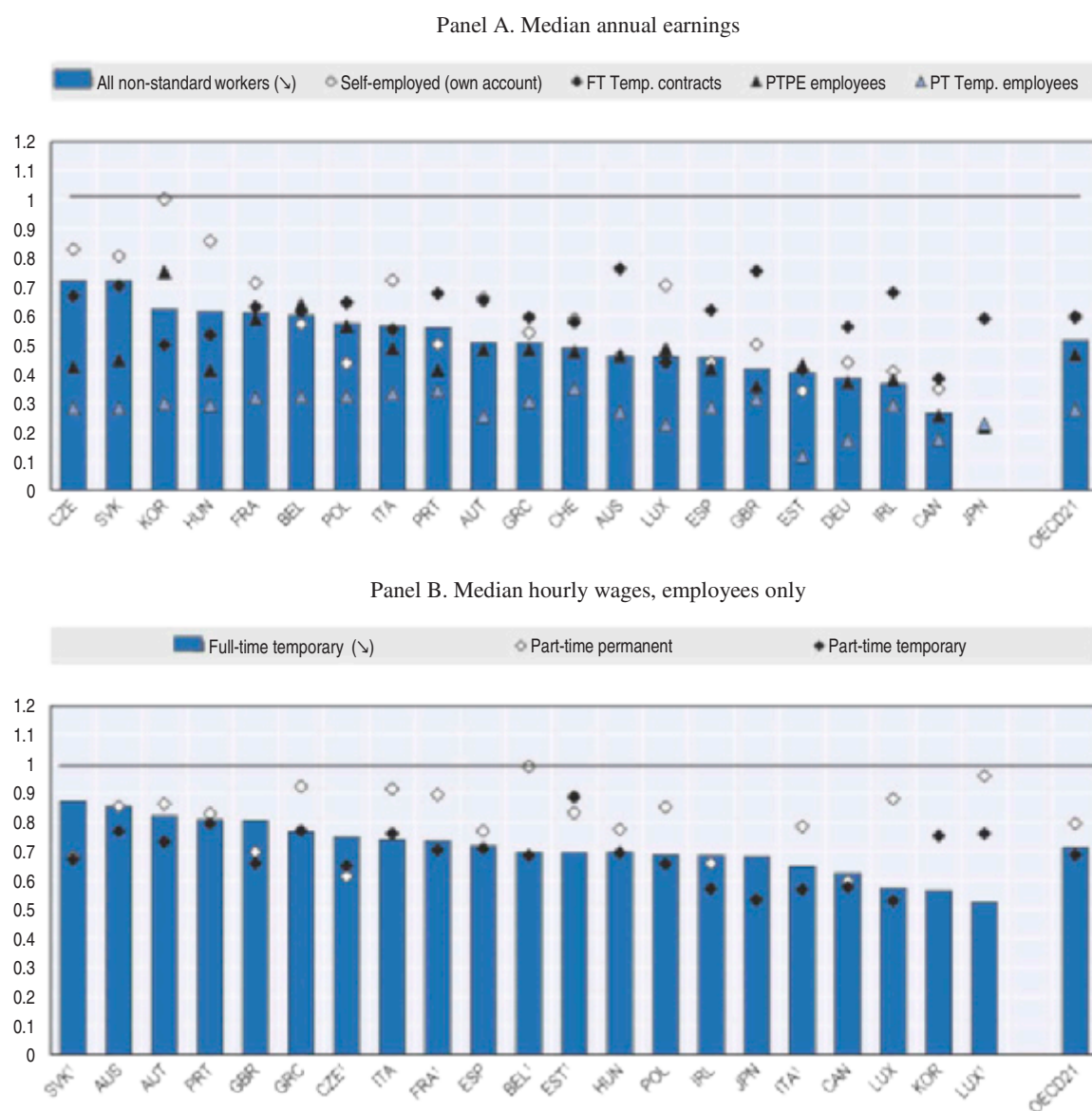
StatLink  <http://dx.doi.org/10.1787/888933208102>

#### 4.4. Wage gaps between standard and non-standard workers and their impact on the distribution of earnings

All types of NSW arrangements pay lower hourly wages and lower annual earnings than do standard jobs (Figure 4.10).<sup>9</sup> The median *annual earnings* of all non-standard workers are almost half the level of those for standard workers across the OECD. Median annual earnings for part-timers are less than half those of standard workers and even 70% lower for part-time temporary workers, reflecting a lower take-home pay due to fewer working hours. Earnings for temporary workers and for own-account self-employed workers – who have similar weekly hours as standard workers – are still some 40% lower. Workers on temporary contracts have particularly low annual earnings in Estonia, Canada and Luxembourg. The annual median earnings of the self-employed are closer to the level of standard workers in the Czech and Slovak Republics, Hungary and, especially, Korea, but they are considerably lower in Canada and Estonia.

For the selection of countries for which data are available, the *hourly wages* for temporary and part-time employees are around 70 to 80% of the median hourly wages for standard workers (Figure 4.10, Panel B), which is smaller than the difference for annual wages. The gap in hourly wages is nevertheless high for temporary workers in Luxembourg, Korea and Canada and for part-time workers in Canada and Japan, who earn less than 60% of the hourly wage of a standard worker. In terms of hourly wages, part-time temporary jobs pay less than part-time permanent jobs, though the differences are small or insignificant in most countries, with notable exceptions (Belgium, Luxembourg, but also France, Greece and Poland). Part-time jobs pay higher hourly wages than temporary jobs in some countries, while they tend to pay less in the English-speaking countries and the Slovak Republic.



**Figure 4.10. Earnings ratio between standard and non-standard workers (standard workers = 1), 2012**

*Note:* Sample restricted to paid workers aged 15-64, excluding employers, self-employment, student workers and apprentices. Temporary contracts for Australia include both casual and fixed-term work. FT: Full-time, PT: Part-time, PTPE: Part-time permanent employment.

1. For seven EU-SILC (European Union Statistics on Income and Living Conditions) countries for which information on monthly wages is not available in the cross-sectional files, hourly wages are imputed from the 2012 longitudinal EU-SILC files, except Estonia and the Slovak Republic which are from 2010. Specifically, hourly wages are calculated as annual earnings divided by annual hours worked. Annual employee earnings are available from the survey, while annual hours worked (total weeks work\*hours worked per week) are derived using monthly vectors of labour force activity (PL211A-PL211L) and as well as weekly hours worked variable (PL060). All wages are expressed in national currency units and are CPI adjusted. Hourly wages are computed as monthly earnings divided by the total number of hours worked per week (x4).

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Basic Survey on Wage Structure (2012) for Japan, Korean Labor & Income Panel Study (KLIPS, 2009) and Survey of Labour and Income Dynamics (SLID, 2010) for Canada.

StatLink  <http://dx.doi.org/10.1787/888933208111>

### ***Low pay: a result of different characteristics of workers or a penalty on non-standard work?***

The observed wage penalties may be partly the result of different worker characteristics. First, standard and non-standard workers may have different levels of human capital and be concentrated in particular occupations and at different stages in their life-cycles. There is evidence that women overall face occupational segregation, particularly part-time female workers, reflecting both demand and supply factors (Bardasi and Gornick, 2008). Temporary or fixed-term contracts may be more prevalent in certain sectors such as construction, hotels and retail, where wages may be lower. Second, employers may also pay lower hourly wages mainly to part-timers as a way to compensate for higher fixed labour costs. Third, even in cases where hourly wages are the same for standard and non-standard work, part-time and temporary workers may receive lower earnings because of lower additional pay compensation such as bonuses: evidence suggests that fixed-term, temporary agency workers and part-time workers are less likely to benefit from profit-sharing (but are as likely to receive paid overtime and individual performance pay) and that part-timers are also less likely to receive overtime pay and team-based bonuses (Venn, 2011).

At the same time, standard and non-standard workers may receive different salaries because they have different unobserved characteristics or because of asymmetric information with respect to their ability between employers and job applicants or workers.<sup>10</sup> Part-time workers, for instance, may be more productive because there is an inverted U-shaped relationship between hourly efficiency and the number of hours, and part-timers might be found on the rising part of the efficiency hours (Booth and Wood, 2006). On the other hand, temporary contracts may be used as a screening device. Firms might also use temporary contracts as a probation device if they cannot screen potential employees directly at a suitable cost to assess whether they are of high ability. In particular, firms can hire temporary workers or workers through temporary help agencies so as to obtain economies of scale in screening and training temporary workers (Autor, 2001; Houseman and Polivka, 1999). Prospective employers may use the type of employment or their earnings history as a sign of low ability or lower productivity and offer them lower wages. Controlling for individual unobserved characteristics is crucial to disentangle the reasons behind wage differentials (see Box 4.2. for the econometric approach).

Previous studies suggest that, once adjustments are made for personal and job characteristics, the wage gap between non-standard workers and standard workers narrows significantly, although an unexplained portion remains. Part-time wage differentials are related to the extent to which part-time workers are concentrated in low-wage occupations. Evidence suggests that much of the wage difference between part-time and full-time workers is explained by differences in workers and jobs, with differences in job characteristics such as occupation or sector being by far more important, and that the wage penalty might be small but rises over the working life, as a result of lower experience levels and accumulated human capital (Hirsch, 2005; Bardasi and Gornick, 2008; OECD, 2010). The under-investment in human capital associated with short-term contracts can give rise to lower wages for temporary workers. Another possibility is that workers accept lower wages with the expectation that this would be followed by more stable careers. In the case of temporary workers, occupational segregation *within* firms is also responsible for an important portion of the unadjusted wage gap (50%) while higher observed skills for those on indefinite contracts working in the same occupation accounts for 30% of the wage differential (De la Rica Goiricelaya, 2004).

### Box 4.2. Estimating the wage penalty between standard and non-standard workers

Individual wages may be considered as a function of individual and job characteristics, including the type of contract:

$$\ln w_{it} = X'_{it}\beta + \alpha NSD_{it} + \mu_i + \varepsilon_{it}$$

where  $i=1, \dots, N$  represents the number of individuals at each wave and  $t=1, \dots, T$  is the number of waves,  $w$  is the hourly wage rate in period  $t$  for individual  $i$ ,  $X$  is a vector of characteristics that influence wages including individual and job characteristics,  $NSD$  denotes non-standard employment status (either part-time or temporary),  $\mu$  is an unobserved individual effect and  $\varepsilon$  is a random error term. Wages are estimated separately for men and women, as the coefficients of certain covariates may vary by gender.

The inability to measure the unobserved individual effects leads to biased estimates of  $\alpha$  if individual fixed effects are correlated with non-standard employment status. Panel-data techniques can be used to focus on wage changes as a result of changes in non-standard employment status, conditional on the values of the individual fixed effects. With the differencing, the permanent component  $\mu$  is purged, and the resulting estimates of the equation yield consistent estimates of the coefficients on the assumption that  $\mu$  is constant within the relevant time frame. This also relies on the assumption that  $X$  and  $NSD$  are orthogonal to the error term  $\varepsilon$ . In addition, first-differencing resolves endogenous selection and non-random attrition problems as long as they are related to the time-invariant individual components.

Three specifications from both cross-sectional and panel data are estimated in the empirical analyses. The baseline specification includes ordinary least squares (OLS) estimates from pooled cross-sectional data to paint a general picture about the wage differences between non-standard and standard workers, controlling for observable characteristics. Specifications (2) and (3) further add interaction terms to examine whether the extent of the wage gap varies by age or skill groups, respectively. To take into account unobserved individual heterogeneity, estimates of the fixed effects model are also provided for four countries (Australia, Germany, Korea and the United Kingdom) for which panel data on hourly wages is available. The fixed effects panel analysis cannot be used for EU-SILC countries, as information on the hourly wage is not available. The samples are restricted to paid employees aged 15-64, excluding self-employed workers. In all specifications, the dependent variable is the logarithm of hourly wages expressed in 2010 constant currency. The main parameters of interest are dummy variables representing different types of non-standard contracts – full-time temporary work (TE), part-time permanent (PTPE) and part-time temporary work (PTTE) – as their coefficients capture the (log) wage differential with reference to standard work. A negative (positive) coefficient therefore indicates a wage penalty (premium) for non-standard workers. To facilitate interpretation, we translate coefficients into percentage difference in hourly wages between various groups of interest and the reference group in Tables 4.1 and 4.2 for men and women, respectively. Since hourly wages are log-transformed, the percentage difference in hourly wages between temporary and standard (reference) employment, for instance, can be obtained by  $[\exp(b^{TE}) - 1] * 100$ , where  $b^{TE}$  is the estimated coefficient on the temporary contract dummy.

*Temporary workers* in all countries face a wage penalty, even after controlling for observable individual, family and work characteristics (Tables 4.1 and 4.2).<sup>11</sup> On average, a temporary contract worker receives an hourly wage that is 11% lower for men than their counterparts in standard jobs (13% lower for women). The wage penalty ranges between almost zero in Australia to 19% in Greece. Similar magnitudes are found in the wage penalties for men and women in most countries. Some noticeable exceptions include Greece, Ireland, Portugal and Korea where the wage penalty tends to be some four to five points higher for women than for men on temporary contracts.

Similarly, in most OECD countries *part-time workers* also tend to earn lower hourly wages than their standard full-time counterparts. However, the degree of the penalty varies depending on the type of contract. In general, the wage penalty is smaller for those

with a permanent employment contract, compared with part-timers with a temporary contract, and for women: it represents 13% for part-time temporary male workers and 9% for their permanent counterpart, while it is 12% for part-time temporary women and 4% for women in part-time permanent employment. The wage penalty for working part-time is especially pronounced in Germany, Ireland and Poland (the latter for men only). In Germany, for instance, the hourly wage for part-time men in temporary jobs is 33% (24% for women) lower than that for full-time standard workers. This may partly reflect the rise of mini-jobs in Germany. Interestingly, part-time work is not associated with any wage penalty in Portugal (for those with permanent jobs). Australia stands out as the only country where a small part-time wage premium is found for female workers.

The analysis reveals that the young and the low-skilled face additional wage penalties in the case of *temporary workers* in almost all countries [Tables 4.1 and 4.2, specifications (2) and (3)].<sup>12</sup> This suggests that the pay levels of young and low-skilled individuals may take longer to converge with the levels of standard jobs if workers start a career with a temporary job. While the wages of temporary workers increase with age and skill level, they grow more slowly than those of standard workers. As a result, the wage differences between temporary and standard workers tend to widen with age or skill. This implies that years of labour market experience may not be valued in the same way for temporary workers as for standard workers. Having a higher education level does not eliminate the wage disadvantage faced by temporary workers. In most countries, those with a university degree are still at a considerable wage disadvantage compared with peers in standard work.

For *part-time workers*, mixed cross-national results are found for wage penalties by age or skill levels. In a number of countries, such as Austria, Belgium, Greece and Korea, a wage penalty for male part-timers compared with their full-time standard equivalents is more pronounced among young workers but tends to be less significant or even disappears for older workers. The opposite, however, is found in Ireland, Italy and Portugal. Similarly, the part-time wage penalty for temporary contract workers is largely driven by less-educated cohorts in some countries (Austria, Belgium) but not in others, such as Germany, where the wage penalty for part-time temporary workers tends to be fairly high and equal across all skill groups.

There are significant gender differences in the wage penalty with part-time work. In general, among those with a permanent contract, the part-time penalty is rather moderate or negligible for women regardless of age or skill groups, but is still apparent for men. In most countries, with the exception of Germany, Ireland and the United Kingdom, a wage premium is even found among young part-time women with a permanent contract.

Table 4.1. Estimates of (log) hourly wage gap between standard and non-standard workers, pooled OLS: Men

	AUS (HILDA)	AUT	BEL	DEU (GSOEP)	ESP	GBR	GBR (BHPS)	GRC	HUN	IRL	ITA	KOR (KLIPS)	POL	PRT
<b>Specification (1)</b>														
Temporary employment (TE)	-0.026***	-0.148***	-0.116***	-0.189***	-0.160***	-0.102***	-0.146***	-0.138***	-0.135***	-0.151***	-0.165***	-0.104***	-0.187***	-0.125***
Part-time permanent employment (PTPE)	-0.088***	-0.055***	-0.051***	-0.239***	-0.100***	-0.174***	-0.116***	-0.074***	-0.075***	-0.194***	-0.063***	-0.070***	-0.146***	-0.140***
Part-time temporary employment (PTTE)	-0.01	-0.051	-0.170***	-0.507***	-0.191***	-0.143***	-0.134***	-0.107***	-0.128***	-0.291***	-0.171***	-0.177***	-0.244***	-0.037
<b>Other controls</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.108***	2.808***	2.861***	3.028***	2.416***	2.949***	2.486***	2.072***	1.407***	2.835***	2.683***	9.053***	1.147***	1.886***
Number of observations	25 449	22 817	3 799	62 434	46 520	19 051	42 703	16 557	24 866	12 838	67 237	21 572	42 964	16 478
<b>Specification (2)</b>														
TE	-0.012	-0.129***	-0.133***	-0.190***	-0.167***	-0.144***	-0.157***	-0.142***	-0.156***	-0.201***	-0.170***	-0.099***	-0.206***	-0.131***
PTPE	-0.185***	-0.097***	-0.075***	-0.185***	-0.067***	-0.251***	-0.088***	-0.127***	-0.135***	-0.171***	-0.077***	-0.058	-0.105***	-0.067
PTTE	-0.098***	-0.233***	-0.166***	-0.560***	-0.184***	-0.023	-0.199***	-0.106***	-0.118***	-0.302***	-0.192***	0.053	-0.291***	-0.024
Age1529	-0.246***	-0.181***	-0.173***	-0.207***	-0.159***	-0.254***	-0.244***	-0.240***	-0.135***	-0.266***	-0.205***	-0.209***	-0.191***	-0.215***
Age5064	0.008	0.097***	0.141***	0.072***	0.128***	0.008	0.017***	0.179***	0.015	0.113***	0.128***	-0.081***	0.009	0.111***
TE:age1529	-0.013	-0.042	0.044	-0.040***	0.071***	0.024	0.019	0.091***	0.068***	0.046***	-0.102***	0.100***	0.038***	0.038***
TE:age5064	-0.044**	-0.043	-0.066	0.045***	-0.091***	0.170***	0.014	-0.108***	0.001	0.097	-0.047***	0.067***	-0.045***	-0.057**
PTPE:age1529	0.169***	-0.027	-0.147**	-0.137***	-0.056	0.069	-0.019**	0.054	0.159***	0.136***	-0.159***	-0.068	-0.023	-0.023
PTPE:age5064	0.133***	0.158***	0.074	-0.062***	-0.059	0.141***	-0.063**	0.168***	0.08	-0.134***	-0.045**	0.160***	-0.069**	-0.158
PTTE:age1529	0.132***	0.122	-0.028	0.152***	0.033	-0.098	0.038	0.079*	0.038	0.237***	0.127***	-0.452***	0.177***	0.027
PTTE:age5064	0.093***	0.419***	0.048	-0.123***	-0.086**	-0.210*	0.201**	-0.106**	-0.059	-0.105*	-0.096***	-0.146***	0.011	-0.111
<b>Other controls</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.109***	2.809***	2.863***	3.026***	2.412***	2.951***	2.487***	2.072***	1.410***	2.835***	2.684***	9.055***	1.146***	1.886***
Number of observations	25 449	22 817	3 799	62 434	46 520	19 051	42 703	16 557	24 866	12 838	67 237	21 572	42 964	16 478
<b>Specification (3)</b>														
TE	-0.036***	-0.142***	-0.126***	-0.196***	-0.194***	-0.076**	-0.123***	-0.140***	-0.136***	-0.171***	-0.164***	-0.131***	-0.184***	-0.260***
PTPE	-0.064**	-0.067***	-0.110***	-0.236***	-0.157***	-0.151***	-0.184***	-0.113***	-0.105***	-0.121***	-0.069***	-0.032	-0.194***	-0.232**
PTTE	-0.002	-0.041	-0.186**	-0.479***	-0.189***	-0.185***	-0.361***	-0.129***	-0.141***	-0.183***	-0.136***	-0.173***	-0.278***	-0.058
Less than high school (Less HS)	-0.130***	-0.139***	-0.094**	-0.075***	-0.131***	-0.106***	-0.127***	-0.085***	-0.132***	-0.101***	-0.102***	-0.241***	-0.125***	-0.240***
University(Univ)	0.144***	0.124***	0.139***	0.154***	0.080***	0.162***	-0.139***	0.146**	0.339***	0.213***	0.199***	0.250***	0.198***	0.346***
TE:Less HS	0.006	-0.03	0.02	0.007	0.083**	-0.092	-0.031	0.041**	-0.007	0.085	0.024**	0.225***	0.008	0.200**
TE:Univ.	0.029*	-0.012	0.014	0.017	-0.054***	-0.045	-0.037	-0.084***	0.023	-0.001	-0.093***	-0.307***	-0.039***	-0.076**
PTPE:Less HS	-0.158***	-0.103***	0.024	-0.110***	0.104***	-0.071	0.044	0.043	0.114*	-0.124***	0.029*	0.133	0.176***	0.146
PTPE:Univ.	0.019	0.108***	0.154***	0.028	0.037	-0.027	0.116***	0.081	0.089	-0.074	-0.050*	-0.151**	0.132***	-0.166
PTTE:Less HS	0.018	-0.131	-0.048	-0.131***	0.029	0.052	0.304***	0.018	0.063	-0.104	-0.033	0.259***	0.056	0.01
PTTE:Univ.	-0.050**	0.04	0.152	-0.042	-0.044	0.08	0.334***	0.071	-0.046	-0.264***	-0.194***	-0.162***	0.217***	0.028
<b>Other controls</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.110***	2.810***	2.866***	3.027***	2.418***	2.948***	2.488***	2.073***	1.407***	2.830***	2.682***	9.053***	1.147***	1.906***
Number of observations	25 449	22 817	3 799	62 434	46 520	19 051	42 703	16 557	24 866	12 838	67 237	21 572	42 964	16 478

Note: All regressions control for age groups, levels of education, marital status, the presence of children, limited health condition, dummies for region of residence, occupation and year effects. Temporary for Australia includes both casual and fixed-term work. Robust standard errors are calculated. \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% levels, respectively.

Source: European Union Statistics on Income and Living Conditions (EU-SILC, 2004-2012, cross-sectional files), British Household Panel Survey (BHPS, 1992-2009), German Socio-Economic Panel (GSOEP, 1999-2012), Household, Income and Labour Dynamics in Australia (HILDA, 2001-2012), Korean Labor & Income Panel Study (KLIPS 1999-2009).



Table 4.2. Estimates of (log) hourly wage gap between standard and non-standard workers, pooled OLS: Women

	AUS (HILDA)	AUT	BEL	DEU (GSOEP)	ESP	GBR	GBR (BHPS)	GRC	HUN	IRL	ITA	KOR (KLIPS)	POL	PRT
<b>Specification (1)</b>														
Temporary employment (TE)	-0.033***	-0.137***	-0.106***	-0.220***	-0.152***	-0.121***	-0.151***	-0.191***	-0.141***	-0.171***	-0.152***	-0.152***	-0.167***	-0.156***
Part-time permanent employment (PTPE)	0.050***	-0.024***	0.041***	-0.130***	-0.052***	-0.074***	-0.085***	-0.052***	-0.019	-0.107***	-0.040***	0.009	-0.051***	0.006
Part-time temporary employment (PTTE)	0.014**	-0.116***	-0.188***	-0.332***	-0.106***	-0.152***	-0.122***	-0.149***	-0.063***	-0.174***	-0.150***	-0.171***	-0.101***	-0.002
<b>Other controls</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.168***	2.679***	2.834***	2.907***	2.225***	2.838***	2.275***	1.980***	1.338***	2.699***	2.491***	8.897***	1.096***	1.720***
Number of observations	25 184	19 876	3 229	58 159	37 378	19 656	45 292	13 023	24 766	13 179	54 202	14 260	37 748	15 855
<b>Specification (2)</b>														
TE	-0.050***	-0.160***	-0.100***	-0.196***	-0.151***	-0.139***	-0.143***	-0.207***	-0.146***	-0.179***	-0.136***	-0.160***	-0.179***	-0.143***
PTPE	0.048***	-0.015***	0.041***	-0.115***	-0.054***	-0.085***	-0.149***	-0.074***	-0.014	-0.107***	-0.033***	-0.016	-0.025*	0.053**
PTTE	-0.008	-0.118***	-0.182***	-0.329***	-0.114***	-0.244***	-0.119***	-0.172***	-0.029	-0.143***	-0.171***	-0.171***	-0.132***	-0.037
Age1529	-0.182***	-0.221***	-0.212***	-0.200***	-0.188***	-0.213***	-0.199***	-0.262***	-0.145***	-0.302***	-0.233***	-0.133***	-0.239***	-0.186***
Age5064	-0.001	0.098***	0.167***	0.056***	0.135***	-0.015	-0.058***	0.166***	0.052***	0.096***	0.158***	-0.056***	0.079***	0.175***
TE-age1529	0.039**	0.067**	0.018	-0.078***	0.059***	0.063	-0.012	0.119***	0.031	0.061	0.029***	-0.022	0.094***	0
TE-age5064	0.029	0.009	0.007	0.042**	-0.093***	-0.018	0.009	-0.126***	-0.004	-0.095	-0.113***	0.072**	-0.061***	-0.090***
PTPE-age1529	-0.003	0.031	0.062*	-0.01	0.086***	0.044**	0.109***	0.099***	0.188***	0.097***	0.131***	0.055	0.107***	-0.004
PTPE-age5064	0.003	-0.048***	-0.060*	-0.042***	-0.037***	0.015	0.038***	0.008	-0.075***	-0.036*	-0.102***	0.124*	-0.112***	-0.112***
PTTE-age1529	0.067***	0.129***	0.250***	0.055***	0.098***	0.134***	-0.003	0.134***	-0.024	0.071	0.183***	-0.098***	0.150***	0.103**
PTTE-age5064	0.005	-0.087***	-0.340***	-0.054***	-0.080***	0.196***	-0.02	-0.068***	-0.078*	-0.126***	-0.183***	-0.014	0.002	0.002
<b>Other controls</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.168***	2.678***	2.822***	2.900***	2.222***	2.842***	2.287***	1.982***	1.337***	2.675***	2.485***	8.905***	1.094***	1.716***
Number of observations	25 184	19 876	3 229	58 159	37 378	19 656	45 292	13 023	24 766	13 179	54 202	14 260	37 748	15 855
<b>Specification (3)</b>														
TE	-0.040***	-0.101***	-0.080*	-0.205***	-0.158***	-0.065	-0.163***	-0.181***	-0.146***	-0.109***	-0.159***	-0.197***	-0.129***	-0.148***
PTPE	0.042***	-0.028***	0.03	-0.141***	-0.084***	-0.088***	-0.118***	-0.073***	-0.029*	-0.123***	-0.036***	-0.037	-0.036***	-0.005
PTTE	0.020*	-0.109***	-0.163***	-0.350***	-0.103***	-0.202***	-0.15***	-0.098***	-0.093***	-0.218***	-0.150***	-0.284***	-0.089***	-0.009
Less than high school (Less HS)	-0.052***	-0.153***	-0.120***	-0.067***	-0.120***	-0.109***	-0.107***	-0.071***	-0.092***	-0.154***	-0.127***	-0.203***	-0.063***	-0.190***
University (Univ)	0.143***	0.195***	0.176***	0.092***	0.104***	0.181***	0.159***	0.191***	0.325***	0.200***	0.155***	0.272**	0.299***	0.402***
TE-Less HS	0.014	-0.036	0.051	-0.025	0.043***	0.004	0.031	0.043**	0.054**	-0.140*	0.029***	0.151***	-0.025	0.081***
TE-Univ.	0.006	-0.101***	-0.06	-0.030*	-0.017	-0.095*	0.012	-0.054***	-0.031	-0.074	-0.003	-0.096***	-0.156***	-0.216***
PTPE-Less HS	-0.014	0.004	0.05	0.003	0.084***	0.074***	0.036***	0.049	-0.006	0.053**	0.021**	0.059	-0.001	0.039
PTPE-Univ.	0.028*	0.022	0.005	0.044***	0.002	0.012	-0.031***	0.068*	0.075**	0.01	-0.087***	0.158***	-0.055**	-0.227***
PTTE-Less HS	-0.039**	-0.016	-0.108*	0.028	0.057***	0.195*	0.019	0.011	0.061	0.094**	0.042***	0.264***	-0.029	0.013
PTTE-Univ.	0.012	-0.017	0.056	0.062***	-0.088**	0.076	0.051*	-0.156***	0.111*	0.057	-0.096***	0.165***	-0.024	-0.011
<b>Other controls</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.166***	2.661***	2.834***	2.913***	2.224***	2.842***	2.273***	1.972***	1.335***	2.700***	2.488***	8.902***	1.084***	1.717***
Number of observations	25 184	19 876	3 229	58 159	37 378	19 656	45 292	13 023	24 766	13 179	54 202	14 260	37 748	15 855

Note: All regressions control for age groups, levels of education, marital status, the presence of children, limited health condition, dummies for region of residence, occupation and year effects. Temporary for Australia includes both casual and fixed-term work. Robust standard errors are calculated. \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% levels, respectively.

Source: European Union Statistics on Income and Living Conditions (EU-SILC, 2004-2012, cross-sectional files), British Household Panel Survey (BHPS, 1992-2009), German Socio-Economic Panel (GSOEP, 1999-2012), Household, Income and Labour Dynamics in Australia (HILDA, 2001-2012), Korean Labor & Income Panel Study (KLIPS, 1999-2009).

Wage differences between standard and non-standard workers could also be driven by some unobserved individual effects like ambition or preferences. For instance, non-standard workers may receive lower wages simply because they are less productive or because they have preferences for more flexible work arrangements. Taking such effects into account tends to reduce the hourly pay gap. This analysis is undertaken for four OECD countries: Australia, Germany, Korea and the United Kingdom (Table 4.3). Overall, being a *temporary contract* worker is still associated with a wage penalty in three of the four countries, but the difference in hourly wages is more moderate: about 5% lower for men and 8% for women compared with their standard work counterparts, holding everything else equal. In Australia, there is no longer a difference in hourly wages between standard workers and temporary contract workers with similar characteristics.

Once individual fixed effects are taken into account, the *part-time* penalty is no longer present, especially for those with a permanent contract, except for German men. If anything, a wage premium is found in Australia and, to a lesser extent, for women in Korea. By contrast, part-time temporary workers still face some wage disadvantage in Germany and Korea (for women). In Australia, a substantial part-time premium (10-12% for women, 18-24% for men) was found once unobserved individual heterogeneity was taken into account: one hypothesis is that firms may have to pay more to attract part-time workers because of the high effective marginal tax rates for second-earners (Booth and Wood, 2006).

Distinct wage effects of NSW by age and skill group hold once unobserved effects are taken into account. In three panel countries where a wage penalty is observed for temporary workers, this penalty is higher for younger workers. In Germany, for instance, the hourly wages of young male (female) temporary workers are 11% (16%) lower than those of their age-similar equivalents in standard jobs. The comparable wage differences for other age groups, however, tend to be rather modest – about 5% or smaller.

With respect to those working in permanent jobs, there is no obvious wage penalty for part-time women in all age or skill groups, while for men the observed small or insignificant wage gap masks two contrasting effects across the population. In Korea, for instance, a wage penalty (13%) is found for young male workers – compared with standard full-time workers – whereas a wage premium (18%) is estimated for older workers. As for individuals with a temporary contract, the wage penalty also tends to be much higher among the young for both men and women. In the United Kingdom, on the contrary, older part-time workers (men) are at a higher risk of receiving a wage penalty, as they earn about 10% less than their age-similar counterparts in standard jobs. Moreover, in Australia wage premiums are found for all part-time workers, regardless of age or skill level.

In sum, four main messages can be drawn from the findings of this section. First, in most countries being a full-time temporary worker is associated with a wage penalty. This result is robust in both cross-sectional and panel analyses regardless of whether or not controlling for unobserved individual heterogeneity. Second, part-timers – in particular those with a temporary contract – also tend to have lower hourly wages than their regular full-time equivalents. However, part-time wage penalties diminish or even disappear when unobserved fixed effects are taken into account, suggesting that unobservable characteristics, such as individual preferences or ability, play an influential role in determining the wage gap for part-timers. Third, the extent of the wage penalty is not homogeneous across all non-standard workers. In many countries, the penalty primarily affects young workers, especially those with a temporary employment contract. Finally, there is a considerable cross-national variation in wage penalties associated with non-standard work. In general, full-time temporary contract workers tend to fare worse in hourly wages in Austria, while having a part-time job is harshly penalised in Germany but rewarded in Australia.

Table 4.3. Fixed effects estimate of wage gaps

	Men				Women			
	AUS (HILDA)	DEU (GSOEP)	KOR (KLIPS)	GBR (BHPS)	AUS (HILDA)	DEU (GSOEP)	KOR (KLIPS)	GBR (BHPS)
<b>Specification (1)</b>								
Temporary employment (TE)	-0.001	-0.063***	-0.083***	-0.068***	0.008	-0.092***	-0.101***	-0.082***
Part-time permanent employment (PTPE)	0.172***	-0.047**	-0.008	0.028	0.125***	-0.009	0.060*	-0.001
Part-time temporary employment (PTTE)	0.172***	-0.242***	-0.012	0.004	0.139***	-0.048***	-0.074***	-0.011
<b>Other controls</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	2.872***	2.678***	8.852***	2.053***	2.775***	2.552***	8.487***	1.826***
<b>Specification (2)</b>								
TE	0.007	-0.052***	-0.046**	-0.029	0.004	-0.051***	-0.079***	-0.035*
PTPE	0.178***	-0.003	0.013	0.112***	0.124***	-0.003	0.053	-0.014
PTTE	0.174***	-0.156***	0.136***	0.047	0.145***	-0.036**	-0.056*	0.015
Age1529	-0.001	-0.059***	-0.073***	-0.092***	-0.011	-0.055***	-0.062***	-0.056***
Age5064	-0.053***	-0.025***	-0.039**	-0.094***	-0.037***	-0.014*	-0.069***	-0.079***
TE-age1529	-0.024	-0.067***	-0.090***	-0.074***	-0.003	-0.130***	-0.078**	-0.102***
TE-age5064	0.005	0.016	-0.038	-0.019	0.029	0.017	0.022	-0.027
PTPE-age1529	-0.023	-0.092*	-0.157*	-0.063	-0.011	0.002	0.027	0.043***
PTPE-age5064	0.019	-0.078*	0.152	-0.218***	0.02	-0.01	0.037	0.035**
PTTE-age1529	-0.02	-0.091	-0.296***	-0.047	-0.02	-0.064**	-0.121**	-0.069
PTTE-age5064	0.038	-0.235***	-0.212**	-0.11	0.004	0.007	0.133**	0.002
<b>Other controls</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	2.872***	2.677***	8.842***	2.051***	2.778***	2.538***	8.487***	1.833***
<b>Specification (3)</b>								
TE	0.008	-0.067***	-0.077***	-0.064***	-0.001	-0.071***	-0.148***	-0.118***
PTPE	0.155***	-0.053*	-0.052	-0.028	0.127***	-0.018*	0.031	-0.013
PTTE	0.183***	-0.229***	-0.044	-0.137**	0.119***	-0.052***	-0.172***	-0.043
Less than high school (Less HS)	-0.105***	-0.012	-0.077	-0.001	-0.050*	-0.028	-0.037	0.004
University (Univ.)	0.081***	0.111***	0.092**	0.055***	0.106***	0.108***	0.04	0.057***
TE-Less HS	-0.019	0.031	0.058	-0.04	0.022	-0.017	0.147***	0.064
TE-Univ.	-0.015	0.004	-0.136***	8	0.008	-0.055***	-0.019	0.049*
PTPE-Less HS	0.038	-0.07	0.159	0.08	-0.019	0.056**	0.016	0.055***
PTPE-Univ.	0.024	0.046	0.079	0.074	0.004	0.013	0.132	0.001
PTTE-Less HS	-0.005	-0.082	0.121	0.187**	0.003	0.072**	0.219***	0.063
PTTE-Univ.	-0.036	-0.02	0.028	0.215***	0.055**	-0.023	0.171**	0.063
<b>Other controls</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional <sup>1</sup>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	2.869***	2.676***	8.852***	2.055***	2.782***	2.551***	8.503***	1.83***
Number of observations	25 449	62 434	26 952	42 703	25 184	58 159	14 260	45 292
Numbers of groups	5 015	12 340	5 557	5 889	5 156	12 061	4 382	6 294

Note: All regressions control for age groups, level of education, marital status, the presence of children, limited health condition, dummies for region of residence, occupation and year effects.

1. Additional controls in national panels include dummies for industry, firm size, and job tenure (for Australia and Germany). Temporary for Australia includes both casual and fixed-term work. Robust standard errors are calculated. \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% levels, respectively.

Source: British Household Panel Survey (BHPS, 1992-2009), German Socio-Economic Panel (GSOEP, 1999-2012), Household, Income and Labour Dynamics in Australia (HILDA, 2001-2012), Korean Labor & Income Panel Study (KLIPS, 1999-2009).

StatLink  <http://dx.doi.org/10.1787/888933208974>

Having identified a wage penalty for temporary workers, it is important to investigate whether they have an equal or better chance of upward earnings mobility compared with workers in standard employment. If temporary jobs are a form of probation, a low wage during the probationary period will be followed by higher future wages and there should be little loss in terms of long-term wages (Booth et al., 2002). A conversion from a temporary to a permanent job (with the same employer) should thus be associated with upward earnings mobility. Also, because temporary workers are more likely to switch jobs voluntarily given their short-term contracts, they may be more likely to take advantage of higher-paying job opportunities than less mobile permanent workers (Amuedo-Dorantes and Serrano-Padial, 2007). Table 4.4 looks at contract and earnings mobility for temporary workers.<sup>13</sup>

**Table 4.4. Change of employment contract and earnings mobility, average over panel periods**

Australia (HILDA)					Austria				
Transition	Downward	Stay	Upward	Total	Transition	Downward	Stay	Upward	Total
SW-SW	15.6	66.8	17.6	100	SW-SW	27.0	54.4	18.6	100
SW-TE	20.6	55.4	24.1	100	SW-TE	28.3	43.3	28.3	100
TE-SW	17.8	57.5	24.7	100	TE-SW	27.7	45.5	26.8	100
TE-TE	18.2	61.2	20.7	100	TE-TE	28.4	44.4	27.2	100
Belgium					Czech Republic				
Transition	Downward	Stay	Upward	Total	Transition	Downward	Stay	Upward	Total
SW-SW	16.8	64.6	18.6	100	SW-SW	19.2	63.6	17.3	100
SW-TE	24.8	47.5	27.7	100	SW-TE	21.3	54.2	24.5	100
TE-SW	14.6	54.2	31.2	100	TE-SW	18.9	58.5	22.5	100
TE-TE	17.3	58.9	23.9	100	TE-TE	21.2	58.5	20.3	100
Estonia					France				
Transition	Downward	Stay	Upward	Total	Transition	Downward	Stay	Upward	Total
SW-SW	22.7	59.0	18.3	100	SW-SW	9.4	79.2	11.5	100
SW-TE	35.6	36.6	27.7	100	SW-TE	16.4	60.6	23.0	100
TE-SW	23.5	43.5	33.1	100	TE-SW	13.5	55.0	31.5	100
TE-TE	41.2	45.6	13.2	100	TE-TE	13.9	66.2	19.9	100
Germany (GSOEP)					Greece				
Transition	Downward	Stay	Upward	Total	Transition	Downward	Stay	Upward	Total
SW-SW	11.3	73.9	14.8	100	SW-SW	11.8	74.6	13.6	100
SW-TE	15.1	67.8	17.1	100	SW-TE	14.8	66.6	18.7	100
TE-SW	11.2	68.7	20.1	100	TE-SW	16.2	66.7	17.2	100
TE-TE	12.2	69.8	18.1	100	TE-TE	15.5	67.2	17.3	100
Hungary					Italy				
Transition	Downward	Stay	Upward	Total	Transition	Downward	Stay	Upward	Total
SW-SW	19.1	64.3	16.6	100	SW-SW	13.1	71.8	15.1	100
SW-TE	23.0	55.6	21.4	100	SW-TE	20.7	56.1	23.3	100
TE-SW	21.4	58.5	20.1	100	TE-SW	14.6	60.3	25.1	100
TE-TE	21.1	53.1	25.7	100	TE-TE	16.9	57.1	25.9	100
Korea (KLIPS)					Luxembourg				
Transition	Downward	Stay	Upward	Total	Transition	Downward	Stay	Upward	Total
SW-SW	17.2	63.0	19.8	100	SW-SW	11.4	75.8	12.9	100
SW-TE	35.1	45.5	19.5	100	SW-TE	24.1	52.1	23.8	100
TE-SW	14.5	48.3	37.3	100	TE-SW	13.1	63.1	23.8	100
TE-TE	21.7	57.2	21.1	100	TE-TE	16.9	63.6	19.5	100
Poland					Portugal				
Transition	Downward	Stay	Upward	Total	Transition	Downward	Stay	Upward	Total
SW-SW	16.7	67.1	16.2	100	SW-SW	13.8	72.6	13.6	100
SW-TE	24.4	54.2	21.4	100	SW-TE	18.1	57.1	24.8	100
TE-SW	20.1	55.15	24.7	100	TE-SW	13.8	66.2	20.0	100
TE-TE	20.0	56.4	23.7	100	TE-TE	15.4	61.9	22.8	100
Spain					Slovak Republic				
Transition	Downward	Stay	Upward	Total	Transition	Downward	Stay	Upward	Total
SW-SW	17.3	67.4	15.3	100	SW-SW	20.6	59.7	19.7	100
SW-TE	23.7	49.7	26.6	100	SW-TE	23.3	50.5	26.2	100
TE-SW	23.1	54.3	22.6	100	TE-SW	22.9	52.4	24.8	100
TE-TE	24.6	51.8	23.6	100	TE-TE	23.8	54.0	22.3	100
United Kingdom (BHPS)									
Transition	Downward	Stay	Upward	Total					
SW-SW	12.0	72.1	16.0	100					
SW-TE	23.6	54.6	21.8	100					
TE-SW	19.4	54.6	26.2	100					
TE-TE	16.0	60.4	23.6	100					

*Note:* SW: standard full-time permanent employment; TE: full-time temporary contract. A worker is said to have upward mobility if he/she moved up at least one earnings quintile from year  $t-1$  to  $t$ ; similarly downward mobility refers to a move to a lower quintile. Stay refers to workers who remained in the same earnings category. Temporary for Australia includes both casual and fixed-term work.

*Source:* British Household Panel Survey (BHPS, 1992-2009) for the United Kingdom, German Socio-Economic Panel (GSOEP, 1999-2012) for Germany, European Union Statistics on Income and Living Conditions (EU-SILC, 2004-2012) for other European countries, Household, Income and Labour Dynamics in Australia (HILDA, 2001-2012) for Australia, Korean Labor & Income Panel Study (KLIPS, 1999-2009) for Korea.

On average, about one-third to one-half of full-time employees made a transition into another earnings category within one year (Table 4.4). A great majority of workers, however, remained in the same earnings quintile, regardless of changes in the type of contract. This is confirmed by evidence from Australia and several European countries that shows, in particular, strong state dependence among low-wage workers (Buddelmeyer et al., 2010; Cappellari and Jenkins, 2008; Mosthaf, 2011; Stewart, 2007, Uhlendorff, 2006). In general, upward earnings mobility is higher for those experiencing a change from temporary to permanent work (TE-SW). In Belgium, Estonia, France and Korea, for instance, about one in three workers who moved from TE to SW increased their earnings. Because of data limitations, it is not possible to distinguish whether or not a change of contract also involves a change of employer. It is therefore difficult to infer whether these upgrades in earnings reflect workers' gains in productivity, as people initially on temporary contracts who display high ability are later offered permanent positions at a firm, or whether this is due to a (more intensive) job search in the pursuit of a better career match. Similarly, switching from standard employment to a temporary contract (SW-TE) often results in earnings losses (especially in Estonia and Korea).

Although entering a standard job often leads to a wage rise, there are exceptions. In Hungary, Spain and the Slovak Republic, for instance, nearly one in two workers changed earnings category when moving from a temporary contract to standard employment; about one-half of them experienced upward mobility while the other half ended up with lower earnings.

Finally, in several countries (Austria, the Czech Republic and Korea) temporary workers who remained in the same contract type tended to be relatively mobile in earnings in both directions (upward and downward), suggesting greater earnings instability among such workers. A fall in earnings is more common in Estonia where more than 41% of persistent temporary workers experienced a fall in earnings, as shown by moving to a lower quintile.

### *Are non-standard jobs stepping stones?*

The analysis has shown that significant wage penalties are associated with temporary work, and in some countries with part-time jobs for men, compared with standard permanent employment, even when controlling for the observed and unobserved characteristics of workers. A related concern is whether this wage differential has a long-lasting impact on wages over the career, or whether temporary workers can catch up with their counterparts who started permanent jobs earlier. Spells of low-paid jobs may lead to depreciation in human capital, which may compromise the possibility to find better-paid jobs and thus generate persistence in low-paid employment. On the other hand, non-employment may lead to a larger loss of human capital and often has a scarring effect on subsequent employment; getting any job, even a low-paid, less stable job or one involving limited hours, is therefore often put forward as a way to improve future employment and wage prospects. In this view, non-standard jobs may offer unemployed individuals a transition to more stable jobs. This sub-section investigates whether such “stepping stone” effects exist in the short run.

Past findings on whether non-standard forms of employment improve or hinder labour market prospects vary across countries and the type of non-standard employment considered. Part of the literature suggests that *temporary jobs* are often stepping stones to permanent employment (e.g. Gagliarducci, 2005; Ichino et al., 2008). However, findings differ with respect to the type of temporary contract and other workers characteristics. For instance, in the United Kingdom, a large fraction of people on fixed-term contracts mainly move into permanent jobs while transition rates are much lower for workers on seasonal or casual jobs, especially for part-time workers (Booth et al., 2002). Weaker



labour market prospects for temporary and contingency workers have also been found in the United States (Autor and Houseman, 2005), Spain (Amuedo-Dorantes, 2000; Esteban-Prete et al., 2009) and Japan (Yu, 2011).

### Box 4.3. Estimating the probability of labour market transitions

Because it is difficult to differentiate the effects of holding a given job (i.e. whether holding a non-standard job leads to human capital depreciation) from the characteristics and motivations that lead individuals to choose such jobs (i.e. whether individuals choose non-standard jobs), it is challenging empirically to test the “stepping-stone” hypothesis.

Testing the “stepping stone” hypothesis requires that the causal effect of holding a non-standard job (state dependency\*) be isolated from the impact of confounding factors, such as differences in educational levels and motivations between standard and non-standard workers (unobserved heterogeneity). The analysis in this sub-section is performed for 17 OECD countries.

To analyse transitions between different states and address the issue of state dependence, a dynamic probit model is used. This model estimates the conditional probability of being in standard work at  $t$ , conditional on previous employment status ( $L_{it-1}$ ) and demographic characteristics ( $X_{it}$ ), while also controlling for unobservable individual heterogeneity ( $\delta_i$ ). The general form is:

$$\Pr(L_{it} = 1 | L_{it-1}, X_{it}, \delta_i) = \Phi(L'_{it-1}\phi + X'_{it}\beta + \delta_i). \quad (1)$$

In estimating the dynamic model, the problem of initial conditions needs to be taken into account: an individual’s labour market status at the start of the panel is not randomly distributed and will be influenced by unobservable individual heterogeneity ( $\delta_i$ ). Failing to take into account the initial condition problem will lead to overstating the level of state dependence. Indeed, controlling for initial labour market status, demographic characteristics and household income leads to large drops in the coefficients of the lagged labour market status. This indicates that not controlling for initial conditions would seriously bias the estimates. Following Wooldridge (2002), the distribution of the individual effects is parameterised as a linear function of the initial employment status at the first wave of the panel and of the time means of the regressors, assuming that this has a conditional normal distribution:

$$\delta_i = c_0 + L'_{i0}\rho + \bar{X}'_i v + \xi_i. \quad (2)$$

Substituting (2) into (1) yields:

$$\Pr(L_{it} = 1 | L_{it-1}, X_{it}, \delta_i) = \Phi(L'_{it-1}\phi + X'_{it}\beta + c_0 + L'_{i0}\rho + \bar{X}'_i v + \xi_i). \quad (3)$$

For the probability of being in standard work, past labour market status includes dummies for lagged standard work, lagged NSW (temporary, part-time and self-employed) and lagged inactivity. The coefficients for NSW at time  $t-1$  should be interpreted as the difference in the likelihood of being in standard work at wave  $t$  as compared with being unemployed at  $t-1$ . In addition to the previous labour market state, the estimation controls for individual characteristics ( $X$ ) and for initial conditions ( $L'_{i0}$  and  $\bar{X}$ ). The former include age, education, marital status, an indicator for self-reported health, household incomes and geographic location (as well as year effects).

Alternatively, a single equation can be estimated (a dynamics multinomial logit) to capture *all* labour market transitions simultaneously (e.g. Buddelmeyer and Wooden, 2011). This would allow individual heterogeneity ( $\delta_i$ ) to be correlated across the different labour market choices. For the sake of simplicity, this study assumes independent choices in labour market status and estimates equation (3) in a univariate framework. That is, the probability of transition into standard work and transition into non-employment is estimated by two separate probit models.

\* State dependency arises when individuals who have experienced an event in the past are more likely to experience the event in the future than are individuals with identical characteristics who have not experienced the event (Heckman, 1981).

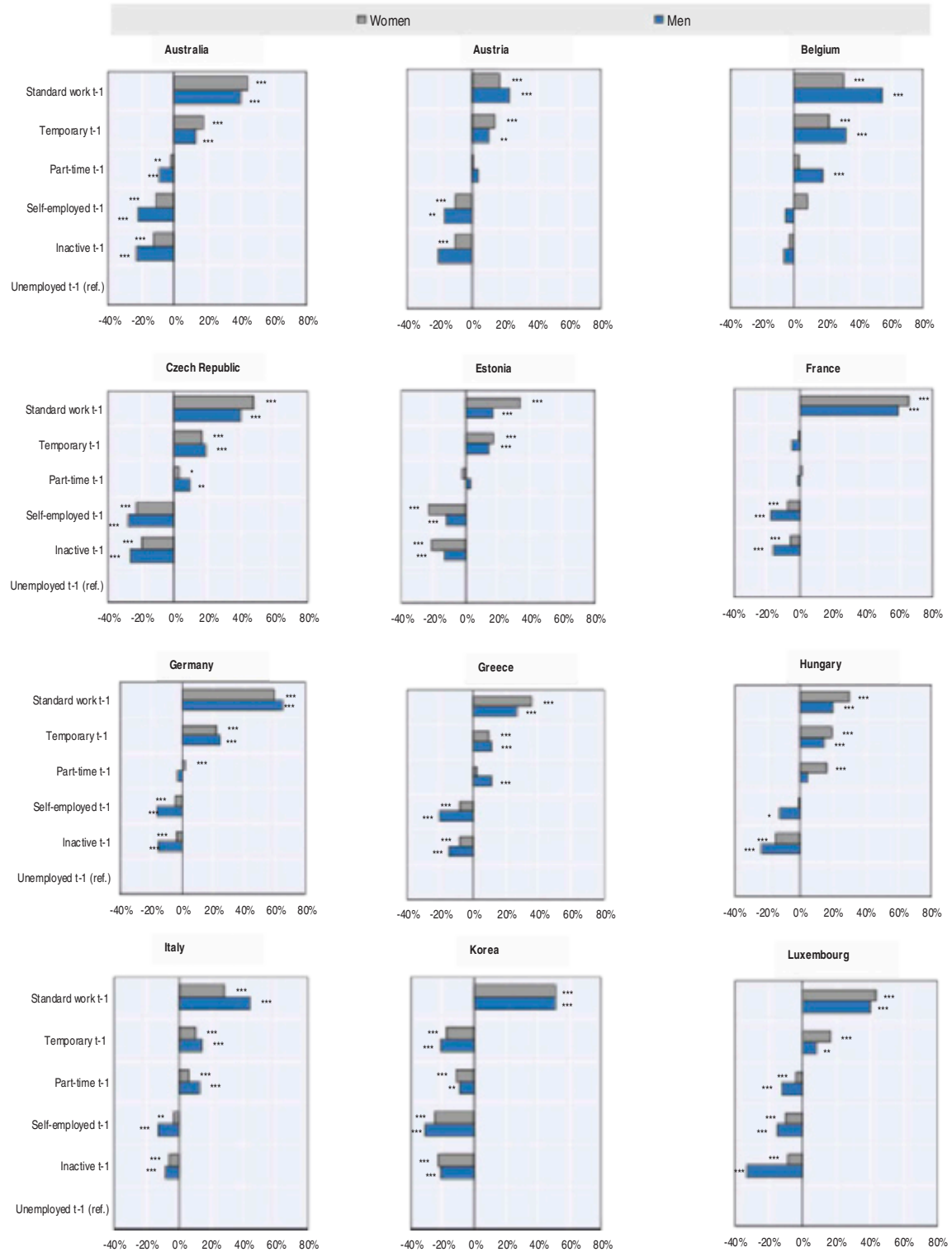
The analysis undertaken for 17 OECD countries supports the stepping-stone hypothesis in most cases, at least in the short-run – but only for some types of non-standard jobs, in particular *temporary jobs*. The estimations presented in Figure 4.11 capture the marginal effects of the labour market and job status in the previous year on the probability of having a standard job. The reference group is that of the unemployed, i.e. the numbers for standard work, temporary, part-time, self-employed and inactive should be interpreted as how much more or less likely such individuals are to move to a standard job in the next year compared with unemployed people with similar characteristics.

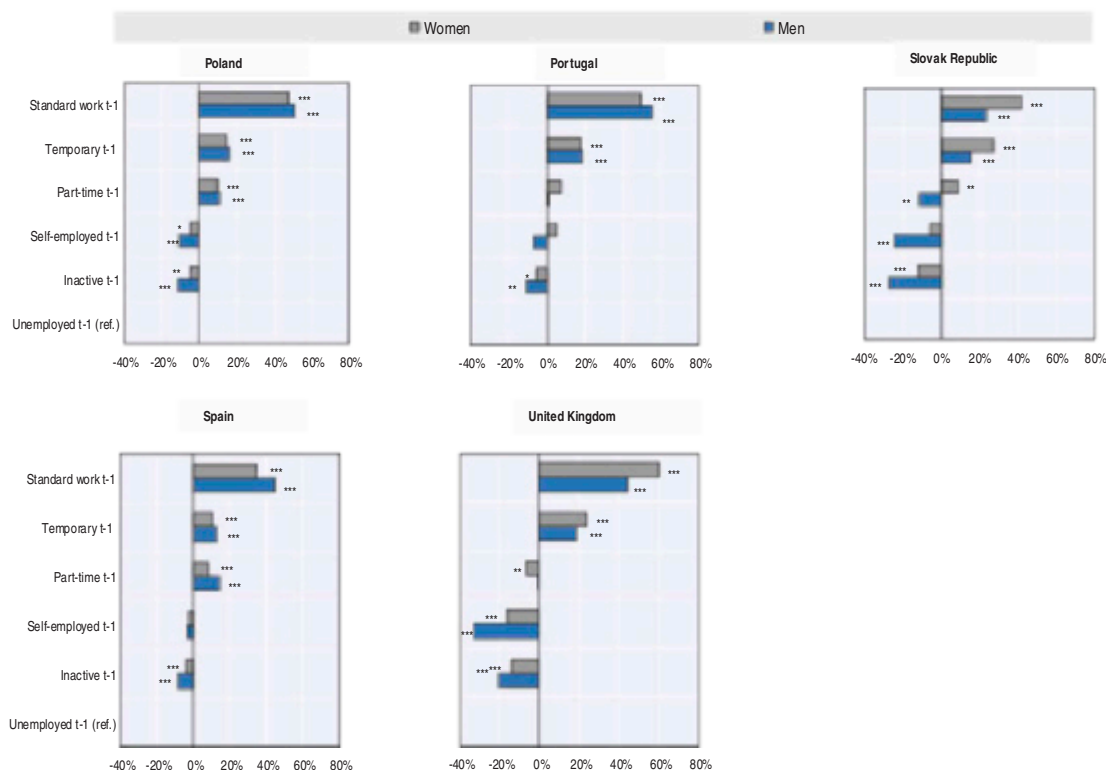
In most countries, full-time temporary workers have a higher probability of entering into standard employment than the unemployed. In Belgium, for instance, the likelihood of having a standard job in the current period for men is 32 percentage points. The stepping-stone effect for temporary jobs is also noticeable in the Czech Republic, Germany, Portugal and the United Kingdom and in the Slovak Republic for women. France is an exception where female workers on temporary jobs have the same likelihood as the unemployed to obtain a standard job, and in the case of men are slightly less likely. Korea also stands out since both men and women in temporary employment have lower probabilities of moving into standard employment than the unemployed.<sup>14</sup> Other research for OECD countries shows however that transition rates remain low when considering a longer time span and that inequalities are likely to persist: less than 50% of workers who were on temporary contracts in a given year were employed with full-time permanent contracts three years later (OECD, 2014). In many countries, prime age and older workers in temporary jobs have a better chance of using such jobs as “stepping stones” than younger workers (Chen et al., 2015).

On the other hand, having a *part-time job or self-employed work* does not necessarily improve the chances of getting a permanent full-time job compared to being unemployed. An observable increased probability for part-timers compared with the unemployed is found only in about one-third of the countries studied, noticeably for men in Belgium and Spain, and for women in Hungary. In several countries part-time work reduces the likelihood of finding a standard job compared to being unemployed: in Australia, Korea and Luxembourg for both men and women (in Germany and the Slovak Republic for men, and in the United Kingdom for women). This confirms the findings from other studies showing that part-time jobs are used as stepping stones in very few cases and that retention in part-time employment is high: about two-thirds of part-timers stay in part-time employment for more than one year (OECD, 2010).

With regard to another dimension of job quality,<sup>15</sup> job security, non-standard workers are also worse off than full-time permanent employees. Job security, proxied by the probability of job loss within the next six months, is markedly different across types of jobs: non-standard workers are more than twice as likely as standard workers to lose their job within six months (Chen et al., 2015). Previous temporary employment increases the likelihood of unemployment in almost every country, especially for men, compared with being in standard work (Annex 4.A3, Figure 4.A3.1). On the other hand, part-time work or self-employment increases the risk of dropping out of the labour market. Indeed, working part-time is associated with a higher risk of inactivity compared with standard workers in about three-quarters of countries, on average by a margin of 4.5 percentage points. Moreover, in some countries, both temporary workers and part-timers face a double income and security penalty that can increase their risk of poverty: not only do their contracts tend to be more precarious, but they also have less coverage by unemployment insurance systems, since shorter periods of work (and shorter working hours for part-timers) make them less likely to meet the eligibility conditions for these insurance schemes (OECD, 2010; OECD, 2014).

Figure 4.11. Influence of previous labour market status on the probability of having a standard employment



**Figure 4.11. Influence of previous labour market status on the probability of having a standard employment (cont.)****Note:**

Marginal effects from lagged employment status on the probability of standard employment based on a random-effects dynamic probit, controlling for initial conditions. \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% levels, respectively.

Samples include persons present in at least three consecutive waves and aged 15-64, and excluding retired individuals. Temporary for Australia includes both casual and fixed-term work.

All regressions include regional dummies, year dummies, age groups, a dummy for the presence of children, a dummy for whether the individual suffers from a health problem, a dummy for whether the individual is married, dummies for low-skilled and high-skilled (corresponding to ISCED 0-2 and ISCED 5-6) and equivalised household net income. To control for initial conditions, initial labour market status dummies are included as well as averages for time-varying regressors based on Wooldridge (2002). To test whether including additional controls alter the transition probabilities, separate regressions were estimated for countries for which additional variables are available (e.g. including job tenure, total time in employment since full-time education and its square, and shares of the foreign-born for Australia; an indicator of ethnicity for the United Kingdom; and an indicator of foreign-born and work experience for Germany). The results are very similar to the baseline specifications.

*Source:* British Household Panel Survey (BHPS, 2004-2009) for the United Kingdom, German Socio-Economic Panel (GSOEP, 2004-2012) for Germany, European Union Statistics on Income and Living Conditions (EU-SILC, 2004-2012) for other European countries, Household, Income and Labour Dynamics in Australia (HILDA, 2004-2012) for Australia, Korean Labor & Income Panel Study (KLIPS, 2004-2009) for Korea.

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In terms of the work environment, differences between standard and non-standard workers depend largely on the type of contract, except with respect to training, which tends to be lower for all non-standard workers. Full-time temporary and part-time workers are 20% and 40% less likely respectively to receive training, while training for part-time permanent workers is marginally lower than for standard workers (Chen et al., 2015). From the perspective of financial efficiency, if jobs are temporary or workers are loosely attached to the labour market, it can be inefficient for workers to invest in specific human capital or for firms to provide firm-specific training. Across European countries, temporary workers in 40% of the countries report a slightly higher incidence of working on tight deadlines (Chen et al., 2015). Temporary workers report a higher incidence of job strain, which tends to be driven both by higher job demands and lower job resources: they report higher exposure to both physical health risk factors at work and workplace intimidation, while enjoying less autonomy, fewer learning opportunities and less support from their colleagues (OECD, 2014). However, the incidence of job strain tends to be lower among part-time contracts as they have lower job demands.

### *How does non-standard work affect the overall distribution of earnings?*

The previous sub-sections have discussed the wage penalty for non-standard workers at the median, but the evidence of job polarisation has shown that NSW appears to have increased both at the bottom and at the top of the job distribution. This section looks at the earnings gap across the distribution to ascertain whether wage differentials exist and are similar at different parts of the distribution and then make the link with wage inequality. The following analysis investigates whether an increase in non-standard work implies an increase in workers in the lowest earnings segments, thereby making earnings more unequal.

The impact of NSW on the overall wage distribution is likely to depend on the concentration of non-standard workers in particular parts of the wage distribution. Figure 4.12, Panel A confirms that non-standard workers (excluding the self-employed) are more likely to be found in the lower part of the earnings distribution, particularly in the lowest three deciles.<sup>16</sup> More than half of employees in the lowest decile of earnings are non-standard workers, and this figure reaches more than two-thirds in Germany and Canada. In contrast, the share of NSW is below 15% in the top decile. The presence of non-standard workers at the top of the distribution is particularly low in Hungary (5%), Spain and Korea (8-9%).

In almost all countries, there is an earnings gap between standard and non-standard workers that is significantly larger at the bottom of the wage profile: the so-called sticky-floor effect. Using the unconditional quantile regression models (see Box 4.4), Figure 4.12, Panel B shows how the wage penalty associated with a marginal increase in NSW varies for the different points of the wage distribution. On average, a rise in the share of NSW leads to lower log hourly wages of around 18% to 24% for the lowest 40% of the distribution. The earnings gap for non-standard workers decreases for each decile between the middle of the distribution and the top, virtually disappearing for the top 10%. The shape and magnitude of the gap are in line with previous work on temporary contracts (Bosio, 2014; Mertens et al., 2007; Santangelo, 2011). As a result, an increase in the share of NSW should contribute to widening overall wage inequality, since it increases inequality at the bottom end of the distribution and has a neutral effect on wage inequality at the top end.



#### **Box 4.4. Assessing the impact of non-standard work along the earnings distribution**

For investigating the impact of non-standard work on different deciles of the earnings distribution, and the resultant impact on inequality, a methodology using unconditional quantile regressions (UQR) is used, which was introduced by Firpo et al. (2007) and further developed in Fortin et al. (2010).

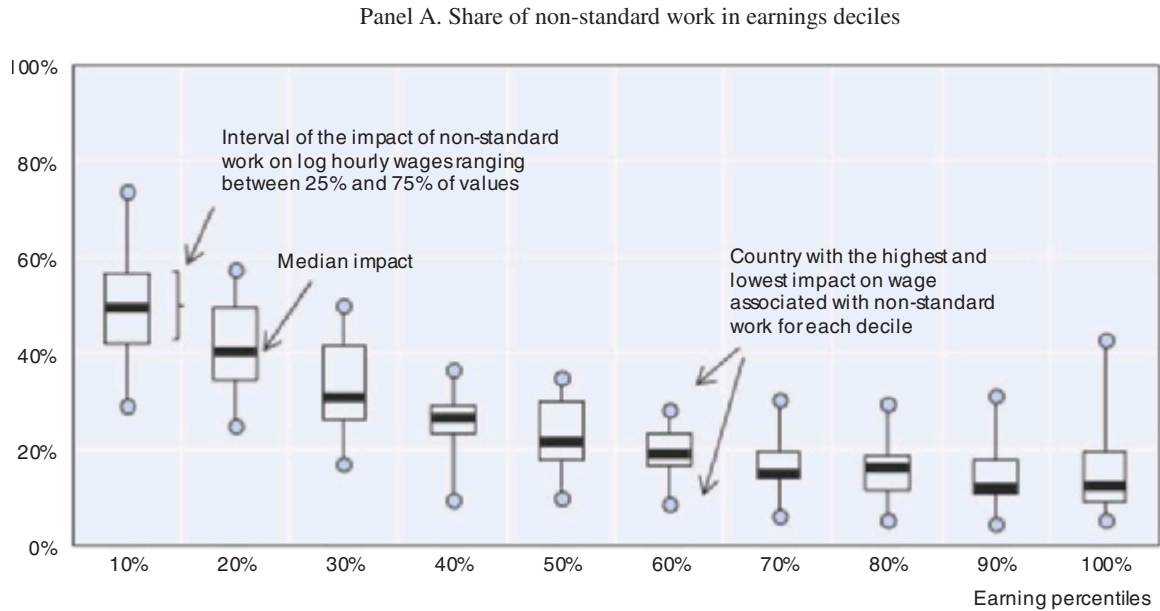
This method is based on regressions in which the dependent variable is a transformation, the Recentered Influence Function (RIF) of the outcome variable, i.e. the unconditional quantile. Each quantile of earnings is regressed against NSW, age (and its square), gender, education, industry and occupation, as well as regional controls.

While conditional quantile regression allows the estimated return to a given characteristic to vary according to the conditional quantile of an individual, which can be thought of as the individual's position in a virtual distribution in which everybody else has the same observed characteristics, unconditional quantile regressions allow estimating the impact of a small locational shift in the distribution of a variable of interest on the entire (unconditional) distribution of the dependent variable.

The coefficient on the dummy of NSW from an unconditional quantile regression (UQR) gives an estimation of the impact of NSW on inequality by showing whether the effect of NSW on wages is different at different points of the distribution. One caveat of the UQR, however, is that it does not allow for a control of endogeneity in the selection into NSW.

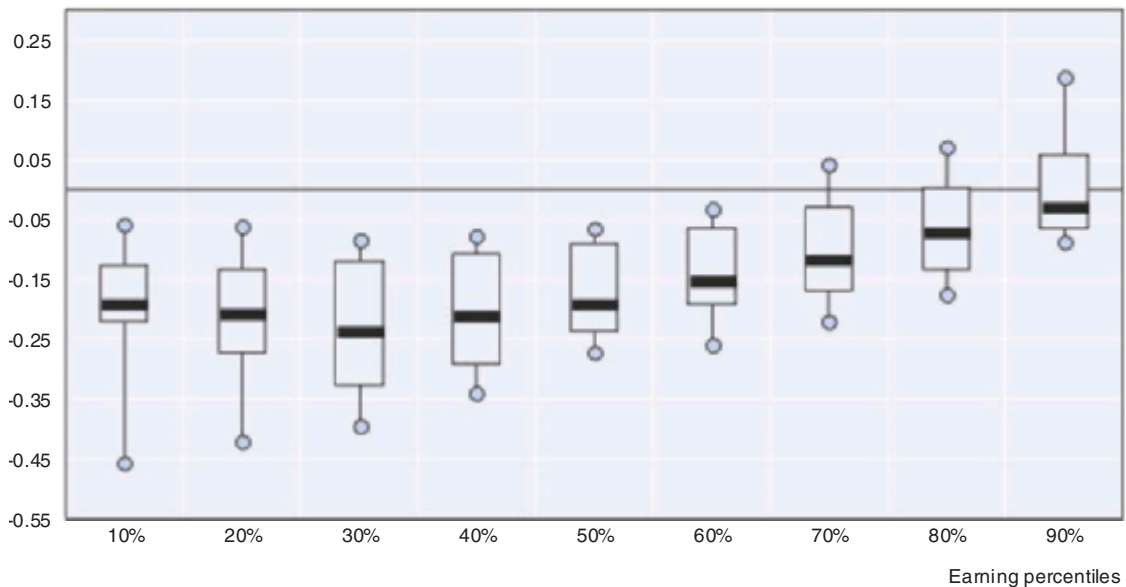
Although there is a higher earnings gap for NSW at the bottom, different country profiles emerge (see Annex 4.A3, Figure 4.A3.2). In one set of countries including Australia, Greece and Luxembourg, NSW results in lower wages below the middle of the distribution, and this wage penalty disappears in the upper deciles, turning into a wage premium in the top decile. In other countries, including Germany, Hungary, Italy and Spain, NSW tends to decrease wages in almost all deciles of the distribution, but the difference decreases monotonically with the upper deciles. In Canada, Ireland and the United Kingdom, the earnings gap is more pronounced in the bottom 20% to 40% of the distribution rather than the bottom 10%. Portugal is an exception in that the wage penalty is fairly small at the bottom of the distribution and more substantial in the upper middle part.

In general, the earnings gap is more marked in Germany, with NSW lowering log hourly wages by more than 40% in the lowest decile. On the other hand, in Australia the earnings gap at the bottom of the distribution is smaller, while there is a significant wage premium of 20% to NSW at the top.

**Figure 4.12. Non-standard work and earnings by decile of hourly wages, OECD-14 average**

Panel B. Effect of non-standard work on wages by decile

Log hourly wage change



*Note:* The box for each quantile represents the interval of the impact of non-standard work on log hourly wages ranging between 25% and 75% of values, with the black line representing the median impact. The circles represent the country with the highest and lowest impact on wage associated with NSW for each decile. OECD-14 refer to Australia, Austria, Canada, Germany, Greece, Hungary, Ireland, Italy, Korea, Luxembourg, Poland, Portugal, Spain, United Kingdom.

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009), Canada Labour Force Survey (LFS, 2013).

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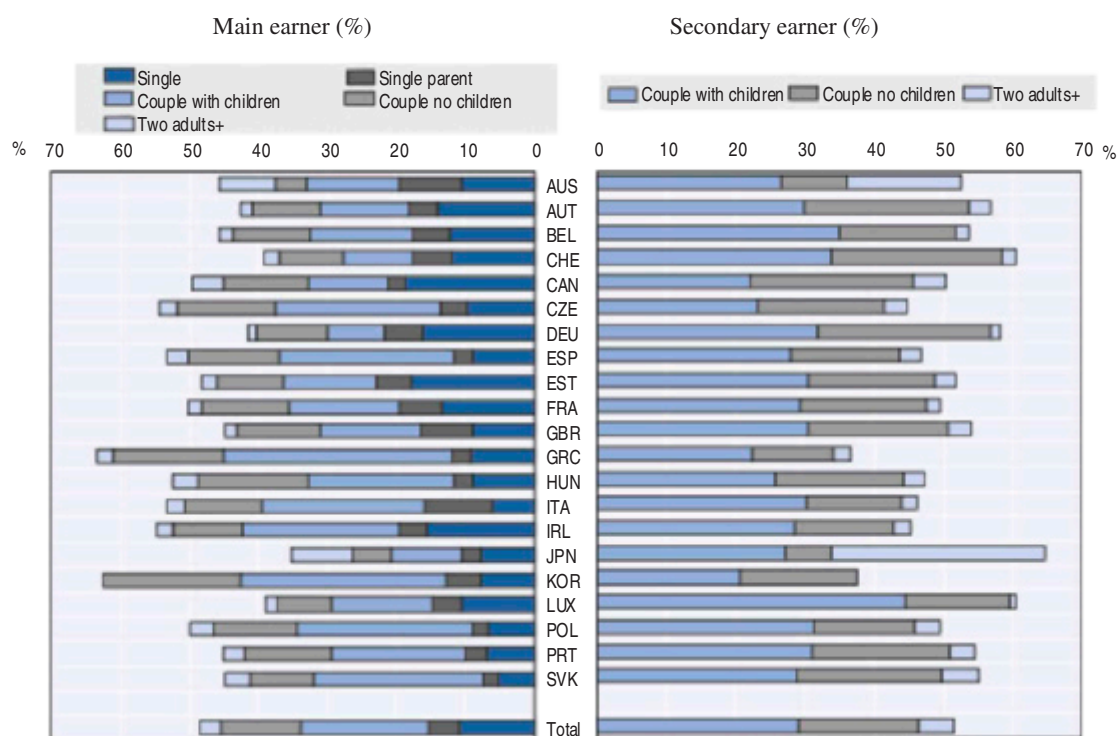
## 4.5. The impact of non-standard work on household income and poverty

This section investigates how non-standard work contributes to *household* earnings and income inequality. This aspect has remained unexplored in the literature. Previous work has attempted to make a link between the polarisation of jobs and earnings by arguing that part of rising household earnings inequality is related to the polarisation between jobless and job-rich households (see Gregg and Wadsworth, 1996). However, this approach fails to account for the large part of inequality that is explained by inequality *within* working households. Part-time workers and temporary workers tend to have lower hourly wages and/or annual earnings (see Section 4.4 above), while the earnings of self-employed individuals are more dispersed, both at the top and at the bottom of the distribution. In addition, household earnings and income are also influenced by working hours and months worked during the years for the different workers in the household. How this translates into household earnings depends on the household composition of workers. Are non-standard workers the main or even the only earners, or are they typically the “secondary” earners within a household? If temporary or part-time workers earn less but supplement the earnings of a main earner with a standard job, an increased share of them will lead to higher household earnings in households where previously there was only one earner and smooth the overall distribution. On the other hand, if non-standard workers are concentrated mainly in households where all earners are in non-standard jobs, the impact may be different and can increase inequality.

### *Are low-wage non-standard workers in low-income households?*

Do non-standard workers change their relative distributional position when total household incomes, rather than individual earnings, are considered? In particular, what proportion of non-standard workers in the bottom part of the individual earnings distribution remain in the bottom when all other income sources are pooled within the households?

While the share of non-standard workers is sizeable in many countries, their contribution to household earnings can be very different. The extent to which non-standard workers are main or secondary earners in a household with multiple workers has distributional implications. Figure 4.13 presents the share of non-standard workers as the main or secondary income earner, with a breakdown by household type (number of adults and children).<sup>17</sup> On average across the countries, just under 50% of all non-standard workers are the main earners (right panel). The shares are higher for Korea and Greece (over 62%), but lower for Japan, Luxembourg and Switzerland (35%, 38% and 39%). It is striking that almost half of these workers (47%) have dependent children. Given that some non-standard workers, in particular temporary contract workers, tend to earn less and suffer greater earnings instability than standard workers, individuals living with such non-standard/main earners are at a greater risk of falling into the bottom part of the earnings distribution.

**Figure 4.13. Share of non-standard workers as the main/secondary income earner in a household**

*Note:* “Children” refers to persons aged 17 or less or young adults (18-24) who were economically inactive and living with at least one parent. Data for Japan refer to respondent and spouses aged 20-64 and there is no information on earnings for other household members.

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009), Survey of Labour and Income Dynamics (SLID, 2010) for Canada, Japan Household Panel Survey (JHPS, 2012).

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In addition to the earnings of other household members, non-labour incomes, including social transfers, need to be considered. Pooling data over 15 EU countries, Table 4.5 shows in the first column that about 45% of non-standard workers are in the bottom quintile of individual earnings. The rest of the table presents a matrix showing the relative distributional positions of non-standard workers within the household context. The columns refer to quintiles of individual earnings (among workers), and the rows correspond to quintiles of household equivalised income (for the whole working-age population). More than one-third of non-standard workers who were in the bottom quintile of individual earnings remained in the bottom quintile when household equivalised income was considered; another 24% moved to the following quintile, 20% to the middle, and the remaining 22% advanced to the top two quintiles. Strong movements are also found for non-standard workers in other earnings quintiles, as two-thirds to three-quarters of them are positioned in different quintiles in terms of the household equivalised income. The exceptions are the richest non-standard workers, those in the top quintile of the earnings distribution: 90% of them remain in the top two quintiles of the household income distribution.<sup>18</sup>

**Table 4.5. Distributional position of non-standard workers in quintiles of household equivalent income, by quintile of individual earnings, pooled 15 EU countries, 2012**

Quintiles of individual earnings	Share of non-standard workers	Quintiles of household equivalent income					Total
		1	2	3	4	5	
1	45.4	34.2	24.2	19.6	14.3	7.8	100
2	24.8	17.3	22.2	24.6	22.9	13.1	100
3	12.9	7.9	17.8	26.3	28.4	19.6	100
4	8.8	2.7	10.4	19.7	32.9	34.4	100
5	8.1	0.6	2.9	8.2	19.4	68.9	100
Total	100.0	21.1	19.9	20.8	20.3	19.7	100

*Note:* Quintiles of individual earnings are defined based on all workers, while quintiles of household equivalent income are defined based on the whole working-age population.

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012).

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These average patterns, however, differ markedly by household type: low-earning non-standard workers are more likely to remain at the bottom of the income distribution if they live with another non-standard worker rather than with a standard worker. To illustrate this, Figure 4.14 presents a graphical form of Table 4.5 for two-earner households with a breakdown by two employment types: households with two non-standard workers, and mixed households with a standard and a non-standard worker. It comes as no surprise that non-standard workers who live in a household with other non-standard workers tend to remain in the same position, especially those in the bottom earnings quintile: about 42% of them remain in the bottom quintile of household equivalised income (first bar in Figure 4.14). The comparable figure is much lower (12%) for those living with a standard worker (i.e. mixed households) (second bar in Figure 4.14). Similar patterns are also found for non-standard workers in other low-earnings quintiles, that is, the chances of remaining in the second/third quintile (or falling below) are higher for those in NSW households than those in mixed households. This suggests that the income inequality impact of non-standard employment, if any, happens mainly through the increase in NSW households, not through the growth in mixed households.

Figure 4.14 (Panel B) presents the results by country, including the European countries from Table 4.5 as well as Australia, Canada and Korea. Non-standard workers in the lowest earnings quintile seem to fare better in the household income distribution in Japan, Ireland and Australia, where slightly under one-quarter of these workers remain at the bottom quintile when all income sources from other household members were pooled. Interestingly, low-earnings, non-standard workers in those three countries seem to get more financial support from their household members or have received noticeable non-labour incomes, as about half of non-standard workers in the bottom earnings quintile in these countries found themselves in the upper three quintiles of the household income. On the other hand, low-earnings, non-standard workers in Estonia, Luxembourg and Greece face a higher risk of low income, as more than 40% of them remain in the lowest quintile of household income.

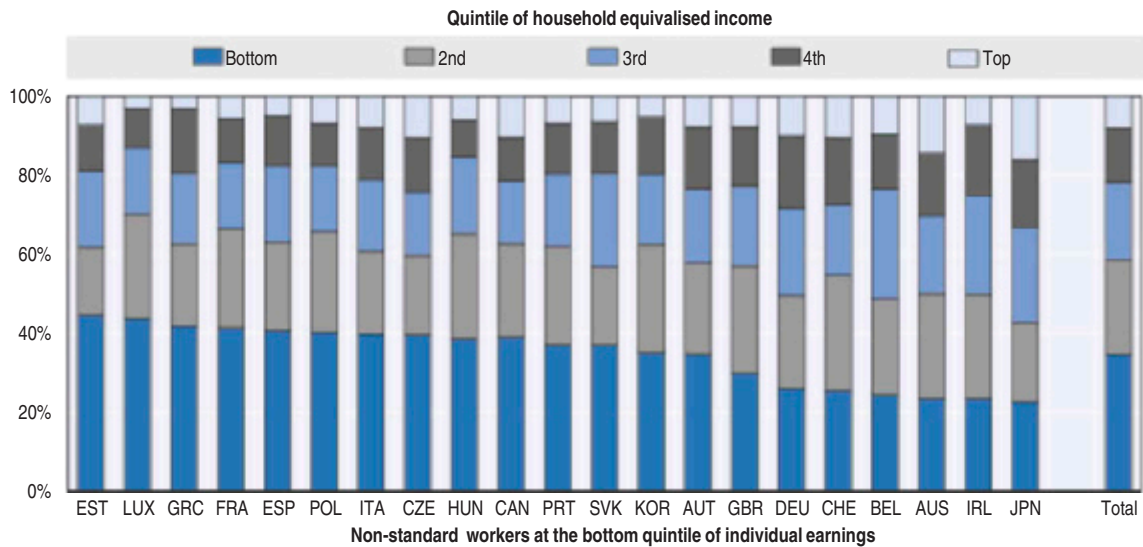


**Figure 4.14. Distributional position of non-standard workers in household income quintiles, by quintile of individual earnings, 2012**

Panel A. For two-earner non-standard workers and mixed standard and non-standard worker households, pooled 15 EU-SILC countries



Panel B. By country



*Note:* Quintiles of individual earnings are defined based on all workers, while quintiles of household equivalent income are defined based on the whole working-age population. “NSW only households” are households with only non-standard workers; “Mixed households” are households with both standard and non-standard workers. Data for Japan refer to respondent and spouses aged 20-64 and there is no information on earnings for other household members.

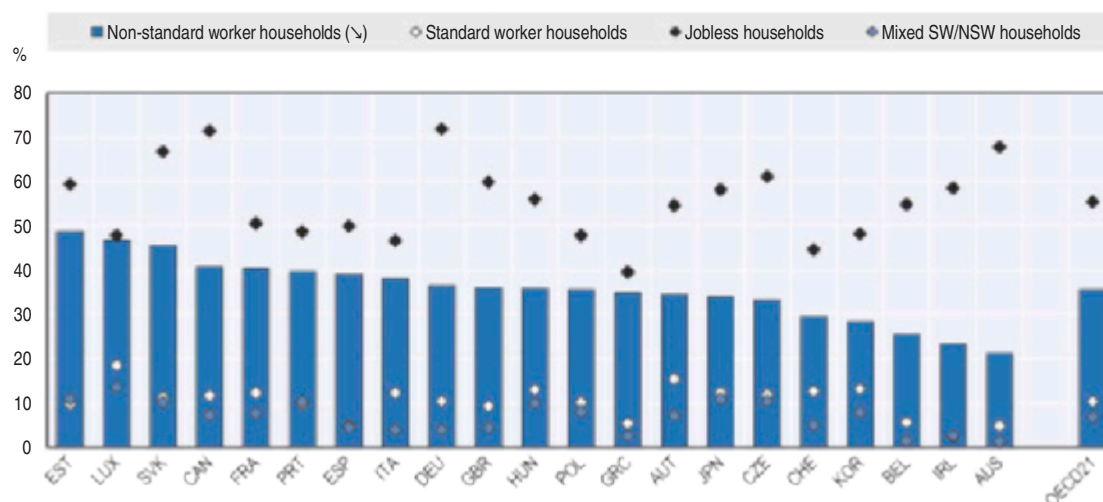
*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009), Survey of Labour and Income Dynamics (SLID, 2010) for Canada, Japan Household Panel Survey (JHPS, 2012).

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In spite of changes in the distributional position, households with NSW arrangements are still more likely to be found at the lower end of the household income distribution than other working households. Figure 4.15 reports that on average 36% of NSW households are situated in the bottom income quintile of household equivalised income. While this share is lower than that of jobless households (54%), it represents more than three times the share of households with only standard workers. The risk of being in the bottom quintile for NSW households is highest in Estonia, Luxembourg and the Slovak Republic where over 45% of NSW households fall into the lower part of the income distribution. Working poverty (which will be discussed below) is a concern when having a working household member (in a non-standard job) does not improve the position in the income distribution. It is remarkable that in Greece and Luxembourg the share of NSW households falling into the bottom quintile is very close to that of jobless households.

**Figure 4.15. Household employment patterns and household equivalised income, 2012 or most recent year**

Percentage of households in the bottom quintile of the household equivalised income distribution, by household and employment pattern



*Note:* “Standard worker households” refers to households where all adult members (16-64) are in standard work or to households with the presence of both standard worker(s) and jobless adult member(s). Similarly, “Non-standard worker households” refers to households where either all adult members are in non-standard work or there are only non-standard workers and non-working adult members. “Mixed SW/NSW households” refers to households with both standard and non-standard workers. Jobless households refer to households without any worker during the year. Household incomes are equivalised by family size. The cut-offs of income quintiles are calculated based on the entire population. Data for Japan refer to respondent and spouses aged 20-64 and there is no information on earnings for other household members.

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009), Survey of Labour and Income Dynamics (SLID, 2010) for Canada, Japan Household Panel Survey (JHPS, 2012).

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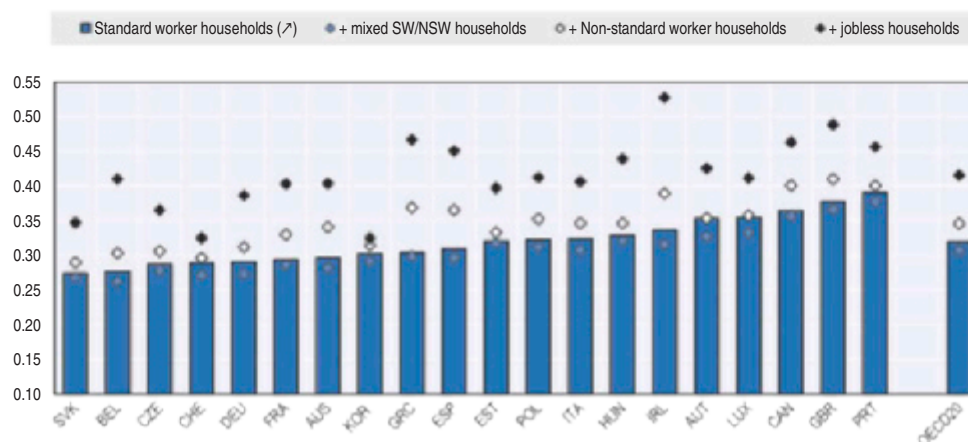
On the other hand, mixed households with both standard and non-standard workers are better placed in the income distribution. On average their risk of falling into the bottom of the income distribution is very similar to that of standard worker households: only about 7% of mixed households are found in the lowest income quintile. There are, however, some country differences, with the shares ranging from below 2% in Australia to around 15% in Luxembourg. Mixed SW/NSW households fare slightly better in the distributional position than SW households in all countries with the exception of Portugal.

### *How does non-standard work affect household earnings and income inequality?*

Do NSW arrangements widen the distribution of household earnings? Since almost half of all non-standard workers fall in the lowest earnings, a larger (and in many countries growing) share of non-standard workers may increase overall household earnings inequality. On the other hand, nearly half of non-standard workers live in a household with a standard worker, and these are less likely to be at the lower end of the distribution.

The analysis below presents earnings inequality by successively introducing households with different employment patterns in the calculation of inequality measured by the Gini coefficient of equivalised household earnings<sup>19</sup> (Figure 4.16). The first bar shows the level of earnings inequality among households that comprise only standard workers (including those living with non-workers). The second and third bars then show the level of inequality by successively adding households with mixed standard/non-standard workers and households with only non-standard workers, respectively. Finally, the triangle represents the estimates of household earnings inequality with the inclusion of households where no-one works.

**Figure 4.16. Gini coefficient of equivalised household earnings for households with different employment patterns, 2012 or most recent year**



*Note:* The Gini coefficient takes values between 0 for a perfectly equal income distribution where every person has the same income, and 1 which refers to a situation of maximum inequality where all income goes to one person. “Standard worker households” refers to households where all adult members (16-64) are in standard work or to households with the presence of both standard worker(s) and jobless adult member(s). Similarly, “Non-standard worker households” refers to households where either all adult members are in non-standard work or there are only non-standard workers and non-working adult members. “Mixed SW/NSW households” refers to households with both standard and non-standard workers. Jobless households refer to households without any worker during the year.

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009), Survey of Labour and Income Dynamics (SLID, 2010).

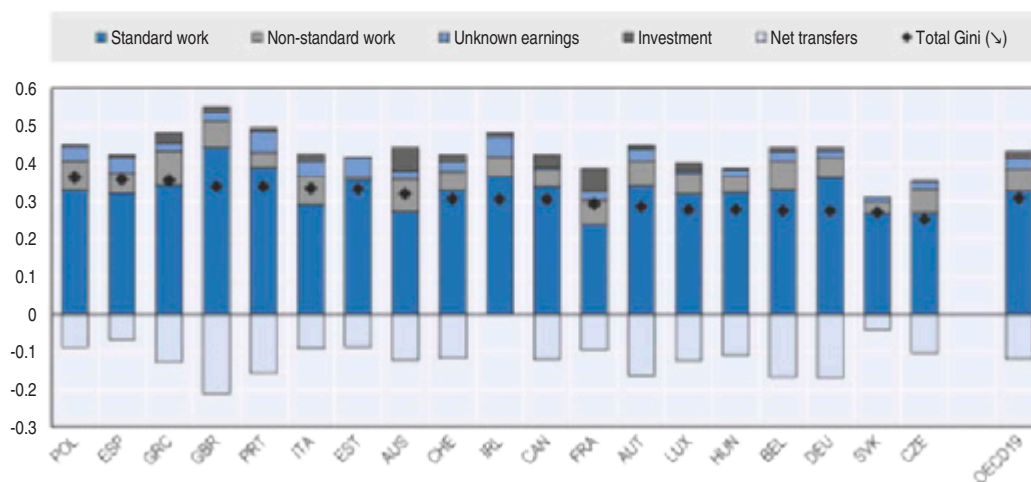
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Figure 4.16 reveals that including earnings from households with non-standard workers has two opposing effects. On the one hand, when mixed SW/NSW households were added, household earnings inequality declines by one percentage point, from 0.32 to 0.31 on average (more than two points in Austria and Luxembourg), compared with inequality among households with only standard workers. The lower level of inequality for mixed worker households may be related to the fact that such households have at least

two workers, while standard work households include both single-earner households (households with SW and jobless members) and multiple earners in standard work. On the other hand, when households with only non-standard workers were added, inequality increases significantly across the board, by about four percentage points, to a Gini coefficient of 0.35, on average. The dis-equalising effect of non-standard work at the household level is particularly pronounced in Ireland, Greece and Spain, where adding households with non-standard workers increases household earnings inequality by 7-8 percentage points. Finally, inequality increases more markedly when jobless households are included (average Gini coefficient of 0.41). The largest increases (more than 10 points in Gini) were found in Belgium and Ireland.

The extent to which non-standard employment affects the distribution of household income depends not only on the earnings level but also on the non-labour incomes received in these households. Inequality would widen if households with NSW arrangements also received less income from other sources, including social transfers, compared to standard employment households. This, however, does not seem to be the case, as NSW households receive a considerable share of their income in the form of transfers (see Annex 4.A3, Table 4.A3.1), which in general have an equalising effect on the income distribution (OECD, 2011, Chapters 6 and 7). To identify the impact of non-standard employment on household income inequality, a decomposition is performed by income sources (Figure 4.17), breaking down household incomes into four main sources (i.e. earnings, capital, public transfers and taxes).<sup>20</sup>

**Figure 4.17. Breakdown of household equivalent income inequality (Gini) by income source, 2012**



*Note:* Non-standard work sources refer to earnings from full-time temporary contracts, part-time jobs as well as self-employment. Unknown earnings are labour incomes for which the source (i.e. from SW or NSW work) cannot be identified. Benefits include all transfers from government. All income sources are equivalised by family size. The sample refers to working-age households. Note that for France, Hungary and the United Kingdom there are some differences between the current results and the Gini coefficients reported in the *OECD Income Distribution Database*, for which information is collected through questionnaires.

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Survey of Labour and Income Dynamics (SLID, 2010).

StatLink  <http://dx.doi.org/10.1787/888933208182>

On average across countries, earnings from non-standard work contributed about 20% to cross-sectional household income inequality. The contribution is higher for Australia and Belgium, reaching close to 30%, possibly due to their relatively higher share of

NSW earnings in income (28% and 26%, respectively) and the high correlation of NSW earnings with overall income. Earnings from non-standard work tend to be more dispersed than earnings from standard jobs, as non-standard jobs are more heterogeneous (Annex 4.A3, Table 4.A3.2): the factor dispersion (in terms of Gini coefficient) for NSW earnings is about 0.8, compared with 0.55 for SW earnings. In addition to being more unequally distributed, earnings from NSW are more concentrated in the households at the lower part of the income distribution, as the factor correlation between NSW earnings and total household income is low (on average about 0.33).

### *Non-standard work and poverty*

Non-standard employment may have a strong impact on poverty, as many NSW households are situated in the lower part of the income distribution. Previous OECD work has shown that access to a job is a major factor limiting the risk of poverty, but being employed *per se* is often not sufficient to escape poverty. While the poverty rate among jobless households is more than double the rate observed among working households, there are also significant in-work poverty risks in many countries. Indeed, 7% of individuals living in households with at least one worker are poor in the OECD, and the working poor comprise more than 60% of all the poor individuals of working age (OECD, 2008a).

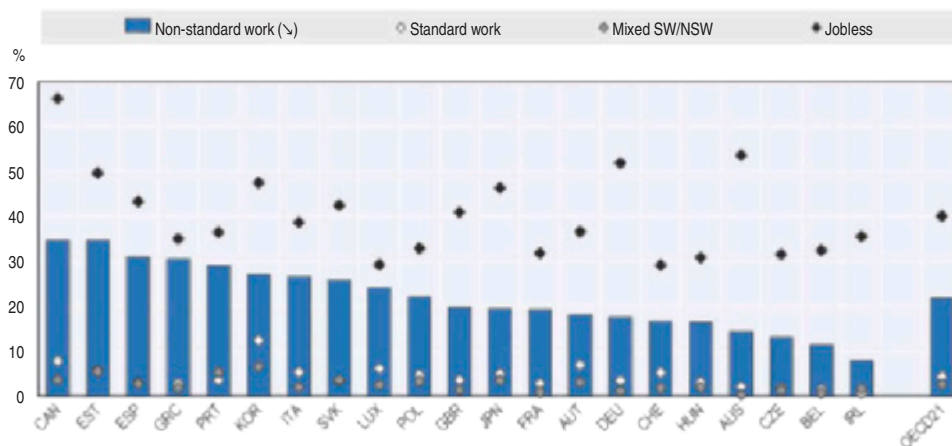
Are non-standard workers and their households at higher risk of poverty than standard workers? To address this issue, a conventional poverty threshold is used with 50% of the median equivalised household disposable income.<sup>21</sup> The analysis presents the proportion of *households* falling below the poverty line, for various household work types (Figure 4.18). This first confirms the importance of employment for protecting against poverty and second highlights the role of employment types. When averaged over the OECD countries for which data are available, jobless households have the highest poverty rate, at slightly over 40%, with over 50% in Germany and Australia, and 60% in Canada. At the same time, households with only non-standard workers also face a high risk of poverty, at around 22% on average across countries, while mixed households with both standard and non-standard workers have lower poverty rates (2-4%). This means that the risk of poverty depends on the combination of the type of employment with household composition, i.e. whether non-standard workers live with other non-standard workers (or jobless household members), or with standard workers. NSW poverty rates range from close to or above 30% in Canada, Greece, Portugal, Estonia and Spain to 12% or below in Belgium and Ireland.<sup>22</sup>

One of the striking findings of Figure 4.18 is that in some countries (e.g. Greece, Luxembourg) the poverty rate for NSW households (based on their net income) is very similar to that for jobless households. A possible reason for this is that NSW households on average pay more taxes or have less access to benefits than their jobless counterparts (see Annex 4.A3, Table 4.A3.1). In other words, low-paid NSW households have high net effective tax rates. This may create a disincentive to work, especially when non-standard jobs are the only options to find work.

Working-poor households account for around half of all poor households of working age (Figure 4.19), with most of them in NSW households. Indeed, among the working-poor households, about 60% are concentrated in households with non-standard employment. NSW households represent an important fraction of the working poor particularly in Australia, Ireland and the southern European countries (except Portugal).



**Figure 4.18. Poverty rates of households for various household employment patterns, 2012 or most recent year**

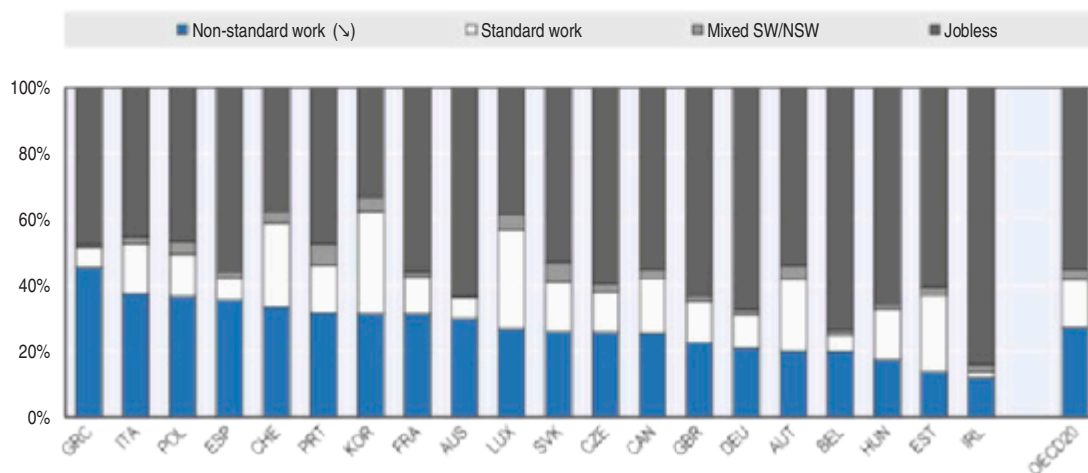


*Note:* The poverty line is calculated based on half of the median equivalised household income calculated for the entire population. “Standard work” refers to households where all adult members (16-64) are in standard work or to households with the presence of both standard worker(s) and jobless adult member(s). Similarly, “Non-standard work” refers to households where either all adult members are in non-standard work or there are only non-standard workers and non-working adult members. “Mixed SW/NSW” refers to households with both standard and non-standard workers. Jobless households refer to households without any worker during the year. Data for Japan refer to respondent and spouses aged 20-64 and there is no information on earnings for other household members.

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009), Survey of Labour and Income Dynamics (SLID, 2010) for Canada, Japan Household Panel Survey (JHPS, 2012).

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**Figure 4.19. Distribution of poor households by household employment pattern, 2012 or most recent year**



*Note:* The poverty line is calculated based on half of the median equivalised household income calculated for the entire population. “Standard work” refers to households where all adult members (16-64) are in standard work or to households with the presence of both standard worker(s) and jobless adult member(s). Similarly, “Non-standard work” refers to households where either all adult members are in non-standard work or there are only non-standard workers and non-working adult members. “Mixed SW/NSW” refers to households with both standard and non-standard workers. Jobless households refer to households without any worker during the year.

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009), Survey of Labour and Income Dynamics (SLID, 2010) for Canada.

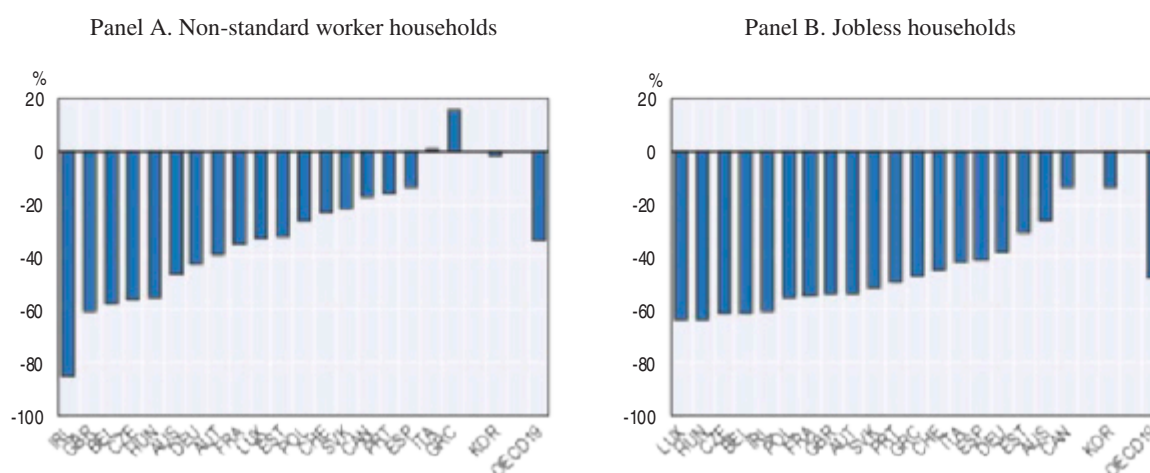
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To what extent does redistribution through taxes and benefits reduce the poverty risk for non-standard worker households? Figure 4.20 presents the impact of taxes and transfers in reducing poverty, comparing NSW with jobless households. Households with non-standard workers see their poverty rates reduced by a third, from 34% to 22% on average. In comparison, taxes and transfers have a much larger impact on jobless households, halving their poverty rate from 76% to just 39% after taxes and transfers. The poverty-reducing impact of taxes and transfers for NSW households tends to be particularly large in Belgium, Ireland and the United Kingdom. For instance, NSW households in the United Kingdom have one of the highest incidences of poverty (50%) in terms of market income. Redistribution lowers their poverty risk to 20%, below the OECD average of 22%. The strong poverty-reducing effect in the United Kingdom (and other countries) reflects certain tax/benefit policies that are especially helpful to non-standard workers and their families.

By contrast, taxes and transfers have no impact on poverty reduction for NSW households in Korea and Italy. In Greece, poverty among NSW households even increases after redistribution. In other southern European countries, Portugal and Spain, poverty reduction for NSW households was also modest.

**Figure 4.20. The impact of taxes and transfers on poverty reduction**

Percentage reduction in poverty due to tax/transfer



*Note:* The poverty line is half of the median equivalised household income calculated for the entire population. Figures represent the difference between the poverty rate for disposable income and for market income in percentage points. For Korea market income refers to after tax before public social and government transfers and is not comparable with the other countries.

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009), Survey of Labour and Income Dynamics (SLID, 2010) for Canada.

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#### 4.6. The role of taxes and benefits with regard to non-standard work

Personal income taxes and cash social transfers are not neutral to the form of work. Differences in treatment result directly or indirectly from how policies are designed. Some policies are directly targeted to particular types of work by differentiating the

“eligibility” of taxes and benefits for different types of work. For example, in many countries self-employed workers are not eligible for unemployment insurance benefits. Similarly, the rules for social insurance contributions for self-employed workers are different from those for employees. Some differences in taxes and benefits between different types of workers are indirect, in the sense that they result from how different policies interact in the context of non-standard work. For example, means-tested benefits may be more generous for part-time workers as a result of their lower earnings, which is in turn due to working fewer hours.

This section analyses how the role of taxes and benefits of workers in non-standard jobs differs with respect to those in standard jobs. The analysis looks at qualitative factors (statutory differences) and quantitative indicators (net benefits, adequacy and work incentives). The quantitative analysis is carried out for part-time and self-employed workers using the results of simulations with tax-benefit models.<sup>23</sup> The analysis of temporary workers is limited to statutory differences.

### *Statutory differences between standard and non-standard work*

People in NSW may be subject to different tax and benefit rules. In general, self-employed workers are more likely to experience different statutory treatment than people in other forms of NSW (Table 4.6). In most cases, the benefit rules for part-time and temporary workers are the same as for standard workers. In most countries, unemployment and work injury benefits for the self-employed are different than for standard workers. Sickness and maternity, old-age, disability and survivors benefits are also different in some countries. Even family benefits are different for self-employed workers in Belgium and Italy (where benefit rules are different) and Chile, Greece and Mexico (where some family benefits are not available for self-employed workers).

The most common difference with standard workers is the exclusion of workers in non-standard work from benefits related to unemployment and work injury. In 19 out of the 34 OECD countries self-employed workers are not eligible for unemployment benefits. In three countries, some part-time workers are not eligible for unemployment benefits.<sup>24</sup> In ten countries, self-employed workers are not eligible for work injury benefits.

The second most common difference concerns variations in the content of the benefits (e.g. the coverage or payment level). For example, in the United Kingdom, self-employed workers are not eligible for statutory sick pay (which is paid by the employer) but for employment and support allowance, which is less generous. Benefit content differences are common for self-employed workers, particularly regarding old-age, disability and survivor, and sickness and maternity benefits. In a few countries, the content of benefits also differs for part-time and temporary workers. For example, some part-time workers in Denmark (working less than nine hours per week) and temporary workers in Canada (casual and seasonal agricultural workers) are not eligible for the earnings-related pension. Finally, in some countries, the enrolment of the self-employed in some benefits is optional. These optional schemes are particularly common for insurance benefits related to work injury, sickness/maternity, unemployment and old-age/disability/survivor.

**Table 4.6. Statutory benefit differences between non-standard and standard work, by benefit, 2010<sup>1,2</sup>**

	Part-time <sup>3</sup>					Temporary worker					Self-employed				
	ODS	SM	WI	UB	FB	ODS	SM	WI	UB	FB	ODS	SM	WI	UB	FB
Australia															
Austria															
Belgium															
Canada															
Chile															
Czech Republic															
Denmark															
Estonia															
Finland															
France															
Germany															
Greece															
Hungary															
Iceland															
Ireland															
Israel															
Italy															
Japan															
Korea															
Luxembourg															
Mexico															
Netherlands															
New Zealand															
Norway															
Poland															
Portugal															
Slovak Republic															
Slovenia															
Spain															
Sweden															
Switzerland															
Turkey															
United Kingdom															
United States															

1. FB: Family allowances; ODS: Old age, disability and survivors, SM: Sickness and Maternity, UB: Unemployment, WI: Work injury.

2. Colour code: “dark grey”: no benefit, “light grey”: optional enrolment, “blue”: different rules from standard workers, “white”: same rules as the general scheme.

3. Part-time workers are excluded if working less than nine hours a week.

4. In Japan, part-time workers are entitled to unemployment benefit if working more than 20 hours per week.

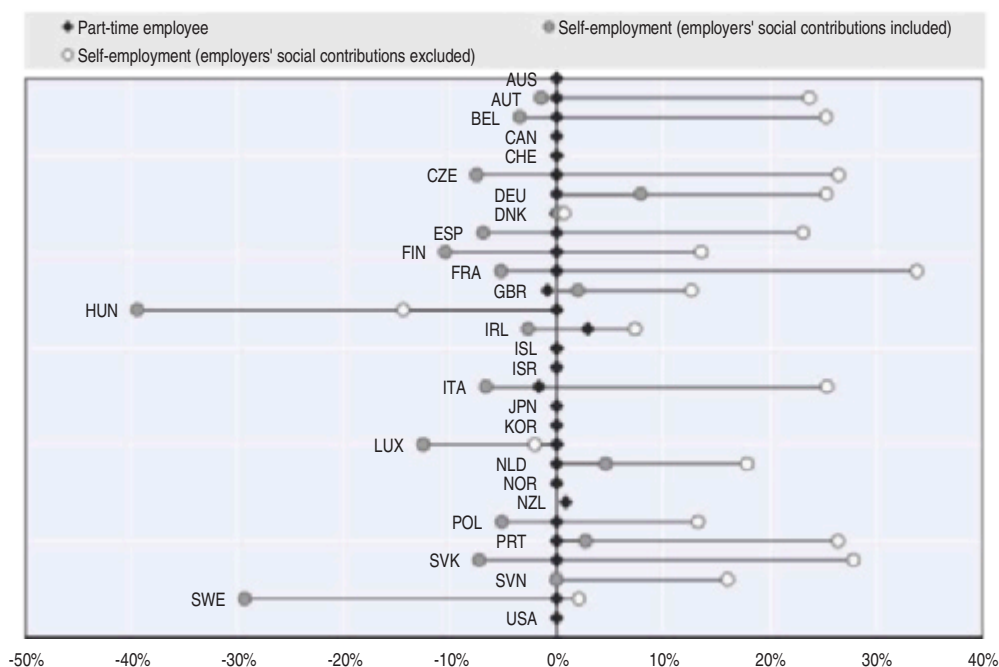
5. There is no unemployment benefit in Mexico. Labour law requires employers to pay dismissed employees a lump sum.

Source: Social Security Administration (2010), *Social Security Programs Throughout the World: Asia and the Pacific*, Government Printing Office; Social Security Administration. (2010), *Social Security Programs Throughout the World: Europe*, Government Printing Office; Social Security Administration (2011), *Social Security Programs Throughout the World: The Americas*, Government Printing Office.

Figure 4.21 shows that, in general, the amounts of taxes/benefits paid/received by part-time workers are similar, if not identical, to those paid/received by standard workers. In contrast, the amounts of taxes/benefits paid/received by self-employed workers are usually substantially different. Whether self-employed workers do better or worse than standard workers depends on how employer social insurance contributions are accounted. Legally, employer social insurance contributions are paid by the employer. However, the actual incidence of such contributions may effectively fall on the employer (lower profits) or be transferred to the employee (lower wages) or to consumers (higher prices).<sup>25</sup> Here, the scenarios in which employer contributions fall either on the employer or the employee are assessed. Generally, self-employed contributions are larger than employee contributions but smaller than the sum of employee and employer contributions. Hence,

self-employed workers tend to do worse than employees if the actual incidence of employer contributions falls on employers. Conversely, self-employed workers tend to do better than employees if the actual incidence of employer contributions falls on employees. However, there are some significant exceptions. Independently of the incidence of employer contributions, the self-employed fare worse than employees in Hungary and Luxembourg, and better than employees in Portugal, Germany, Austria, the Netherlands and the United Kingdom.

**Figure 4.21. Differences in tax-benefit amounts between part-time/self-employed workers and workers in standard jobs, 2010**



*Note:*

Differences expressed as percentage of average wages (AW) in the country.

Part-time results are for employees working between 16 and 30 hours per week and paid the average hourly wage in the country. Self-employed results are for people working full-time (40 hours per week) and earning between 40% and 160% of the average wage in the country (self-employment estimates are available only for EU countries). Four sets of typical families are considered: single adult living alone, single parent with children, single-earner couples with and without children.

*Source:* OECD tax-benefit models and EUROMOD.

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### ***Adequacy of net benefits for low-earning workers in non-standard jobs***

As discussed in Section 4.5, workers in non-standard jobs face a higher risk of being in poverty as their earnings tend to be lower. Taxes and benefits that are designed appropriately can reduce this risk by increasing the income that families effectively take home. The analysis below measures the adequacy of tax-benefit systems in protecting families relying on low earnings from part-time or self-employment. In either case, family earnings before taxes and benefits are equivalent to those received by a person working 20 hours per week at the country's average hourly wage. Adequacy is measured by comparing equivalised family income after taxes and benefits to the national poverty line, defined as 50% of median disposable income.



Comparisons between employment and self-employment incomes are not straightforward in practice. Self-employed income is often unpredictable as it tends to fluctuate across time considerably more than wages and salaries. Also, evidence shows that self-employed workers underreport income to the tax authorities more than employees do (Feldman and Slemrod, 2007). Bearing these differences in mind, the analysis measures the amount of taxes and benefits while assuming a scenario in which self-employed incomes are constant across the year and accurately reported to the tax and benefit authorities.

In all the countries analysed, workers working half-time (20 hours per week) and earning the average hourly wage would earn an income (before taxes and benefits) above the poverty line, if living alone (Figure 4.22, Panel A). If they live in families and are the single earner, in several countries the family income would be below the poverty line. The proportion of countries with families in poverty increases with the number of family members. Only in Germany, the Netherlands and the United Kingdom would the income of a couple with two children earning half the monthly average wage lift them above the poverty line.

Taxes and benefits considerably alter these results for families with part-time workers, redistributing income from smaller to larger families. Bearing in mind that the results are illustrative of a specific wage level, single part-timers pay more in taxes than they receive in benefits – in Slovenia, the fall in disposable income brings singles below the poverty line. In some countries, including Ireland, New Zealand and Japan, couples without children pay less in taxes than they receive in benefits, but in most countries the opposite is the case, and in some countries (Austria, Italy, Sweden and Switzerland), disposable income falls below the poverty line. In most countries, single parents who have two children and work part-time receive more in benefits than they pay in taxes, and in many of these countries the resulting increase in disposable income brings the household above the poverty line. With the exception of Korea, Spain and Switzerland, couples with children are net beneficiaries of taxes and benefits.

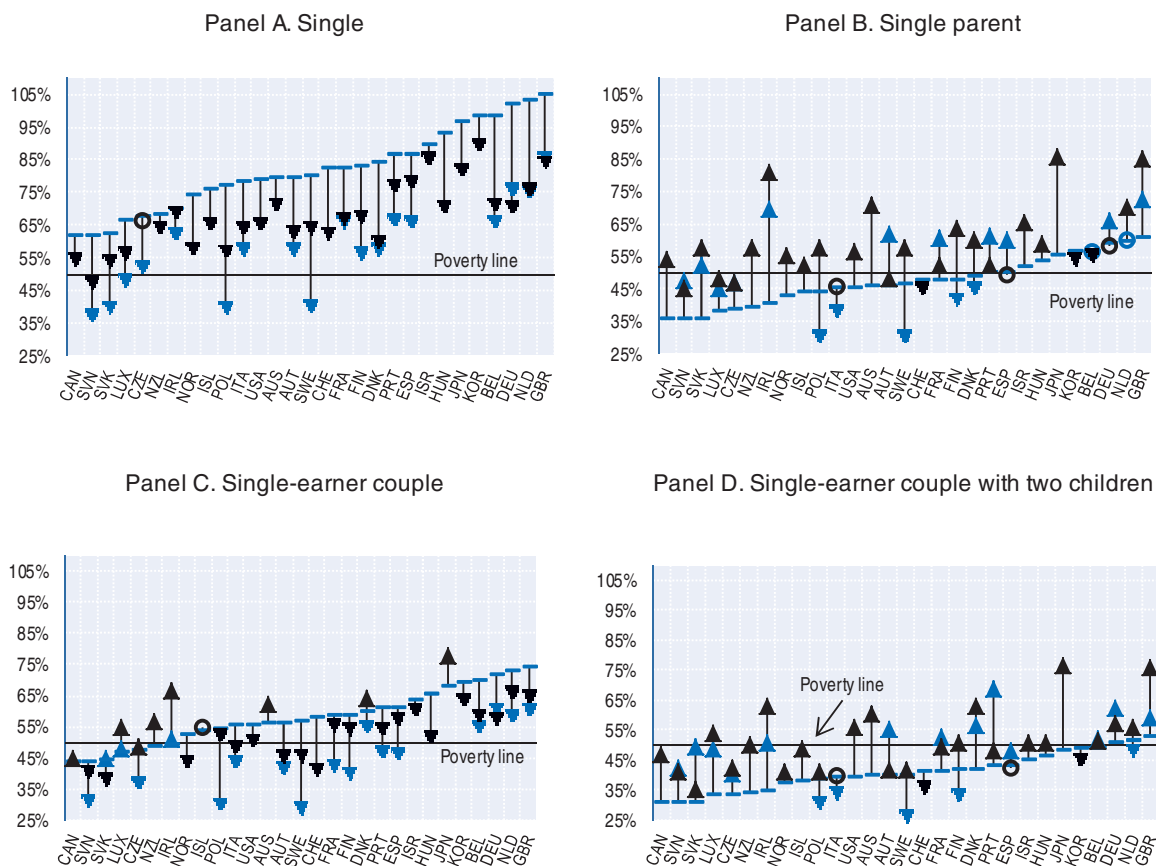
In several OECD countries, taxes and benefits are not sufficient to prevent the income of low-earning families headed by self-employed workers from falling below the poverty line. In comparison to part-time employees, a larger number of families are left in poverty. In the case of families composed by a single individual, the amount of taxes exceed the benefits in all the countries analysed, and in several of them (Luxembourg, Poland, the Slovak Republic, Slovenia and Sweden) family disposable income falls below the poverty line.

In most countries, single-earner couples without children also pay more in taxes than they receive in benefits. In 16 countries, the income of single-earner couples without children is below the poverty line, and in ten of these this is a direct effect of negative net benefits. Only in Ireland the income of single-earner couples rises above the poverty line after accounting for taxes and benefits.

As with part-time workers, net benefits tend to be more generous for families with children. In 16 countries, net benefits are positive for single parents with children. In six of these countries, this results in family disposable income rising above the poverty line. Among couples with children, net benefits are positive in 17 countries, lifting income above the poverty line in six of these. Yet in 14 countries, family income is below the poverty line, in the case of the Netherlands as the direct result of negative net benefits.

**Figure 4.22. Tax-benefit adequacy**

Part-time workers (black), self-employed workers (blue), earning half the average wage, before (bars) and after (arrows) taxes and benefits, 2010



Note:

The results are expressed as a percentage of the average equivalised household disposable income in the country.

Source: OECD tax-benefit models and EUROMOD.

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### Work incentives

How do taxes and benefits affect the work incentives of workers in non-standard jobs? Do they encourage or deter workers in non-standard jobs from increasing their working hours or moving into standard jobs? Do they make work pay or do they reduce the financial incentives to work harder or even to work at all?

This sub-section addresses these questions by using the results of simulations computed with the OECD/EC tax-benefit models (for part-time workers) and EUROMOD (for self-employed workers).<sup>26</sup> Following the literature on labour supply (Heckman, 1974; Blundell and MaCurdy, 1999; Brewer et al., 2010; and Blundell et al., 2011), a distinction is made between the *intensive margin* of labour supply, which measures incentives to increase the intensity of work by those at work (i.e. variations in the number of hours of work) and the *extensive margin*, which measures “qualitative shifts” from out-of-work to in-work or from NSW to standard work.

### *Incentives from inactivity to part-time work*

Do taxes and benefits provide incentives for individuals out of work to move into NSW? This section assesses these incentives by measuring participation tax rates (PTR). Simulations assume that out-of-work people are “inactive”, in the sense that they are not eligible for unemployment benefit but may receive social assistance and other benefits, if they are entitled. In the situation of NSW, part-time and self-employed workers are assumed to work half-time at the average hourly wage.

In many OECD countries the income incentives to move from inactivity to part-time employment are rather small (Figure 4.23). This result is in line with findings from previous studies (OECD, 2007; OECD, 2009; OECD, 2010). On average, the participation tax rate (PTR) is 70%. Put another way, 70% of the earnings obtained in moving from inactivity (in receipt of social assistance) to part-time employment are “taken away” due to higher taxes and lower benefits. Across countries, PTRs range from less than 30% in Italy<sup>27</sup> and the United States to more than 90% in Switzerland and Denmark. In 15 countries the PTRs exceed 80%.

The main cause of such high rates is the reduction or removal of social assistance benefits. On average, 45 percentage points of PTR are due to social assistance benefits. In some countries this effect is partly compensated by in-work benefits (or other employment-related instruments) that increase the financial returns of work (Pearson and Scarpetta, 2000; Immervoll and Pearson, 2009). In Ireland and the United States, in-work benefits reduce the PTRs by 35% and 20%, respectively. Housing benefits may also play a role in reducing the financial rewards of part-time work. With a few exceptions, social contributions play a larger role than personal income tax in increasing PTRs. Through progressive tax rates, exemption limits and other deductions, income taxes have more scope than social contributions, which usually rely solely on contribution bases and fixed rates, to modulate the tax burden on low-earning workers.

Income incentives to move from inactivity to self-employment on a part-time basis are also limited in most countries analysed. In Germany, Hungary, Portugal, Denmark and Luxembourg, people in inactivity have little income incentive to take up self-employed work, as 90% or more of their earnings are “taken away” by lower benefits or higher taxes or contributions. Participation tax rates for self-employment are higher than for employees, especially in Hungary, Ireland and Sweden, and on average by one-quarter. This is the case in all but four of the analysed countries.

Social benefits are the main driver of PTRs among self-employed workers; on average more than half of the rate is due to social benefits. About one-third of PTRs are due to social contributions. Also, predictably, social contributions are the main source of differences between the PTRs of the self-employed and employees.

**Figure 4.23. Participation tax rates for part-time workers**

Participation tax rates (PTRs) for inactive persons who are receiving social assistance and move into part-time work, decomposed by taxes and benefits, 2010



Note:

PTRs for inactive persons (0-20): PTRs for inactive persons (working 0 hour) receiving social assistance and moving into part-time work (working 20 hours).

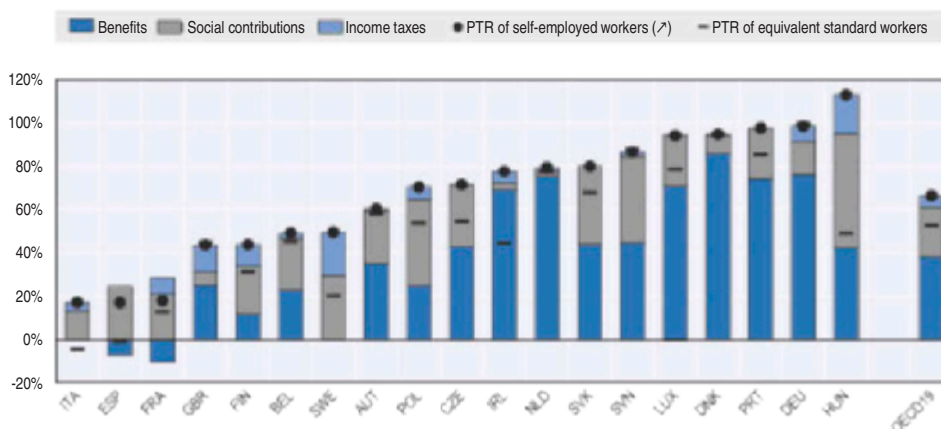
The results are computed as the average of four sets of typical families: single adult living alone, single-earner couple without children, single parent with two children, single-earner couple with two children.

Source: OECD tax-benefit models.

StatLink <http://dx.doi.org/10.1787/888933208240>

**Figure 4.24. Participation tax rates for self-employed workers**

Participation tax rates (PTRs) for inactive persons receiving social assistance and moving into self-employed work, decomposed by taxes and benefits, 2010



Note:

The results are computed as the average of four sets of typical families: single adult living alone, single-earner couple without children, single parent with two children, single-earner couple with two children.

Source: EUROMOD, Tax-benefit microsimulation model for the European Union.

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### *Incentives for moving from part-time to full-time work*

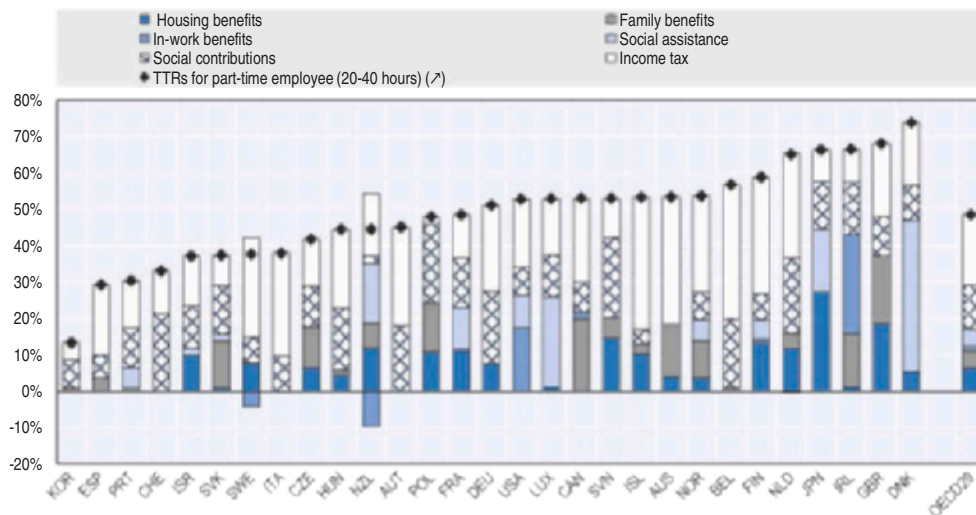
This sub-section assesses the incentives that non-standard workers would have to move into standard jobs. The indicator used to measure such incentives is referred to here as the transition tax rate (TTR) and calculates how much of the earnings increase is “taken away” through higher taxes and lower benefits.<sup>28</sup>

The income incentives to move from part-time to full-time employment tend to be higher than those for moving from inactivity to part-time employment. On average, the transition tax rate (TTR) for moving from working 20 hours per week to working 40 hours per week is 48%. This ranges from less than one-third in Korea, Spain and Portugal to two-thirds or more in Denmark, the United Kingdom, Ireland, Japan and the Netherlands.

Personal income taxes are the main driver, and social contributions the second largest, of TTRs, accounting for 19 and 12 percentage points, respectively, on average. The role of social benefits is scattered. Housing benefits produce rates that are well above average in Japan and the United Kingdom. Family benefits considerably reduce the work incentives of families with children in English-speaking countries (except New Zealand and the United States). Social assistance benefits, overall, play a smaller role than in the transition from inactivity to part-time employment. In-work benefits have different effects across countries. In Ireland and the United States, in-work benefits increase the TTRs, as they are withdrawn from workers with higher earnings. On the other hand, in New Zealand and Sweden, the TTRs are negative, thus rewarding transitions from part-time to full-time work.

**Figure 4.25. Transition tax rates from part-time to full-time employment**

Transition tax rates (TTRs) for part-time employee to move to full-time employment, decomposed by taxes and benefits, 2010



*Note:*

TTRs for part-time employee (working 20 hours) moving into full-time work (working 40 hours).

The results are computed as the average of four sets of typical families: single adult living alone, single-earner couple without children, single parent with two children, single-earner couple with two children.

*Source:* OECD tax-benefit models.

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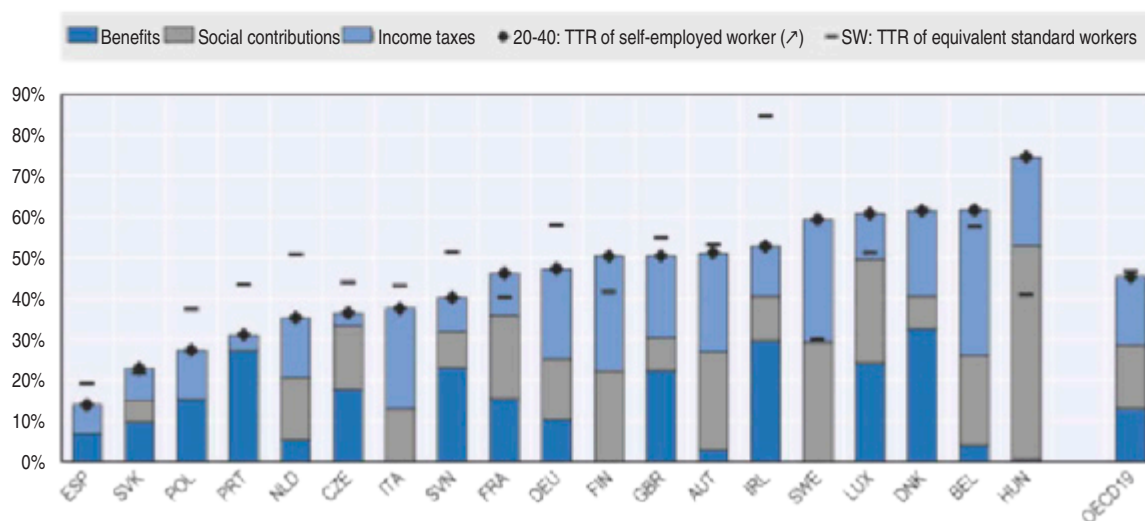


Self-employed workers face lower income disincentives to move from part-time work to full-time work than from inactivity to part-time work. On average, less than half of the earnings increase due to working full-time instead of half-time is “taken away” with lower benefits or higher taxes and contributions. In 13 out of 19 countries, families keep at least half of the increase in earnings, and in virtually all countries they keep at least 40%. The rates for self-employed workers are, on average, similar to those faced by employees, although there are significant differences across countries.

Personal income taxes, social contributions and social benefits have a similar impact on transition tax rates when all analysed countries are taken as a whole. Nevertheless, there are important differences in the impact of social contributions across countries, in particular between countries with high rates of self-employed contributions and those where self-employed contributions are set at a fixed amount.

**Figure 4.26. Transition tax rates from part-time to full-time self-employment**

Transition tax rates (TTRs) for self-employed workers to move to full-time work, decomposed by taxes and benefits, 2010



Note:

The results are computed as the average of four sets of typical families: single adult living alone, single-earner couple without children, single parent with two children, single-earner couple with two children.

Source: EUROMOD, Tax-benefit microsimulation model for the European Union.

StatLink  <http://dx.doi.org/10.1787/888933208274>

## 4.7. Conclusion

The concept of NSW is a “fuzzy” one. As a benchmark, this chapter uses a broad definition of atypical or NSW arrangements that, following international convention, includes any temporary, part-time and own-account self-employment work: taken together, this kind of employment comprises a sizeable share (33%) of total employment in the OECD, shared roughly equally between temporary jobs, permanent part-time jobs and self-employment. The shares of non-standard employment range from a low of under 20% in some eastern European countries to 46% or more in the Netherlands and Switzerland. Part-time employment is particularly frequent in the Netherlands,

Switzerland and the Nordic countries. Self-employment is more important in Greece, the Czech and Slovak Republics and Turkey. Temporary employment is largest in relative size in Poland, Portugal, Korea and Spain.

One-quarter of men but 40% of women are in non-standard employment, mainly due to strong gender imbalances in part-time work. Youth and workers with a lower level of education are over-represented in NSW – close to half of temporary workers are under 30 years of age, and the incidence of temporary employment is 30% higher for those with lower level of education than for those with medium education. Non-standard workers are also more likely to be found in small firms. Half of all non-standard workers are the main breadwinners in a household, and a large majority of them live in two-or-more-person households, often with children.

More than 40% of the 17% increase in the number of employed people between 1995 and 2007 was attributable to non-standard jobs. In the six years since the global economic crisis, standard jobs were destroyed while part-time employment continued to increase. There has been strong growth in part-time permanent jobs over the long-term in most OECD countries, and some saw a doubling in their share. Temporary employment also increased in more than three-quarters of the OECD, especially in Poland and southern Europe. On the other hand, self-employment either declined or was stable in most countries.

Jobs are becoming polarised. The tasks-based approach, for instance, shows that the employment shares of routine-task jobs, traditionally composed of middle-skill workers, have declined from 53% to 41% between 1995 and 2010. At the same time, there has been a large increase in the employment share of abstract (from 28% to 38%), and to a lesser extent, non-routine manual jobs (from 18% to 21%). Similarly, the jobs-based approach, which takes into consideration a particular occupation within a particular industry, finds evidence for job polarisation by showing a U-shaped pattern of employment shifts across job deciles in more than half of the countries. The shift towards job polarisation is closely related to the development of non-standard employment: much of the decline in middle-skill employment is due to a decrease in standard work contracts, while growth in high-skill and low-skill jobs is mainly associated with non-standard employment.

Having a non-standard job improves the chances of advancing into a permanent job for only a few. In particular, in most countries those on temporary contracts are more likely to move into standard employment than those who were unemployed, while being in part-time or self-employment in general does not improve the prospects of standard work compared with the unemployed. This suggests some evidence of stepping-stone effects for temporary workers, at least in the short run. At the same time, non-standard workers face higher labour market insecurity and are less likely to receive on-the-job training. In addition, temporary workers face significantly higher job strain, while this is not the case for part-time workers.

NSW is associated with wage penalties. In most countries, temporary workers earn significantly less than otherwise comparable workers in standard employment, controlling for observed and unobserved individual characteristics. The wage penalty is slightly higher for young temporary workers. Part-timers, mainly those on temporary contracts, also tend to earn lower hourly wages than their standard full-time counterparts, while no obvious wage penalty is found for those in permanent jobs. In addition, in many cases temporary workers with no change in contract type tend to suffer greater earnings instability.

Non-standard workers are more likely to be found in the lower part of the earnings distribution, particularly in the lowest three deciles, and an increase in the share of non-standard workers is associated with substantial wage penalties of 20% at the bottom of the distribution (the bottom 40%) but not at the top, thereby increasing earnings inequality. Adding households where non-standard workers are living to standard-worker households increases household earnings inequality by 3 Gini points. On average across countries, this contributes about 20% to cross-sectional household income inequality. This contribution is higher in Australia and Austria (around 30%) and lowest in Estonia (below 5%).

Non-standard workers are also more likely to live in lower *income* households. The household constellation matters, however, a lot: low-earning non-standard workers are much less likely to leave the bottom of the income distribution if they live with another non-standard worker rather than with a standard worker.

More than half of all poor working-age households are households with at least one worker. Among these “working poor” households, a large majority (60%) are made up of NSW households. The average poverty rate for households where all earnings are drawn from NSW is 21% while it is 2.5% for households where earnings from NSW are pooled with earnings from standard work. Public transfers and taxes reduce poverty risks among households comprising non-standard workers by some 35%.

There are statutory differences regarding the “access” and content of taxes and benefits (e.g. the coverage or level) for workers in non-standard jobs with respect to standard workers. The differences are larger and more widespread for self-employed workers. The most common differences include the exclusion of self-employed workers from unemployment benefits, and no or non-compulsory eligibility for work injury benefits as well as differences in the rules on sickness and maternity benefits. With the exception of a handful of countries (Ireland, Italy, New Zealand and the United Kingdom), the effective differences in the content and extent of taxes and benefits for part-time workers are related more to their particular circumstances (e.g. lower earnings due to fewer hours of work) than to structural differences in policy rules.

In most countries, taxes and benefits reduce in-work poverty gaps for families relying on earnings from non-standard jobs. Under similar circumstances, taxes and benefits are more effective in reducing the poverty gap for part-time workers than for self-employed workers. Taxes and benefits also have a considerable effect on the work incentives of workers in non-standard jobs. On average, the results suggest that taxes and benefits generate higher hurdles to moving from inactivity to part-time work than to increasing work intensity or to moving from part-time to full-time work.

All in all, the analysis in this chapter suggests that the rise in NSW arrangements and job polarisation have contributed to aggregate employment growth in the past, but have also increased both individual wage and household income inequality. Tax and benefit reforms therefore need to be focused on preventing in-work poverty among low-earning households with non-standard workers while providing sufficient incentives to take up and increase work efforts, and active labour market policies need to be designed to raise the earnings potential of non-standard workers, especially the young and people with less education.

## Notes

1. Employers are excluded from the analysis since transitions between employers and standard workers are likely to be small and employers differ from other workers in their remuneration (receiving earnings as well as business income). In the OECD they represent an average of 4% of total employment for the working-age population.
2. Student workers and apprentices are excluded from the analysis, as they may increase the share of part-time workers and temporary workers. They represent on average 2% of total employment.
3. While high levels of PMR could be detrimental to business activities, regulations can be used to protect small-sized firms from large-sized competitors (Torrini, 2005).
4. A first method to classify the skill level of a job follows a simple “task” approach to classify skills into three broad categories based on the nature of the job task (i.e. abstract, routine and non-routine manual) following Autor and Dorn (2013) among others.
5. A second method to classify the skill level of a job is to look at employment shifts using the “job-based” approach – based on Eurofound (2008, 2012) – where a job is defined as a particular occupation in a particular industry, and the skill of a job is measured by the median hourly wages of workers within the job cell.
6. The recent recession (2007-10) also plays an important role in reshaping the overall changes in employment structure for some countries. In general, the observed employment adjustments were amplified in the downturn.
7. Some noticeable examples include Belgium, France, Germany and the Netherlands.
8. The influx of migrant workers can also change the structure of employment as foreign-born workers are more prevalent in the highest and the lowest quintile of earnings and are often characterised by having NSW contracts.
9. EU-SILC and income data for European countries are used in this and the subsequent section since EU-LFS has no information on wages and income.
10. In the presence of asymmetrical information, firms cannot discriminate between high- and low-productivity workers. Therefore, they may use non-standard wage contracts (by paying low initial wages) to create a probationary stage during which they can evaluate workers’ performance. But another route is to offer efficiency wages and allow workers to self-select into such jobs.
11. The baseline regressions in Tables 4.1 and 4.2 include age groups, education, marital status, the presence of children, limited health condition, region of residence, occupation and the year dummies. Results for countries using national panels added additional controls – industry, firm size and job tenure (for Australia, Germany and the United Kingdom).
12. The sum of the coefficients  $b(TE)+b(TE \cdot age1529)$ , for instance, captures the difference in (log) wages for young workers between temporary workers and their counterparts in standard jobs. The wage gap between young and prime-age

(reference) individuals among temporary workers can be obtained by  $b(\text{age}1529)+b(\text{TE}\cdot\text{age}1529)$ . The wage differentials between other age/skill/contract groups can be obtained in a similar way.

13. Table 4.4 provides information on annual changes of contract and the unadjusted rates of moving up/down or staying in the same earnings quintiles over any two consecutive years. As only full-time employees are considered in the analysis (since the previous section does not show wage penalties for part-time workers), there are four possible scenarios in terms of a change of employment status: workers staying in a standard job (SW-SW); workers moving from a standard to a temporary job (SW-TE); workers moving from a temporary to a standard job (TE-SW); and workers remaining in a temporary job (TE-TE). Earnings mobility is measured by examining whether an individual experienced a change in the relative quintile position in the distribution of annual earnings. Upward mobility occurs if an individual moves from a lower to a higher earnings quintile from year  $t-1$  to  $t$ . On the contrary, downward mobility refers to a transition from a higher to a lower quintile, and stay indicates that an individual remains in the same quintile over time.
14. Note that the results here refer to *marginal* effects *net* of all observable characteristics; the Korean exception may indicate some selectivity problems among temporary workers there, as individuals who are less likely to transition into a regular job – due to an unobserved effect – tend to select themselves into this group. Additionally, because of a segmented labour market, accepting a non-standard job may lead to stigma and give a negative signal to employers who may be less willing to offer permanent jobs to those on non-standard jobs.
15. This discussion draws on the OECD (2014) definition of job quality with three sub-dimensions (level of earnings, labour market security and quality of the working environment) and adds additional estimators.
16. Only part-time workers and temporary workers are included in non-standard workers when looking at the distribution of hourly wages because of inconsistencies in obtaining the hourly wages of self-employed workers.
17. Main income earner refers to the person who contributes the highest earnings in the household.
18. This may be the results of high-earning self-employed workers at the top of the distribution.
19. Equivalised household earnings are calculated as the sum of household labour earnings (wages and self-employment incomes) from all household members, dividing by the commonly used OECD equivalent scale (i.e. the square root of the household size).
20. Data for Korea could not be included in this section as it does not include information on taxes.
21. Note that the median income is calculated based on the *entire* population, not just the working-age population.
22. It is noteworthy that the poverty rate of SW households in Korea is high (12.4%), compared with other countries. This is because many SW households in Korea actually include a jobless adult member. The number of “pure” SW households – where all adult members are standard workers – is relatively limited in Korea. In 2009, for instance, SW households that have both standard worker and non-workers



accounted for 35% of all working households, while this share is lower in other OECD countries.

23. Simulations for temporary workers cannot currently be incorporated into the tax-benefit models used here.
24. Part-time workers are excluded from eligibility for job seeker's benefit or allowance in Ireland if they have worked less than three days a week; in Japan, if they have worked less than 20 hours per week; and in Korea, if they have worked less than 60 hours per month or 15 hours per week.
25. Simulations use two scenarios regarding the incidence of employer social insurance contributions. In the first scenario, the effective burden of employer contributions is assumed to fall exclusively on the employer. In the second scenario, the burden falls exclusively on the employee, the underlying assumption being that in the long run employers adjust wages in response to the level of employer contributions (see Brittain, 1971; Vroman, 1974; and Beach and Balfour, 1983).
26. See Annex 4.A4 for detailed descriptions of the OECD/EC tax-benefit simulation models and EUROMOD.
27. In Italy, PTRs are very low (3%) since no social assistance benefit is available. See Figure 2.3 in OECD (2007).
28. The indicators of work incentives used here are formally defined in Annex 4.A4.

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## Annex 4.A1

### Measuring job polarisation

The contributions to employment shifts due to the between- and within-sector reallocation of workers can be identified using a simple decomposition approach. Following Tuzemen and Willis (2013), the change in the employment share between any two periods for a particular task group can be decomposed as:  $\frac{E_{i,s,2010}}{E_{2010}} - \frac{E_{i,s,1995}}{E_{1995}} = \frac{E_{i,2010}}{E_{2010}} \left( \frac{E_{i,s,2010}}{E_{i,2010}} - \frac{E_{i,s,1995}}{E_{i,1995}} \right) + \frac{E_{i,s,1995}}{E_{i,1995}} \left( \frac{E_{i,2010}}{E_{2010}} - \frac{E_{i,1995}}{E_{1995}} \right)$ , where  $E$  represents employment,  $i$  represents the industry sector and  $s$  represents the task. Table 4.A1.1 reports the decomposition of changes in the employment share for each of the three task groups. In sum, this exercise reveals that the results are in line with the predictions of the skill-biased/task-biased technological change hypothesis.

**Table 4.A1.1. Decomposition of changes in employment shares by task and sector, EU-23 countries average, 1995/98-2010**

Task	<b>Total</b>	Manufacturing	Construction & electricity	Wholesale & hotels	Transport & communication	Finance & real estate	Public & community	Education & health
<b>Abstract</b>	<b>5.25</b>	-0.95	0.37	0.32	1.98	2.07	0.23	1.23
Between	<b>1.24</b>	-1.87	-0.01	0.06	0.40	1.40	-0.39	1.66
Within	<b>4.01</b>	0.92	0.38	0.27	1.57	0.67	0.62	-0.43
<b>Routine</b>	<b>-8.59</b>	-6.02	-0.46	-0.66	-0.35	-0.28	-0.84	0.02
Between	<b>-3.18</b>	-5.11	-0.05	0.11	0.73	1.11	-0.28	0.30
Within	<b>-5.40</b>	-0.91	-0.41	-0.77	-1.07	-1.39	-0.56	-0.28
<b>Non-routine manual</b>	<b>1.82</b>	-0.45	0.12	0.43	0.18	0.91	-0.41	1.04
Between	<b>1.03</b>	-0.37	0.00	0.04	0.64	0.32	-0.24	0.65
Within	<b>0.79</b>	-0.08	0.13	0.39	-0.45	0.59	-0.17	0.39

*Note:* Abstract occupations (ISCO88: 12-34); Routine (ISCO88: 41-42, 52, 71-74, 81-82 and 93); Non-routine manual (ISCO88: 51 83 and 91). The sample excluded three industries (agriculture, mining and private households) as well as three occupational groups (legislators, armed forces and farm labourers) due to the lack of consistent information over time. The overall sample is restricted to workers aged 15-64, excluding employers as well as students working part-time.

*Source:* European Union Labour Force Survey (EU-LFS).

StatLink  <http://dx.doi.org/10.1787/888933209014>

### Job approach for polarisation

In line with Eurofound (2008, 2012), a job is defined as a particular occupation in a particular industry (e.g. a manager in the hotel sector) using the international standard classification of occupations (ISCO) and the European classification of economic activities (NACE) from the labour force surveys. To measure job quality, each job is assigned a value, based on the occupational median wages, by linking external information on wages estimated from different data sources. Two external data sources were used to estimate median wages for jobs. The main source is the Structure of

Earnings Survey (SES), which provides accurate and harmonised data on earnings in EU member states. It collects information from enterprises with at least ten employees operating in all areas of the economy except public administration (and, in some countries, also the education and health care sectors). At the time of writing, the SES data are available for only two reference years: 2002 and 2006. For sectors not covered by the SES, the median wage is supplemented by data from the European Survey of Income and Living Conditions (EU-SILC).

We then allocate jobs to deciles in each country according to a job-wage ranking for that country, weighted by the total number of employment within the job cell. That is, the bottom job decile would capture 10% of all workers employed in the lowest-paid occupations. Changes in employment share between the periods in each job decile can then be computed to examine whether the employment structure has been polarised over time.

Ideally, we would like a job to be defined in as much detail as possible by using occupation and sector classifications at a two-digit or even finer level. In practice, this may not be feasible as some of the combinations simply do not exist or contain very few observations, especially in the external sources for wage data. Doing this would result in imprecise estimates of wages for many job cells. In this study we use the combinations of occupation at the two-digit level and industry at the one-digit level. This creates a matrix of a very reasonable 338 non-agriculture “jobs” (26 occupational groups \* 13 sectors). In a separate specification we also performed a more detailed level of disaggregation (i.e. 754 jobs = 26 occupations \* 29 sectors). However, due to a smaller sample size of the SES, many occupation/sector combinations either do not exist or result in an imprecise estimate of median hourly wages. We therefore discard such disaggregations, as the ranking of jobs by wage cannot be established.

Labour force surveys (LFS) for three different years – 1995, 2007 and 2010 – are used to construct the level and change in the employment shares in each job decile. Since most LFS do not contain information on earnings (one exception being the Canadian LFS, which collected information on hourly wages), the data is then augmented with the European Union Structure of Earnings Surveys (SES) to obtain median hourly wages for each job defined. Note that the SES is available only since the mid-2000s. This means that the wage-to-job assignments will be the same for each of the three periods under study (1995, 2007 and 2010). By doing this we assume that the *rankings* of jobs by skill (as approximated by median wage) remain similar over time. In fact, previous studies (e.g. Goos and Manning, 2007) have found considerable stability in the occupational earnings structure over time.

## *Annex 4.A2*

### **Data sources for Sections 4.4 and 4.5**

The following longitudinal household surveys are used for the analysis in the first section of the chapter. All longitudinal datasets cover a wide range of subjects, including personality traits, occupational and family biographies, employment, participation and professional mobility, earnings and health.

#### **British Household Panel Survey (BHPS)**

The British Household Panel Survey<sup>1</sup> (BHPS) is a nationally representative household-based yearly survey which began in 1991, interviewing every adult member of the sampled households. The wave 1 of the panel consisted of some 5 500 households and 10 300 individuals. Additional samples of 1 500 households in both Scotland and Wales were added to the main sample in 1999, and in 2001 a sample of 2 000 households was added in Northern Ireland. These same individuals are re-interviewed each successive year and, if they split-off from original households to form new households, they are followed and all adult members of these households are also interviewed.

#### **EU Statistics on Income and Living Conditions (EU-SILC)**

The European Union Statistics on Income and Living Conditions (EU-SILC) instrument has collected annual data for 27 European Union countries, Croatia, Iceland, Norway, Switzerland and Turkey since 2004 on a cross-sectional and longitudinal basis, rotating every four years, for 130 000 households. Variables include information on income, poverty, social exclusion and other living conditions. The EU-SILC does not rely on a common questionnaire or a survey but on common guidelines and procedures, and common concepts (household and income) and classifications aimed at maximising the comparability of the information produced.

#### **German Socio-Economic Panel (GSOEP)**

The German Socio-Economic Panel (GSOEP) is an on-going household-based yearly survey which began in 1984. The first wave consisted of 5 921 households containing a total of 12 290 individual respondents who participated in “SOEP West”, containing only West Germany. In 1990, 2 179 households with 4 453 members were surveyed for the “SOEP East” sample.

#### **Household, Income, Labour Dynamics in Australia (HILDA)**

Household, Income, Labour Dynamics in Australia (HILDA) is an ongoing household-based panel survey funded by the Department of Families, Community Services and Indigenous Affairs. The survey started in 2001 and contains at the moment seven waves. The wave 1 of the panel consisted of 7 682 households and 19 914 individuals.

### **Korean Labor and Income Panel Study (KLIPS)**

The Korean Labor and Income Panel Study (KLIPS) is an ongoing household survey which has been conducted annually since 1998 and consists of 5 000 households and 13 000 individuals.

### **Japan Household Panel Survey (JHPS)**

The Japan Household Panel Survey (JHPS) is a panel survey of around 4 000 households conducted by the Panel Data Research Center at Keio University. The first survey was conducted in 2009 and is carried out annually. The survey topics include household composition, income, expenditure, assets, and housing in addition to school attendance, employment, and health conditions of respondents.

We are very grateful to Professor Yoshio Higuchi and Associate Professor Kayoko Ishii from Keio University for providing the OECD Secretariat with the analysis from the JHPS and their expert advice.

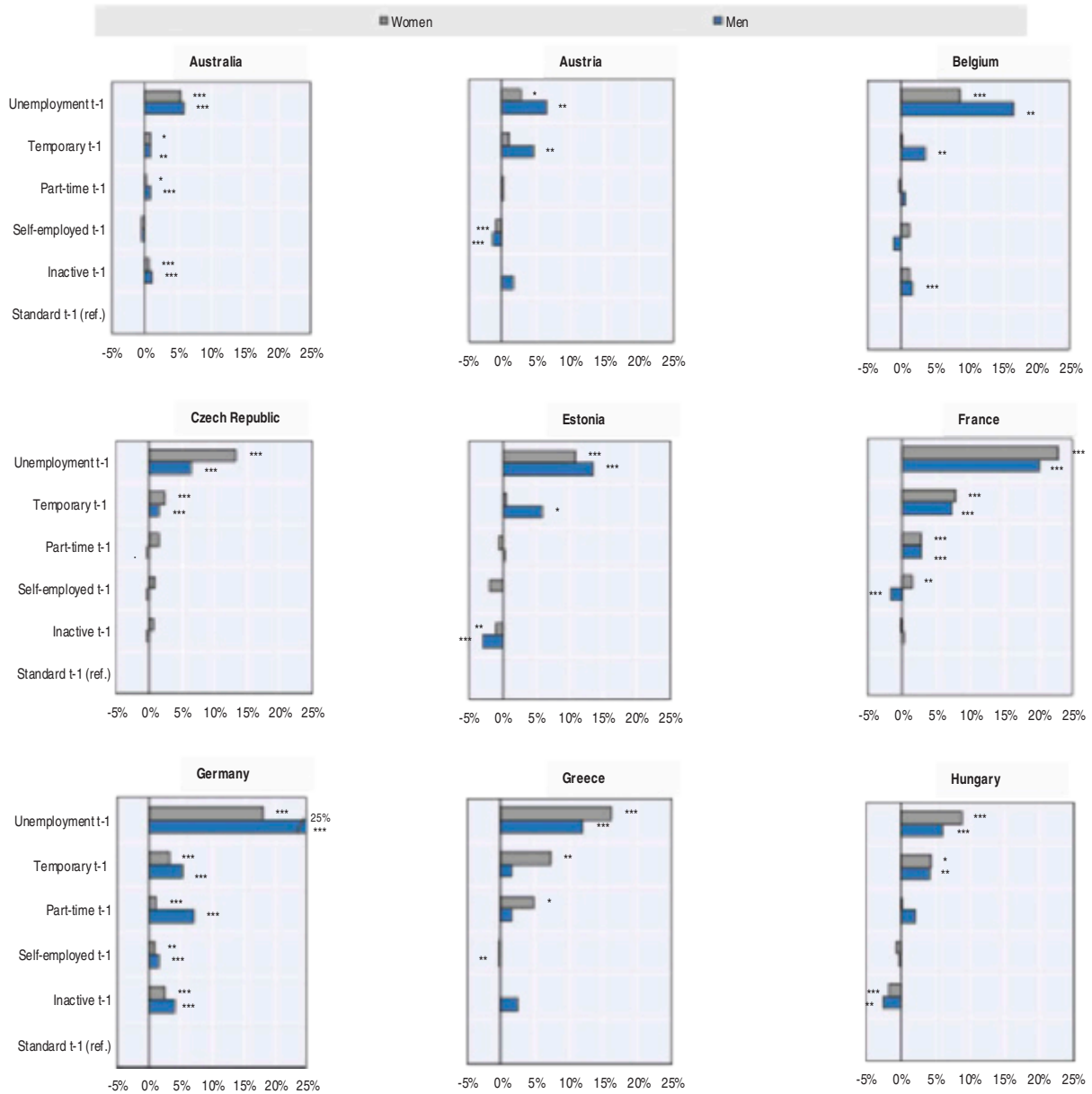
### **Note**

1. The BHPS was obtained through the UK data archive ([www.data-archive.uk](http://www.data-archive.uk)).

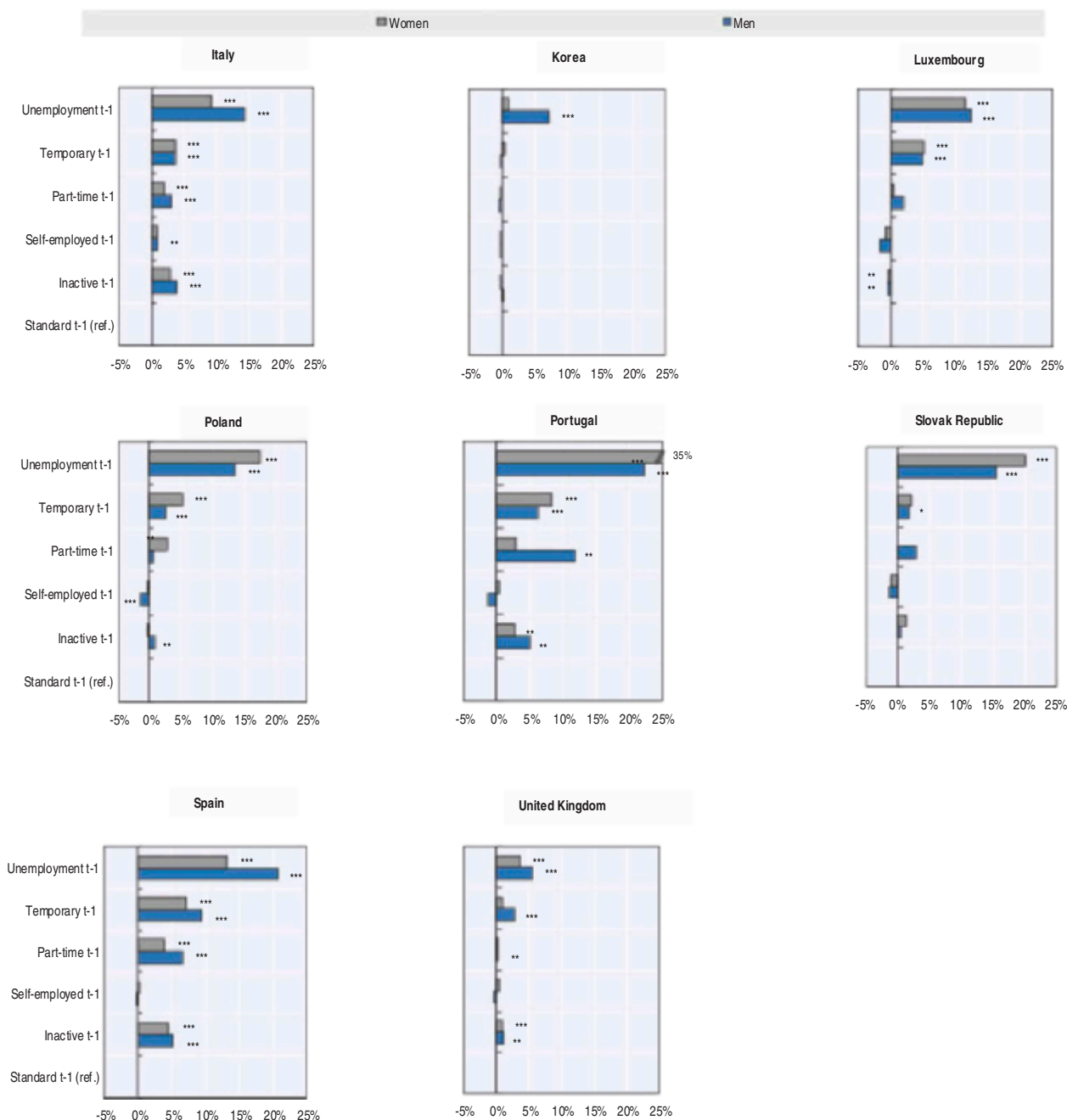


## Annex 4.A3 Additional tables and figures

**Figure 4.A3.1. The marginal effect of previous labour force/contract status on the probability of transition to unemployment**



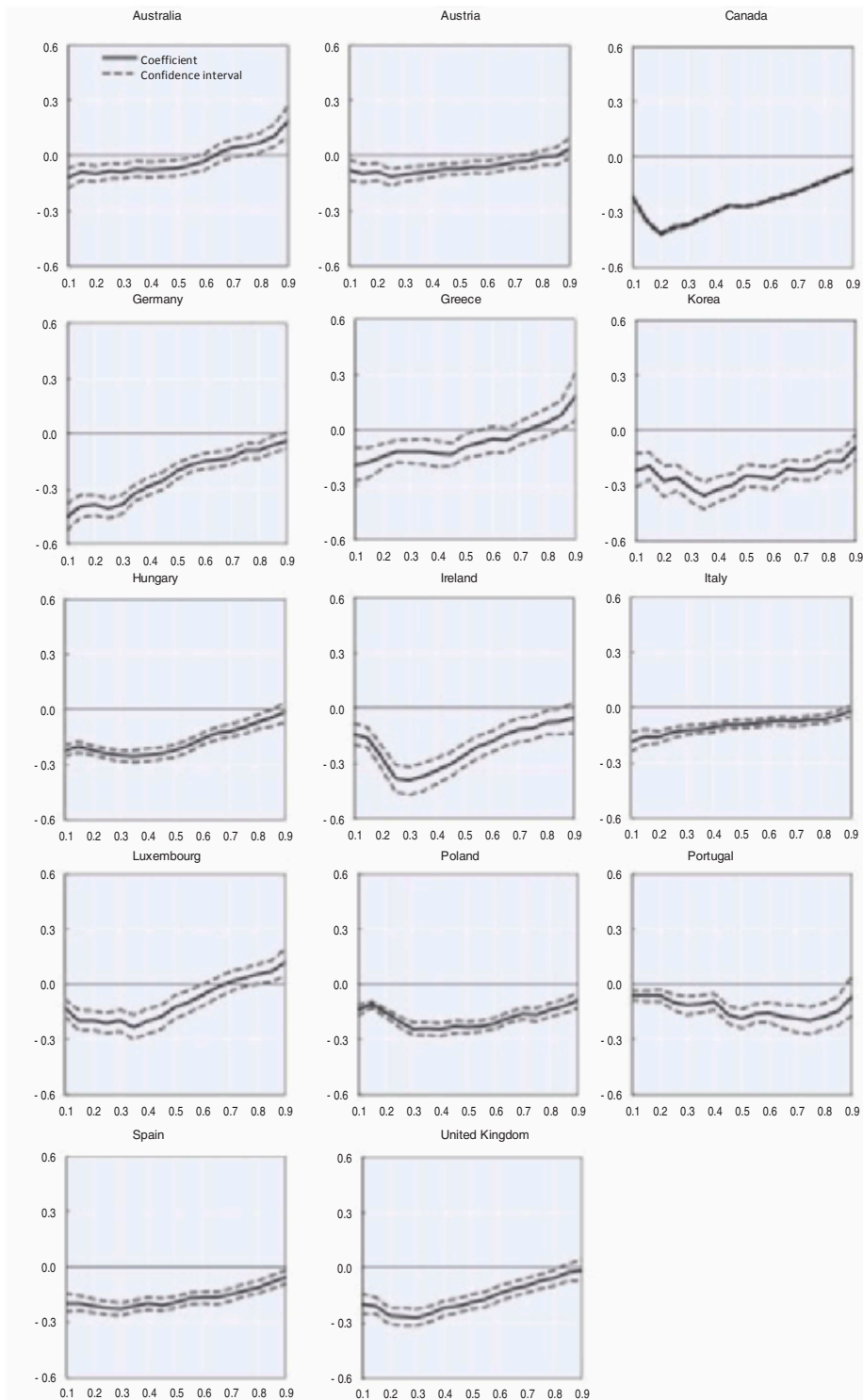
**Figure 4.A3.1. The marginal effect of previous labour force/contract status on the probability of transition to unemployment (cont.)**



*Note:*

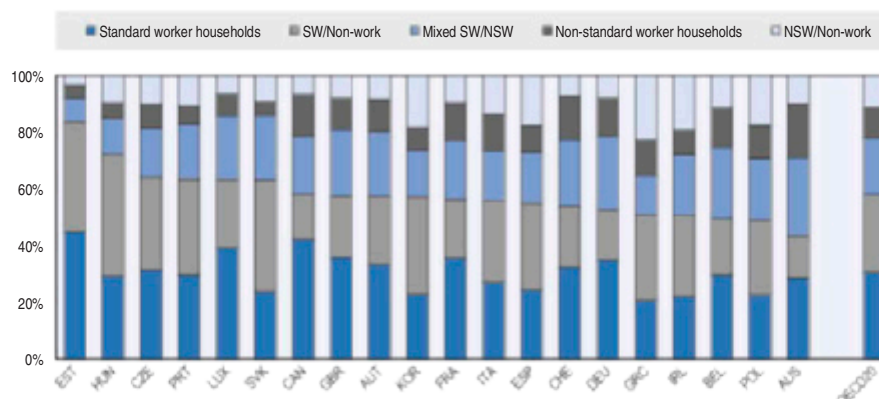
Marginal effects from lagged employment status on the probability of unemployment based on a random effects dynamic probit, controlling for initial conditions. See Figure 4.11 for sample and controls. \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% levels, respectively.

*Source:* British Household Panel Survey (BHPS, 2004-2009) for the United Kingdom, German Socio-Economic Panel (GSOEP, 2004-2012) for Germany, European Union Statistics on Income and Living Conditions (EU-SILC, 2004-2012) for other European countries, Household, Income and Labour Dynamics in Australia (HILDA, 2004-2012) for Australia, Korean Labor & Income Panel Study (KLIPS, 2004-2009) for Korea.

**Figure 4.A3.2. Effect of non-standard work on log hourly wages, by decile**

*Source:* Calculations based on European Union Statistics on Income and Living Conditions (EU-SILC, 2012), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009), Labour Force Survey (LFS, 2013) for Canada.

StatLink  <http://dx.doi.org/10.1787/888933208298>

**Figure 4.A3.3. Household work patterns by standard work/non-standard employment, working households, 2010 or most recent year**

*Note:* Standard work (Non-standard work) refers to households with all workers in standard (non-standard) employment; SW/Non-work (NSW/Non-work) refers to households with the presence of both a standard (non-standard) worker and non-worker; SW/NSW refers to households with both standard and non-standard workers. Countries are ranked by increasing shares of households with at least one NSW.

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012), Household, Income and Labour Dynamics in Australia (HILDA, 2012), Korean Labor & Income Panel Study (KLIPS, 2009), Survey of Labour and Income Dynamics (SLID, 2010).

StatLink <http://dx.doi.org/10.1787/888933208303>

**Table 4.A3.1. Household income components by household work pattern, pooled 15 EU countries, 2010**

Household work pattern	Income component, in EUR (share)				Number of non-workers	
	Earnings	Capital	Pub. transfers	Taxes	Number of kids ≤ 17	Number of adult non-workers
Jobless	5 053 (.31)	1 386 (.1)	8 732 (.71)	-2 138 (-.12)	0.37	1.54
Standard work only <sup>1</sup>	30 350 (1.22)	801 (.03)	1 833 (.1)	-9 115 (-.35)	0.57	0.58
Non-standard work only <sup>1</sup>	17 009 (.94)	1 259 (.05)	3 688 (.24)	-5 062 (-.23)	0.66	0.66
SW/NSW <sup>1</sup>	31 680 (1.22)	937 (.03)	1 836 (.08)	-9 158 (-.33)	0.83	0.41
Total	23 063 (.99)	1 026 (.05)	3 554 (.24)	-6 980 (-.28)	0.59	0.76

*Note:* Working-age households.

1. May include non-workers.

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2012).

StatLink <http://dx.doi.org/10.1787/888933209023>

**Table 4.A3.2. Impact on Gini by income source**

	Sk	Gk	Rk	$g * r$	Contrib. $s * g * r$	% contrib. $s * g * r / G$
Earnings of standard work households	0.789	0.554	0.751	0.416	0.327	1.050
Earnings of non-standard work households	0.211	0.799	0.336	0.267	0.057	0.179
Earnings of non-working households	0.093	0.897	0.326	0.293	0.028	0.089
Investment	0.043	0.892	0.370	0.327	0.017	0.049
Government transfers	0.165	0.683	-0.043	-0.023	0.000	0.000
Taxes	-0.302	-0.500	-0.811	0.407	-0.123	-0.377
Total income		0.308			0.308	1.000

*Source:* European Union Statistics on Income and Living Conditions (EU-SILC, 2010), Household, Income and Labour Dynamics in Australia (HILDA, 2010), Korean Labor & Income Panel Study (KLIPS, 2008).

StatLink <http://dx.doi.org/10.1787/888933209038>

## *Annex 4.A4*

### **Tax-benefit simulations**

#### **The OECD tax-benefit models**

The aim of the OECD tax-benefit model project is to examine the effects of tax and benefit systems on families. This is a long-standing activity in the Social Policy Division of the Employment, Labour and Social Affairs Directorate. The results from this work are widely used within the OECD, as well as by many external users including other international organisations, academic researchers and national institutions that monitor developments in social and fiscal policy. The model currently contains more than a decade of information (2001-12) on the tax and benefit systems in place across 33 OECD countries, plus an additional six EU non-OECD countries. Benefits covered in the model include unemployment benefits, social assistance schemes, housing benefits, family benefits and employment conditional benefits. The tax system covers personal income taxes and social security contributions paid by employers and employees.

Using the tax-benefit model, the OECD produces regular updates for a number of key indicators. This includes measures of work incentives, benefit generosity and income adequacy. The results are presented in a standardised format to facilitate comparisons across countries and over time. They capture the effects of taxes and benefits on the incomes of working-age individuals and their families both in and out of work.

Recent work relying on the results of the tax-benefit model include analyses of activation policies and work incentives, benefit adequacy, trends in government redistribution and inequality, barriers to female employment, and countries' policy responses to the recent economic downturn (see [www.oecd.org/social/benefits-and-wages.htm](http://www.oecd.org/social/benefits-and-wages.htm) for further details).

#### **EUROMOD**

The aim of EUROMOD is to estimate the effects of taxes (national and local income taxes), social contributions (paid by employees, employers and self-employed) and benefits (social assistance, family, housing and other income-related benefits) on household incomes and work incentives for each country of the European Union. While this is used in calculating the effects of existing policies, it is also used to evaluate the effects of tax-benefit policy reforms and other changes on poverty, inequality, incentives and government budgets. EUROMOD cannot take into account the numerous changes occurring in the structure of the population or in the labour market but it can capture changes in the average levels of market incomes and in tax-benefit policies (see [www.iser.essex.ac.uk/euromod/resources-for-euromod-users/country-reports](http://www.iser.essex.ac.uk/euromod/resources-for-euromod-users/country-reports) for further country-specific details).



## Family types

In the present chapter, results are computed for a set of four typical single-earner families plus the simple average of these families. The standard family types are: single adult living alone, single-earner couple without children, single parent with two children and single-earner couple with two children.

## Measures of work incentives

*Participation tax rate* (PTR) is the proportion of earnings that are “taken away” due to the combined effect of higher taxes and/or lower benefits when an individual moves from inactivity or unemployment into work. It is defined in a similar way as the effective marginal tax rate (EMTR):

$$PTR = 1 - \frac{\Delta y_{net}}{\Delta y_{gross}} = 1 - \frac{y_{net IW} - y_{net OW}}{y_{gross IW}}$$

where IW stands for in-work and OW stands for out-of-work,  $\Delta y_{gross} = y_{gross IW} - y_{gross OW}$  and  $y_{gross OW} = 0$ .

High levels of PTR indicate that a large share of earnings are “taken away” and therefore are associated with small work incentives.

*Transition tax rate* (TTR) is the proportion of earnings that are “taken away” due to the combined effect of higher taxes and/or lower benefits when an individual moves from part-time work into full-time work:

$$TTR = 1 - \frac{\Delta y_{net}}{\Delta y_{gross}} = 1 - \frac{y_{net FT} - y_{net PT}}{y_{gross FT} - y_{gross PT}}$$

where FT stands for full-time work and PT stands for part-time work.

High levels of TTR indicate that a large share of the earnings increase is “taken away” and therefore are associated with small work incentives.



**From:**  
**In It Together: Why Less Inequality Benefits All**

**Access the complete publication at:**  
<https://doi.org/10.1787/9789264235120-en>

**Please cite this chapter as:**

OECD (2015), “Non-standard work, job polarisation and inequality”, in *In It Together: Why Less Inequality Benefits All*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264235120-7-en>

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