4 The rise of domestic outsourcing and its implications for low-pay occupations

An increasing share of workers in OECD countries are legally employed by one firm but in practice work for another. Cleaners, security guards and cafeteria staff are examples of occupations where workers often physically work on the premises of one firm, but their legal employer is a third-party support services firm. Such third-party employment relationships are often referred to as "domestic outsourcing" or "market-mediated work arrangements". This chapter focuses on documenting the nature, trends in, as well as the consequences of, domestic outsourcing for productivity, employment and job quality, focusing especially on some low-wage occupations. The chapter provides examples of different forms of domestic outsourcing before measuring its prevalence across OECD countries. It then shows the potential impact of the COVID-19 crisis. The chapter concludes by highlighting some of the implications of domestic outsourcing for job quality and inequality, and discusses some policy responses.

In Brief

Key findings

An increasing share of workers in OECD countries are legally employed by one firm but in practice work for another. For example, cleaners, security guards and cafeteria staff often physically work on the premises of one firm, but their legal employer is a third-party support services firm. This is also the case for most temporary work agency jobs, and a sizeable share of the self-employed without employees. For these workers, the firm that supervises and monitors their work is not the same as the firm with which they have an employment contract.

Such third-party employment relationships are often referred to as "domestic outsourcing" or "market-mediated work arrangements". The concept encompasses the contracting out of work from a lead firm to a contracting firm (including one-person firms), for which the lead firm has a continuing need. The lead firm supervises or monitors the workers in these arrangements, but the third-party contracting firm is their legal employer.

Domestic outsourcing may bring advantages, but it may also come with risks. For example, the lead firm may be able to take advantage of higher productivity or cost savings from contracting out services to other firms. This could bring productivity gains and higher earnings for workers remaining in the lead firm. However, there is also a risk that workers whose jobs are outsourced end up having lower pay and inferior working conditions. Whether one is employed directly by a lead firm or by a third-party contracting firm may also matter for job quality: certain employers pay more, provide better non-pecuniary benefits and provide more job security. The rise in domestic outsourcing, therefore, may have important implications for overall inequality and well-being.

This chapter analyses the nature and development of domestic outsourcing and its consequences for productivity, employment and job quality, focusing especially on low-wage occupations. The chapter provides examples of the different forms that outsourcing can take, and reviews the literature on why firms make use of domestic outsourcing. It then turns to measures of domestic outsourcing to track its prevalence across OECD countries, before examining the potential impact of the COVID-19 crisis. The chapter concludes by highlighting some of the implications of domestic outsourcing for job quality and inequality, and by discussing some policy responses.

The key findings are:

- Measuring firm-to-firm outsourcing and sub-contracting is challenging. However, the chapter identifies three common features that typically characterise a domestic outsourcing arrangement between a lead firm and a third-party contracting firm: the lead firm has a **continuing** need for primarily **labour** services provided by the contractor firm, and the lead firm exerts significant **supervision or control** without being the legal employer.

- The available evidence suggests that domestic outsourcing, as measured by firm-to-firm contracting of services, is on the rise in many OECD countries. Employment has grown substantially in the administrative and support services industry, which primarily provides general business support services to other firms. Examples include cleaning and security services, temporary agency employment, call centres and back-office support operations such as mailrooms.

- From 1995 to 2018, the share of total employment in administrative and support services, which typically include many domestic outsourcing activities, increased from 3.6% to 6.3% in OECD countries. This is faster than overall service employment growth.

- Across OECD countries, cleaners and guards are increasingly concentrated in the administrative and support services industry, which can be interpreted as evidence of an increase in domestic outsourcing for these occupations. While firms in every industry employ cleaners and security guards, those employed in the administrative and support services industry are very likely to be working in outsourced jobs.

- On average across OECD countries, the share of guards working in the administrative and support services industry increased from 38% to 54% between 1995 and 2019, while the share of cleaners employed in this industry increased from 16% to 31% over the same period.

- Although cleaners and security guards represent a small share of overall domestic outsourcing, it is nonetheless useful to look at these occupations in detail because they can be measured accurately and are comparable between countries. Outsourcing is not limited to these occupations, however, and results for these occupations may not hold for other outsourced occupations. The literature finds similar outsourcing arrangements for cafeteria workers, truck and forklift drivers, and logistics occupations such as warehouse workers.

- Although it is too soon to draw definitive conclusions, there is some indication that, in certain countries and occupations, the share of jobs that are outsourced increased in the immediate aftermath of the COVID-19 crisis. When this occurred, it was usually not because the number of outsourced jobs grew, but because the number of in-house jobs fell more than the number of outsourced ones. However, at the end of 2020, the outsourced and in-house sectors of both guards and cleaners had contracted in a similar way. Overall, the employment of administrative and support services has contracted more than that of the whole private sector during the crisis.

- In the case of low-pay occupations, there is evidence that domestic outsourcing often leads to worse job quality for the workers concerned. This chapter finds that cleaners and guards employed by third-party contracting firms tend to earn less than those whose jobs are in-house. This suggests that domestic outsourcing may be an important contributor to inequality in the labour market.

- The effects of outsourcing on the non-wage aspects of job quality for guards and cleaners are mixed. Cleaners and guards employed by third-party contracting firms are more likely to work part-time and less likely to train, but they are more likely to be employed on an open-ended contract.

- Policy makers may wish to consider policies aimed at preserving the positive aspects of outsourcing while improving the job quality for affected workers. These include policies that confer employer responsibilities on both lead and third-party contracting firms and ensure that outsourced jobs do not fall under a less advantageous collective bargaining agreement (or under no agreement at all). Finally, labour law could allow those in outsourced jobs access to internal training and employment opportunities at lead firms.

Introduction

The COVID-19 crisis has demonstrated the precarious labour market position of many workers across OECD countries – particularly those in non-standard employment relationships. While many firms, often with help from governments, took measures to protect their employees, some workers found that this protection only applied to dependent employees of the firm, and not to sub-contractors or own-account workers, even though they might have been working at the same physical address. This was often the case with cleaners sub-contracted to work in government offices, and security guards in supermarkets, for example.[1] Indeed, many sub-contractors and own-account workers found that they did not enjoy the same levels of job security, workplace health standards and overall job quality as dependent employees whom they worked alongside. However, many OECD governments provided more emergency support to own-account and other less protected workers than in previous crises (OECD, 2020[1]).

The focus of this chapter is on this disconnect between the legal employers of workers and the firms for whom they ostensibly work. Often referred to as "domestic outsourcing", the concept encompasses the contracting out of a continuing labour need from a lead firm to a contracting firm. Examples include cafeteria workers, cleaners and guards provided through an administrative and support services firm. They are the colleagues one sees every day, but who wear a different colour badge. Similarly, most temporary agency work is a form of domestic outsourcing. Firms may also hire the self-employed as a separate legal entity rather than a dependent employee. What binds these arrangements is a legal contract between firms to meet a continuing labour demand, which replaces the direct contractual agreement between a firm and a worker as a dependent employee.

Domestic outsourcing in its various guises is not new. Temporary work agencies have existed since the beginning of the 20th century. They were initially banned in many European countries due to fears that they exploited workers (Houseman, 2014[2]), but they have now become one of the most regulated aspects of domestic outsourcing, from which lessons could be drawn for regulating domestic outsourcing more generally. Researchers have been documenting the rise of firm-to-firm domestic service outsourcing in the United States since at least the late 1980s, as firms began to use employment agencies to contract out work that was traditionally performed in-house. Franchising, a ubiquitous business format in the fast food industry, has been around since at least the 1960s (Callaci, 2018[3]) in the United States, and can now be observed in many other OECD countries. And some of the world's largest companies now exist solely to lease workers to other firms, to manage their cafeterias, staff their mailrooms or run their warehouses, for example (Weber, 2017[4]).

Although domestic outsourcing has a long history, certain aspects have received relatively little interest from researchers and policy makers. Productivity, for example, could increase when firms decide to contract with a third-party firm to meet their labour demand. This has the potential to increase earnings and employment in the lead firm, and possibly employment overall. However, the effects of domestic outsourcing on productivity still need to be confirmed empirically, and are an open question for researchers and policy makers. What little is known about the effects of domestic outsourcing on workers and the economy is confined either to specific forms of outsourcing (e.g. temporary work agency employment, own-account work) or to a limited set of countries.[2]

Recent research, however, shows that domestic outsourcing is a growing phenomenon which often results in lower wages and rising inequality, particularly in the case of low-wage occupations (Bilal and Lhuillier, 2020[5]; Dube and Kaplan, 2010[6]; Goldschmidt and Schmieder, 2017[7]). Similarly, franchising has been shown to lead to lower wages and a higher incidence of labour law violations (Freedman and Kosová, 2014[8]; Ji and Weil, 2015[9]; Krueger, 1991[10]). Evidence on temporary work agency employment is more mixed, as it is sometimes found to offer a stepping stone into larger firms (Autor, 2001[11]; Jahn and Rosholm, 2014[12]), but possibly also lower wages (Drenik et al., 2020[13]). Weil, (2014[14]) argues that domestic outsourcing is resulting in a "fissuring of the workplace" with firms employing workers core to their central business while contracting out the rest of their labour requirements to third-party firms.

This chapter presents new research on firm-to-firm outsourcing of primarily low-paid occupations. The reasons for focusing on low-paid occupations include data availability and comparability across countries. Domestic outsourcing may also have particularly negative consequences for these occupations, which could have implications for overall inequality. The chapter focuses on the rise in firm-to-firm outsourcing across OECD countries, the reasons why firms make use of such outsourcing, and its effects on job quality as well as its implications for productivity. The analysis will also show how domestic outsourcing relates to previous OECD work on temporary work agency employment (OECD, 2002[15]; OECD, 2013[16]; OECD, 2020[17]), and more recent work on some parts of the gig economy and the increasing use of own-account work (OECD, 2019[18]).

The chapter aims to fill some of the knowledge gaps on the cross-country scope of domestic outsourcing. First, it defines and measures the incidence of domestic outsourcing in OECD countries. It then offers a framework for understanding phenomena such as sub-contracting, temporary agency work, franchising and own-account work (Section 4.1). After defining and tracing the rise of domestic outsourcing, the chapter assesses how occupations and industries in which outsourcing is widely used have fared during the COVID-19 crisis (Section 4.2). The chapter then assesses some of the consequences of outsourcing for productivity, earnings, job quality and inequality (Section 4.3), before concluding with some remarks on how various policies may affect the incidence and consequences of outsourcing (Section 4.4).

4.1. Domestic outsourcing: What and why?

This section defines domestic outsourcing and documents its incidence across OECD countries as well as over time. First, the section gives a broad definition of domestic outsourcing encompassing the various forms reviewed in this chapter. The section then reviews the reasons why firms choose to outsource. Finally, the section documents the rise of outsourcing across countries. This will rely on aggregate data sources to build a broad overview of outsourcing industries before turning to labour force surveys to more precisely estimate the nature and scale of domestic outsourcing in some very specific occupations that are especially prone to outsourcing (cleaners and guards).

4.1.1. Defining domestic outsourcing

Domestic outsourcing concerns the boundaries of the firm and the choice of a lead firm to contract with a firm (or an individual) to provide (primarily) labour as an input to production in the lead firm. The concept is sometimes referred to as "market-mediated work arrangements" (Abraham and Taylor, 1996[19]). This definition, and indeed this chapter, focuses on primarily labour services. In the literature, domestic outsourcing is sometimes defined more generally to include any intermediate input to production, including goods (Bartel, Lach and Sicherman, 2012[20]; Bernhardt et al., 2016[21]; Weil, 2014[14]).

This definition includes work traditionally performed within the boundaries of the firm, as well as new activities firms have outsourced from their founding. The exact definition of domestic outsourcing is difficult to provide, as firms have always contracted with other firms for goods and services. This chapter defines domestic outsourcing with three main characteristics. Not all three features need be present simultaneously, but the existence of one or more is a good indication that the market-mediated work arrangement might be a form of domestic outsourcing.

The first feature of domestic outsourcing is *control*. This chapter focuses primarily on situations where workers are physically present on the premises of the lead firm. This allows the lead firm to at least monitor, if not supervise, the workers in the outsourced jobs. A lead firm would be unlikely to directly supervise its office cleaners, for example, but their work would be easy to monitor. The close proximity also reinforces the idea that the lead firm could just as easily employ these workers themselves.

Employment on the physical premises of the lead firm is not necessary for a lead firm to retain control. Franchised establishments, for example, are physically (and legally, see Box 4.1) separate entities from a lead firm, but in most cases the franchisor retains almost total control of the business operations. Another example concerns the choice of an online retailer to outsource its domestic warehousing workforce to a logistics firm. These workers would be considered outsourced. In this case, the lead firm likely retains tight control over the operation and may own the warehouse itself. The decision to outsource the labour provided by a third-party contracting firm may, therefore, benefit from economies of scale and the greater productivity offered by a specialised secondary firm (see Section 4.1.2). This chapter will limit the geographic proximity between lead and secondary firms to arrangements within national borders.[3]

The second feature of domestic outsourcing is that it tends to constitute a *continuing need for labour* fulfilled by the third-party contracting firm. This element excludes one-off arrangements aimed at filling a temporary need, and distinguishes these from situations where a lead firm replaces a continuing labour demand with an outside relationship on a more permanent basis. Examples of situations that are not domestic outsourcing might include a lead firm contracting an architect on a one-off basis to design a new building, or hiring a travel agency for sporadic travel arrangements. Temporary agency work seems as if it too would be excluded from domestic outsourcing (see further discussion below) as workers supplied by the agency may only have temporary spells at the lead firm. However, if the lead firm contracts with the temporary agency for a continuing labour demand, the relationship is more akin to outsourcing.

The third feature of the concept of domestic outsourcing adopted in this chapter is that the input is primarily *labour* rather than goods or other services. This isolates the concept from the make-or-buy decision of firms, and focuses on the lead firm's decision to hire labour directly or contract through a secondary firm.[4] A secondary firm providing security guards to work on the premises of a lead firm is an example of primarily labour services. The secondary firm is not producing a good, nor providing substantial capital to the labour input.

The rest of this section concretely defines the various forms of domestic outsourcing. The first is firm-to-firm contracting out of services, which constitutes the focus of this chapter. The section then moves to temporary agency work, and own-account self-employment.

Firm-to-firm outsourcing of services

The classic examples of domestic outsourcing concern low-wage work, which is complementary to the core function of the firm, such as cleaning, cafeteria and security services. Workers in these support functions perform labour within the physical boundaries of a lead firm on a regular and ongoing basis, but a secondary firm is often their legal employer. The lead firm is able to monitor their work, if not directly supervise and direct their tasks. Crucially, the lead firm chooses to contract with a secondary firm to provide these services instead of employing the workers directly in-house, as many companies did in the past. Thirty years prior, it was not uncommon for large firms to employ these occupations in-house, and many continue to do so today.[5]

Domestic outsourcing is not limited to support occupations. In certain industries, lead firms use secondary firms to provide labour for their core activities. Examples include housekeepers in hotels and cooks in restaurants. Franchising is also pervasive in these industries (hotels and limited-service restaurants). Business format franchising can be a form of outsourcing because although for all intents and purposes employees of franchisees work in an establishment identical to those run by a lead firm, the employees are legally employed by an often small, independent proprietor (see Box 4.1).

> ### Box 4.1. Franchising: A little-explored form of domestic outsourcing
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> Franchising is a business model which may fall under domestic outsourcing. Franchising usually manifests itself in one of two forms, though in practice the line between the two can be fuzzy. The first form, "traditional franchising", involves an upstream manufacturer who contracts with many independent firms to sell their product. For example, petroleum companies often contract with independent petrol stations to sell petrol to consumers. The independently owned petrol stations operate under the petroleum firm's brand and exclusively sell their petroleum products, but they often sell other goods and services as well. Traditional franchising generally involves a contract to sell goods with the manufacturer, and there is often minimal control over how the business is run. Traditional franchising, therefore, would not meet the definition of domestic outsourcing offered in this chapter (see above).
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> The second form of franchising, "business format franchising", usually adheres to the definition presented in this chapter. Popular in the fast food and hotel industries, business format franchising consists of a lead firm (the franchisor) signing long-term contracts with many smaller independent firms (franchisees) to run the core business of the lead firm. The franchisor licenses the brand and may supply the product, while specifying almost all the details of how to run the business (the business format) by contract. Through point-of-sale technology, cameras and inspections from representatives, the franchisor is able to monitor the operations of franchisees closely. The franchisees (secondary firm) are legally independent firms with limited discretion concerning the management of the operations.
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> These franchising agreements often give the franchisor almost total control over how the franchisee must run their establishment. The layout of the establishment, operations and maintenance are almost completely stipulated in the franchising agreement. In some cases, the franchisor even owns the physical establishment and the franchisee must pay rent to the franchisor.
>
> The main exception is the hiring and compensation schedules of workers within the franchisees, which are usually left to the owners and managers to specify. The franchisor's control over workers in franchised establishments is more nebulous, though legally the franchisee is considered the formal employer (Griffith, 2019[22]). Employees of franchisees could be employed by the franchisor in a vertically integrated firm. In some market segments it is not uncommon to see some franchisors rely almost completely on franchisees, while other firms run their establishments almost completely as a vertically integrated business. In practice, almost all franchisors choose to run some percentage of establishments themselves (Lafontaine and Slade, 2007[23]).
>
> It is difficult to provide convincing estimates for the prevalence of franchising. Statistical agencies do not often inquire whether an establishment is affiliated with a franchise brand, or whether an establishment is a franchisee or a franchisor. One exception comes from the United States. Every five years, the U.S. Census Bureau conducts a census of establishments, and starting in 2007, this economic census began asking establishments whether they are operating under a franchise brand. In 2012, the last year for which data is available, over 60% of employment in fast-food and slightly less than 40% of employment in hotels was with a franchisee in the United States (U.S. Census Bureau, 2016[24]).

In some instances, domestic outsourcing touches on the core functions of a higher-paid workforce. Examples include government outsourcing of social care or employment services (OECD, 2017[25]), and hospitals' use of staffing firms for doctors (Cooper, Scott Morton and Shekita, 2020[26]). Even large, high value-added technology companies, for example, employ contractors through secondary staffing firms including in key software development roles. These workers are usually physically located on the premises of the lead firm and work side-by-side with regular employees. However, they generally earn less, receive fewer benefits, and do not have access to internal labour markets (Wakabayashi, 2019[27]).[6]

Most temporary agency work fits the definition of outsourcing

The use of temporary work agencies (TWA) can also fall within the confines of domestic outsourcing. Temporary work agencies have existed for decades, and many OECD governments allow and regulate the use of TWA employment. However, regulations vary between countries (OECD, 2020[17]; OECD, 2014[28]).

With TWA work, there is no ambiguity about supervision or control of the employee between the lead and contracting firm. In a TWA relationship, a contracting firm (the temporary work agency), with whom a worker has an employment contract, places the worker at the disposal of another firm (the lead firm) to perform work under the lead firm's supervision.[7] TWA working arrangements, therefore, easily meet two of the three characteristics of domestic outsourcing presented in this chapter: primarily labour services, and the lead firm's exercise of control.

TWA arrangements will often meet the definition of domestic outsourcing even if the length of the assignment of the TWA worker to the lead firm has a fixed, short, duration. In theory, temporary work agencies provide workers to a lead firm while the firm has a temporary vacancy, often due to uncertain or cyclical staffing needs. Many OECD countries restrict the amount of time a worker can be placed within a lead firm, though others do not. In the latter group, the tenure of agency workers placed at a lead firm can last several years (OECD, 2020[17]). In the former group, lead firms may use a sequence of fixed-term assignments of different workers on the same, permanent position. In practice, the boundary between what is temporary and ongoing is open for interpretation.

The definition in this chapter focuses on the continuity of the labour need of the lead firm and not the length of employment contract. For example, if a firm replaces a worker fulfilling a core and continuing labour need of the firm with a TWA replacement while the worker is on parental leave, this would constitute domestic outsourcing. The need for outside labour is temporary, but the labour function is continuing. The lead firm needs to replace the missing worker, and they could have hired the replacement directly on a temporary contract. In contrast, a technology firm hiring a worker to paint a wall would not meet the definition of outsourcing. The technology firm is unlikely to have a continuing need for painting services.

TWA employment is a unique form of domestic outsourcing because it is often heavily regulated in many OECD countries. Half of OECD countries place restrictions on the occupations and industries that may use TWA contracts (Turkey bands them entirely) – see OECD (2014[28]). Some countries also place restrictions on the contract duration and/or the number of contract renewals between a worker and the lead firm. Finally, some countries stipulate that pay and benefits for TWA workers should be maintained to the levels of the lead firm (OECD, 2013[16]). In sum, many of the components of domestic outsourcing are present in TWA employment, and some OECD governments have decided long ago to regulate its use. Temporary agency work, therefore, may even serve as a model for regulating other areas of domestic outsourcing (Section 4.4).

Own-account work often falls into a grey area

A firm's use of own-account workers is another arrangement that could fall under domestic outsourcing. When a firm hires a self-employed worker to meet a continuing labour demand, and the firm supervises or monitors the worker, this would be domestic outsourcing. The definition offered in this chapter, therefore, accommodates certain types of self-employment.

Self-employment that meets this chapter's definition of outsourcing may even be cases of "false self-employment" or fall in a "grey zone" between dependent and self-employment. False self-employment refers to situations where the worker is hired as self-employed, but when one looks at the reality of the working relationship, the individual really should be classified as an employee. The use of self-employment arrangements in such cases could be a mistake, but is often related to an attempt to avoid taxes and/or labour regulations (OECD, 2019[29]). Workers in a "grey zone" are workers who, while classified as self-employed in practice, exhibit some characteristics of both employees and the self-employed. One example

are the financially dependent self-employed. These workers are self-employed, but they depend for the majority of their earnings on a single client or employer.

The correct classification of workers is an important issue that has risen to the fore of the policy discussion in many OECD countries as a result of the rise in the platform economy. It is an issue that goes beyond the platform economy, however. In general, employees have more rights and protections than self-employed workers (OECD, 2019[30]). When firms (mis)classify workers as self-employed, the workers often miss out on rights and protections to which they are legally entitled. Most countries have criteria for classifying workers correctly and have measures in place for tackling false self-employment (OECD, 2019[29]). The exact relationship between domestic outsourcing, on the one hand, and false self-employment and the "grey zone", on the other, remains a topic for future research. However, the same motivations that are behind the rise in domestic outsourcing could also be behind the rise in false self-employment and the number of workers in the "grey zone".

4.1.2. Why do firms outsource work?

The previous section defined the various forms domestic outsourcing can take. This section lays out why firms would choose to hire employees through a separate firm rather than employing them directly. The focus of this section falls into two main categories: increasing productivity and greater flexibility, which secondary firms may offer, and reducing labour costs.

Productivity, flexibility, and employer learning

Firms may use outsourcing to take advantage of economies of scale and the expertise of the contracting firm. Firms may be too small to efficiently employ a cleaner or cafeteria worker on a continuing basis. Even larger firms, who have demand for numerous employees in support roles, may not need much more than basic services, and more complicated problems would require outside support anyway. For example, a firm may be able to gainfully employ a small IT department, but the work force may not have the expertise to handle more difficult problems. Likewise, a catering firm used for outsourcing cafeteria work may be able to provide a wider variety of rotating options and expanded staffing as needed.

In addition to economies of scale, firms may decide to outsource domestically in order to increase their flexibility. Firms faced with volatile and uncertain demand may choose to outsource so they can easily adjust their labour needs in response to changing market conditions. This is most obviously the case when applied to temporary work agencies (Houseman, 2001[31]), especially in the case of countries with strong employment protection for permanent employees. In this case, the use of outside employment agencies functions much like the use of temporary contracts in many European labour markets. The difference is that the lead firm contracts with the third-party contracting firm, and leaves the type of contract to be bargained between the third-party contracting firm and the worker.

The economies of scale, expertise and greater flexibility of contracting firms should lead to higher productivity. Domestic outsourcing should result in fewer idle resources, and therefore labour hoarding from the lead firm. Assuming the contracting firm can deploy the idle labour more efficiently (to other clients, for example), this should lead to higher productivity overall, and possibly lower costs for the lead firm. In addition, the expertise of the third-party contracting firm may give them superior knowledge of the labour market for support roles allowing for higher quality workers at lower cost due to fewer hiring frictions.

The productivity effects of outsourcing remain an open area of research with little in the way of concrete answers. Recent research is promising, showing that outsourcing events generally lead to higher employment and productivity for the lead firm (Section 4.3.1). Advances in information technology and artificial intelligence could enhance the benefits of outsourcing (Box 4.2) as well. Ultimately, how policy makers and analysts view outsourcing will likely hinge on whether it can deliver productivity gains, and whether those gains are fairly distributed.

Box 4.2. Artificial intelligence, information technology and the expansion of outsourcing

Given the many benefits to firms of outsourcing, why is outsourcing not more ubiquitous? Especially if outsourcing comes with significant flexibility over labour demand and cost reductions, one might expect firms to rely on outside firms more extensively. One barrier may be that it is too difficult and cumbersome for firms to write contracts stipulating everything outsourced workers or firms must do, and then to effectively monitor their performance.

Advances in technology are making it possible to better monitor workers, and to preserve quality standards while outsourcing. From a purely economic standpoint, a firm's decision to outsource partly depends on its ability to precisely define output, and/or its ability to monitor effort and quality. For example, one theory of why firms choose to franchise lies with the inability of a corporation to effectively monitor worker effort across thousands of distributed (usually retail) establishments. By franchising, the owner of a franchised establishment has a claim to some of the store's profits and finds it in her interest to closely monitor worker effort. At the same time, however, the owner of that same store can free-ride on the franchise brand, and may skimp on improvements to the store. There are trade-offs in the decision of whether or not to franchise.

Technology has lowered the costs for companies to monitor both quality standards and worker effort. Remote sensors, cheaper and smaller cameras, and geo-localisation, make it easier than ever for firms to monitor work, whether inside or outside the boundaries of the firm (Weil, 2014[14]). The ability to more easily contract with suppliers and monitor workers and sub-contractors should lead to more outsourcing (Hart, 2017[32]; Rogers, 2020[33]).

There is some empirical evidence supporting the notion that better information technology may lead to increased outsourcing. In the United States, the appearance of applications allowing for ride-sharing or room rentals led to a surge of own-account self-employment in these industries (Hathaway and Muro, 2016[34]). Bergeaud et al., (2020[35]) find that the rollout of broadband internet in France led to greater firm-to-frim outsourcing of support services and occupation clustering.

Third-party contracting firms may also provide screening of potential employees for lead firms. Exploring why temporary work agencies provide free general training to employees, Autor (2001[11]) argues that the training is really a screening mechanism to test ability type for a potential worker. Thus, employment agencies may be able to provide lead firms with higher quality workers than they could find on their own. In particular, for workers in core occupations who work on-site, the use of a secondary employer allows lead firms to learn about employees on the job, and eventually hire them as their own employees if their work merits it.

Reducing labour costs

Firms may outsource the work of support roles and even core functions to reduce wage and benefit costs. The clearest case is for firms covered by collective bargaining agreements. In countries with firm-level bargaining, outsourcing work from a unionised firm to a third-party firm likely implies a loss of collective bargaining coverage for affected workers. Third-party firms are generally under no obligation to honour collective agreements signed with the lead firm (Abraham and Taylor, 1996[19]). For countries with sectoral-level bargaining, similar arguments apply, with the administrative and support services sector (or generally the sector of the third-party contracting firm) likely finding itself covered by a sectoral agreement that allows for reduced wages and benefits for certain occupations, or no agreement at all.

More generally, outsourcing allows high-rent firms to exclude some workers from firm rents. Certain firms or industries are exceptionally profitable, whether due to high productivity, large economies of scale, or

their ability to take advantage of less competitive markets. Workers employed by these firms generally have access to the excess rents produced by these firms, which manifests itself in higher wages and benefits than would prevail in an average firm in a given industry based upon the workers' characteristics (Abowd, Kramarz and Margolis, 1999[36]; Card, Heining and Kline, 2013[37]). Workers within a firm tend to have a sense of equity among their peers (see Box 4.3). By outsourcing workers to secondary employers (even if they remain at the lead firm's physical location), this sense of equity may break down. Moving workers outside the boundary of the firm, therefore, may not only reduce the earnings of outsourced workers, but also increase the earnings of workers who remain in the firm (who obtain a larger share of the rents), which has implications for inequality overall.

Certain types of outsourcing may also exempt firms from payroll taxes or release the lead firm from liability for violation of employment laws. The self-employed – including the dependent self-employed and independent contractors – are often responsible for the firm's side of social security contributions. Depending on the country, shifting the employer side of payroll taxes onto the self-employed relieves the lead firm of substantial labour costs (Milanez and Bratta, 2019[38]). With franchising, the lead firm is generally not considered the legal employer of workers in franchised establishments, and cannot be held financially liable for employment law violations of franchisees (Callaci, 2018[3]). In both cases, the extent to which a lead firm can reduce their labour costs rests on the legal interpretation of a dependent employee.

In the case of both franchising and the employment of own-account workers, outsourcing complicates the application of anti-trust laws, often to the employer's benefit. Anti-trust laws usually prevent own-account workers from collectively bargaining as they are not considered employees, but a collection of independent sole proprietors. Attempts by own-account workers to collectively bargain are often seen as collusive by anti-trust authorities (OECD, 2019[29]).

In a different vein, the independent legal standing of franchisees often lands franchising in an ill-defined area of anti-trust enforcement. The lead firm, the franchisor, often retains a great deal of control over the operations of franchisees to the point where they potentially run afoul of anti-trust regulations. For example, they may push for adoption of anti-poaching agreements among franchisees, which helps to suppress the wages of employees (Krueger and Ashenfelter, 2018[39]). With anti-poaching agreements, employees with one establishment are barred from being hired by competitors, which greatly reduces employees' bargaining power in the labour market.[8]

Box 4.3. Fairness and within-firm inequality

One question that lingers over the discussion of domestic outsourcing and wages is why some firms would systematically pay wages above the market rate. For firms covered by a collective agreement this is clear and well established: collectively bargained wages are generally higher than what the average worker can bargain for individually, particularly at the firm level (OECD, 2018[40]). For workers in firms not covered by a collective agreement, why would a firm choose to share additional rents with workers, especially workers in support occupations such as cleaners, guards and IT workers?

There is both theory and empirical evidence that workers care not only about their own wages, but also about those of their co-workers. In theory, if workers' effort is tied to their perception being treated fairly as measured by their wage gap with their peers, firms are perfectly rational in compressing wages and offering workers a share of firm rents. Empirically, recent studies provide evidence for this proposition. Separations, and especially quits, rise and productivity falls in response to increasing wage gaps between a worker and his or her peers (Breza, Kaur and Shamdasani, 2017[41]; Dube, Giuliano and Leonard, 2019[42]). In addition to perceptions about their own wages, productivity also may drop if workers perceive their colleagues to have been treated unfairly (Drzensky and Heinz, 2015[43]; Heinz et al., 2020[44]).

As it relates to domestic outsourcing, the key question is whether such fairness concerns extend to workers beyond the boundaries of the firm. For franchising and other outsourcing arrangements, where workers are physically disconnected from the lead firm, this is unlikely to be the case. Even more interesting are arrangements where the outsourced workers are physically present and working side-by-side with employees of the lead firm. Although this is an area of ongoing research, the early research appears to point to wage losses for workers once their jobs are outsourced outside the boundaries of the firm (Section 4.3.2).

4.1.3. The rise of domestic outsourcing

This section will dive into the various forms of domestic outsourcing and chart their incidence over time and across countries using both aggregate and micro-data sources. The section will focus primarily on measuring the contracting out of firm-to-firm labour services, but it will also touch on temporary work agency (TWA) employment and own-account work.

Domestic outsourcing and firm-to-firm contracting of services is on the rise

Measuring firm-to-firm outsourcing and sub-contracting is challenging. In general, one needs both detailed industry information on firms and exact occupation assignment for workers. A worker driving a forklift in the warehouse of a manufacturing plant should not be considered outsourced, but a worker driving the same forklift in a manufacturing plant who is, in fact, employed by a logistics firm or an employment agency, matches the definition of "outsourced". The level of detail needed to make this distinction is often higher than what is available in public datasets and on a cross-country comparable basis.

There are nevertheless some industries and occupations that may act as a proxy into the extent of outsourcing in OECD countries. For example, employment in the administrative and support services industry provides a broad measure across countries of the growth of domestic outsourcing (Bernhardt et al., 2016[21]).[9] This industry captures general business support services provided to other firms.[10] Examples include temporary employment agencies, travel agencies, as well as cleaning and security services to firms. While not all workers employed in this industry meet the definition of domestic outsourcing, the industry as a whole nonetheless provides a broad, standardised, cross-country proxy of the tendency to contract employment with other firms (Goldschmidt and Schmieder, 2017[7]).

Over the past 20 years, employment has grown briskly in the administrative and support services industry. From 1995 to 2005, the share of total employment in this industry grew from 3.6% to 4.9% (Figure 4.1). From 2005 to 2018, it continued to rise to 6.3% of total employment, outpacing service industry growth over the same time span.

There is considerable variation across OECD countries. In 2018, the share of employment in administrative and support services was over 12% in Mexico and the Netherlands. In contrast, the share in Chile, the Czech Republic and Poland was below 3%.

The rise of firm-to-firm outsourcing is evident not only in employment shares in certain industries, but also in purchases between firms. National accounts data show that OECD countries are increasingly purchasing more business services from other firms. From 2005 to 2015, firms' purchases of "Other Business Sector Services" grew from 10.6% to 12.4% with almost all countries experiencing an increase (Annex Figure 4.A.1). Indeed, there is evidence that the rise of service outsourcing is one of the main causes of the increase of services in general (Berlingieri, 2013[45]).

Figure 4.1. Employment in support services industries has grown in almost all OECD countries

Share of total employment in administrative and support service activities, 1995-2018[1]
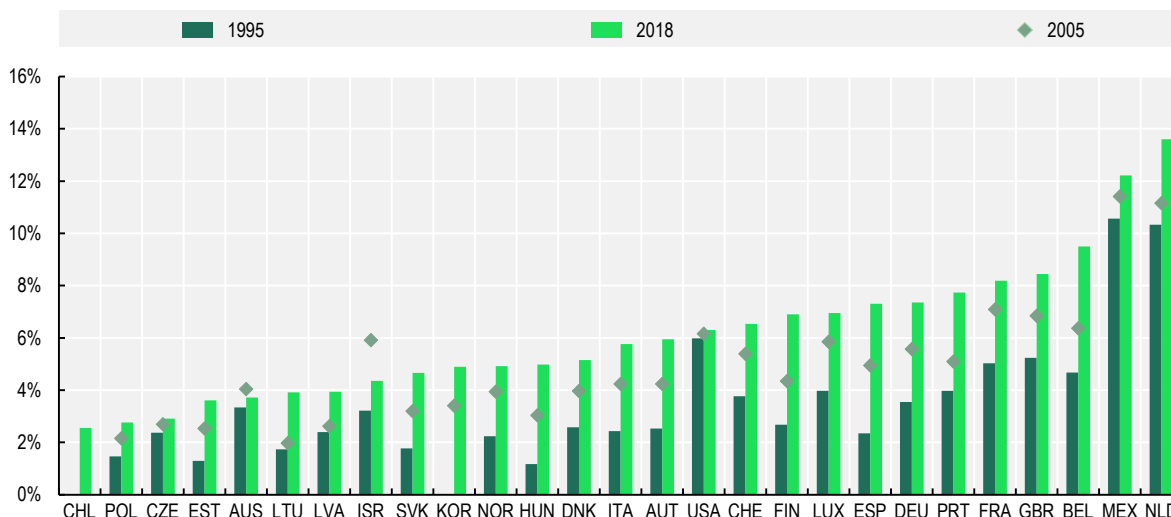
Note: Industry classification ISIC Rev 4. Administrative and Support Activities [N].
1. Year 1995 refers to 1998 for the United States, 2005 refers to 2007 for Korea, and 2018 refers to 2017 for France.
Source: *OECD STAN Industrial Analysis* (2020 ed.), http://stats.oecd.org//Index.aspx?QueryId=95267.

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The focus on administrative and support services neither captures the entire scope of outsourcing, nor does it provide a very precise measure. Outsourcing is prevalent in other occupations and industries, which are not amenable to easy measurement for cross-country comparisons with publicly available datasets. Box 4.4 provides a more in-depth discussion of some of these occupations and industries. At the same time, administrative and support services will contain some employees who are not outsourced. For example, many workers in travel agencies (a sub-sector of this industry) do not meet the definition of outsourcing (e.g. travel agents booking family vacations).

Looking in greater detail at the administrative and services industry, some sub-industries where domestic outsourcing is more prevalent have seen rapid employment growth since 1995. Figure 4.2 shows the administrative and service section (1-digit industry) broken out into a few of its main divisions (2-digit industries). Panel A shows investigative services and services to buildings and landscape activities. These divisions include security guard work, as well as cleaners and other maintenance of buildings.[11] Panel B contains employment in "employment activities". These are firms that provide human resource services to firms, as well as directly providing employees to other firms on a temporary basis including temporary work agencies. Both these groups have almost doubled their share of overall employment since 1995 (on average across countries). The share of employment in security activities and services to buildings has increased from 2% in 1995 to nearly 3.5% – with the highest shares in Spain and the Netherlands (around 5%). Similarly, the share of employment in employment activities increased from just over 1% in 1995 to over 2.5% in 2018. The Netherlands and Mexico have the highest share of employment in employment activities with about 8% and over 10%, respectively.

The focus so far on industries – however detailed – makes for a loose definition of outsourcing. A manager of a firm providing security services to a supermarket would likely not hold an outsourced job, but a guard employed by that same firm and charged with security on the premises of the supermarket would. To provide a more precise measure of outsourcing, and to facilitate comparisons between workers employed by a lead firm and those whose jobs are outsourced, it is necessary to focus on key occupations in addition to the industry of employment.

Figure 4.2. Employment in industries most representative of outsourcing is growing across OECD countries

Share of total employment in security and investigation activities; services to buildings and landscape activities; office administrative, office support and other business support activities, 1995-2018[1]
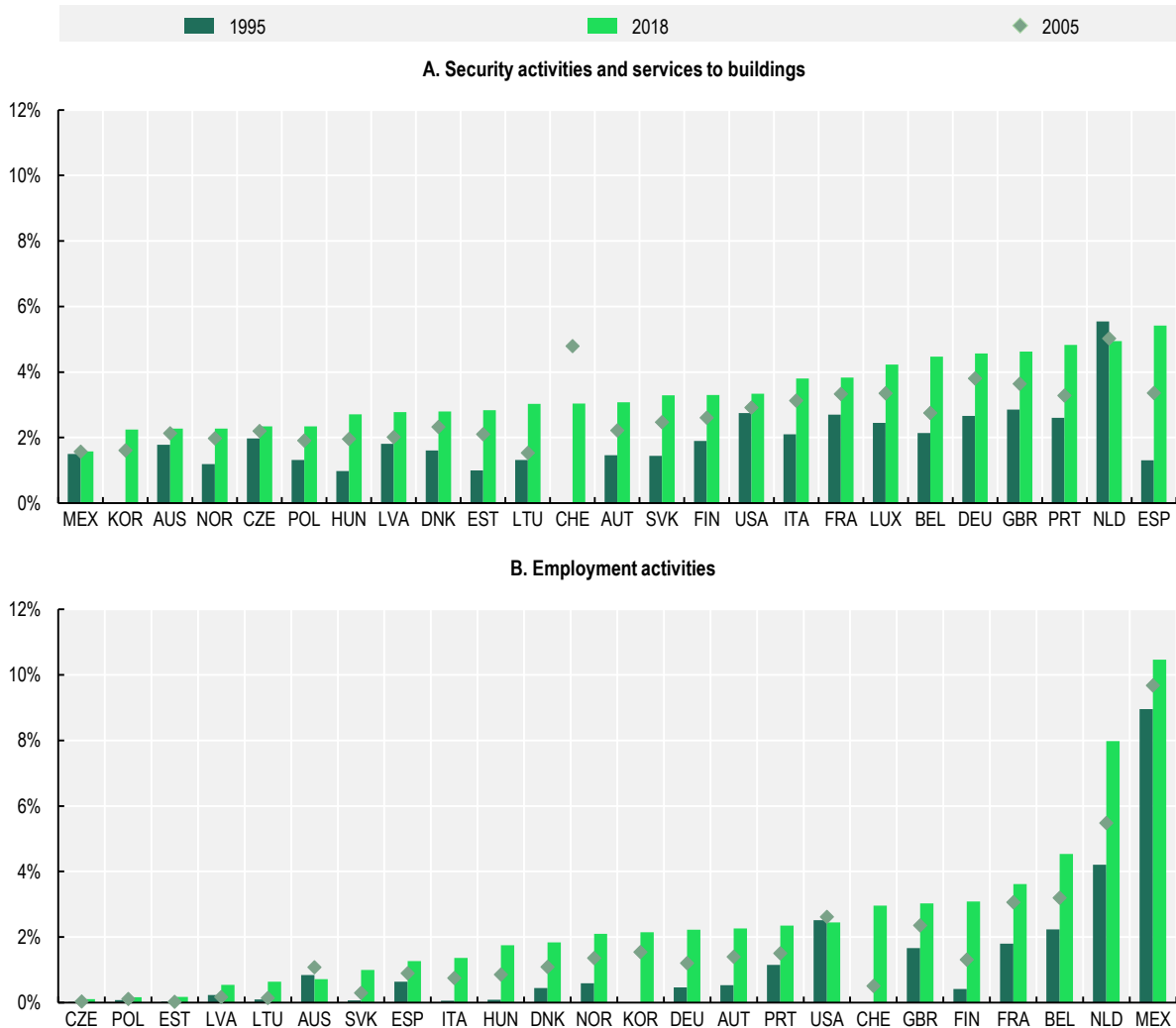
Note: Panel A covers Security activities and services to buildings ISIC Rev. 4 divisions 80-82 which includes Security and Investigation Activities (80), Services to Buildings and landscape activities (81) and Office administrative, office support and other business support activities (82). Panel B covers ISIC Rev. 4 division 78.
1. Year 2005 refers to 2006 for Korea and 2009 for Switzerland. Year 2018 refers to 2017 for Australia, France, Italy, Latvia, Lithuania and Portugal.
Source: OECD Structural Analysis (STAN) Database, https://stats.oecd.org/Index.aspx?DataSetCode=STANI4_2016.

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The following analysis focuses on specific occupations in particular industries known to employ workers who are then outsourced. In particular, the chapter will follow Dube and Kaplan (2010[6]) who focus on cleaners and guards in the administrative and support services industry. There are several arguments for the focus on cleaners and guards. First, these occupations are relatively similar across countries, and the tasks and skills needed to perform these occupations have changed little over the past 30 years. Second, in most occupational classification systems, cleaners and guards are denoted as specific, unique occupations and

are not lumped together with occupations performing markedly different tasks. This makes them easily identifiable. Firms in a diverse set of industries employ cleaners and guards, but when they are employed in the administrative and support services industry, workers in these occupations are highly likely to work in outsourced jobs. Finally, cleaners and guards are generally mid- to low-paying occupations. If outsourcing these jobs reduces wages, outsourcing would have important implications for inequality.

It is important to stress that cleaners and guards only represent two small, typical cases of occupations where outsourcing is prevalent. Anecdotally, outsourcing is becoming more common across a range of occupations, however these do not always lend themselves to easy measurement. Some occupations, for example high-skill information technology services, appear to be increasingly outsourced, but unlike guards and cleaners, their task content varies both over time and across countries which makes comparisons between countries or years difficult. Other occupations, for example cooks and canteen workers, are difficult to distinguish as outsourced in public-use, cross-country comparable survey data either because they are too broadly defined in existing occupation taxonomies, or because the industry classification needed to capture outsourcing is too narrow to be released by statistical agencies. The range of occupations and industries varies greatly, and with the aid of more detailed administrative data, some of these industries and occupations could be brought to light (Box 4.4).

Box 4.4. Outsourcing is not limited to cleaners and guards

Industries and occupations where outsourcing is common

Cleaners and guards are only two of many occupations where outsourcing is prevalent. This chapter focuses on these two occupations because they can often be easily identified as outsourced in labour force surveys. However, there are many other examples of occupations where outsourcing, at least anecdotally, appears to have become more common. Using administrative data, Goldschmidt and Schmieder (2017[7]) show that outsourcing has also grown in occupations like warehouse handlers, drivers and canteen workers. Dey, Houseman and Polivka (2012[46]) note that employment agencies are also heavily used by manufacturing industries for line work in the United States, which would previously have been done in-house by production workers employed by the lead firm.

Case studies from experts reveal an even wider range of industries and occupations impacted by outsourcing. Call centre operators, maids in hotels, fast-food workers, and general trucking are all occupations where outsourcing appears to be prevalent (Weil, 2019[47]). At the other end of the wage distribution, information technology services, accounting services, and general management consultancies are examples of industries that rely on firms outsourcing labour services for their business.

Across OECD countries in the sample, cleaners are increasingly concentrated in the administrative and support services industry, which suggests that their jobs are increasingly being outsourced. From 1995 to 2007, the share of cleaners employed in this industry increased from 16% to 24% (Figure 4.3). From 2011 to 2019, the share of cleaners in this industry further increased from 27% to 31%. Italy, Spain and Finland had the highest share of cleaners outsourced in 2019, at over 40%.[12] In contrast, the lowest shares were found in the Slovak Republic and the Czech Republic.[13]

At least between 1995 and 2007, firms appear to have increasingly outsourced security services as well. On average across countries, the share of guards working in the administrative and services industry increased from 38% to 53% over this period (Figure 4.4). From 2011 to 2019, this share held steady at 54%. The highest share of guards working in the administrative and services industry in 2019 is found in Estonia, Ireland and Italy. The lowest shares are found in Iceland and Switzerland.

Figure 4.3. Cleaners are increasingly employed in the administrative and support services industry

Share of cleaners outsourced 1995-2007[1] and 2011-2019[2]

A. 1995-2007

■ 2007   ♦ 1995

B. 2011-2019

■ 2019   ♦ 2011
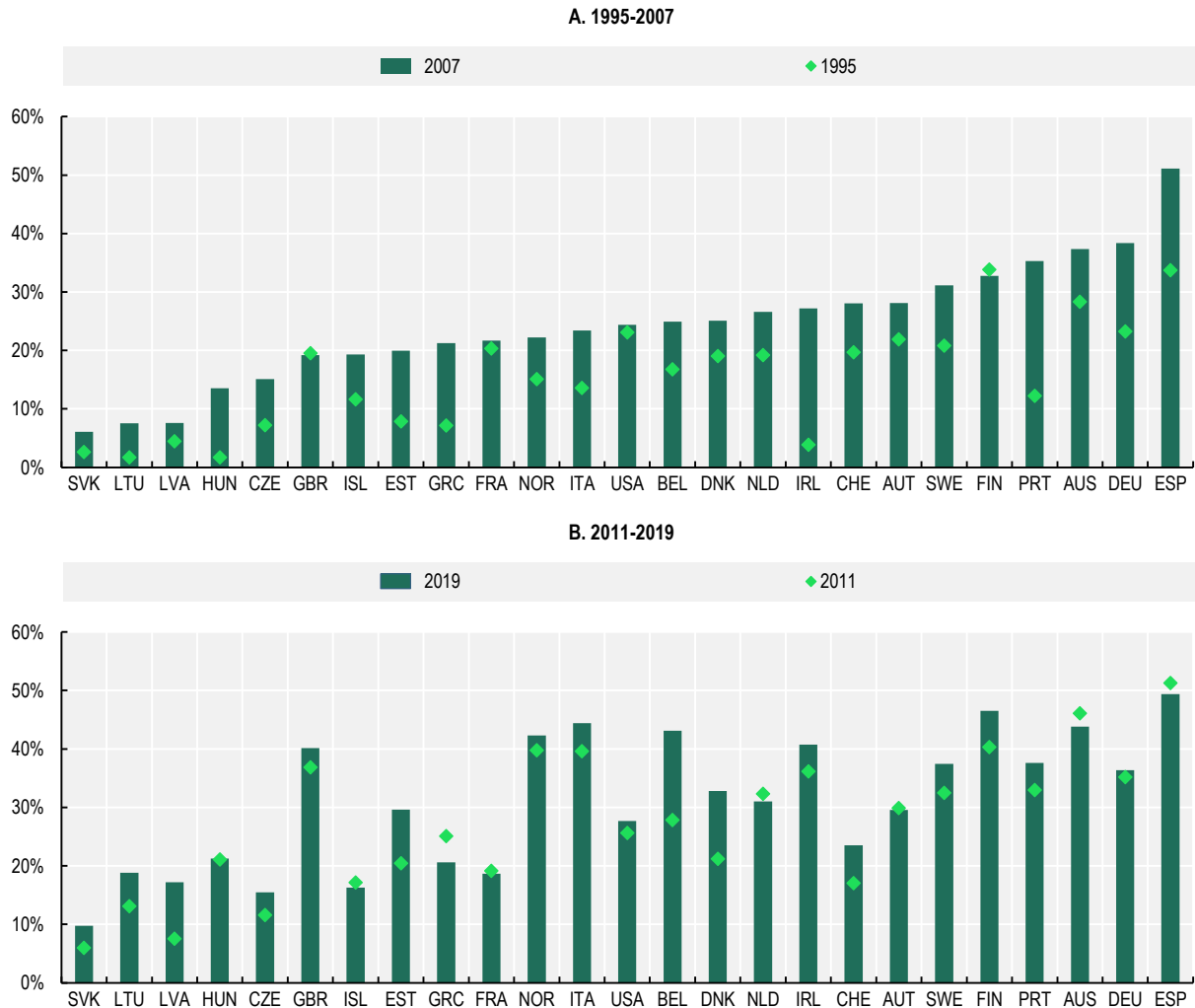
Note: For European countries up to 2007, cleaners are defined as ISCO-88 occupation code 913 or 914, "Domestic and related helpers, cleaners and launderers", and "Building caretakers, window and related cleaners", respectively. The administrative and support services industry is section K in NACE Rev. 1, "Real estate, renting and business activities". Private households with employed persons not included. As of 2011, cleaners are defined by ISCO-08 code 911 or 515, "Domestic, Hotel and Office Cleaners and Helpers", and "Building and Housekeeping Supervisors", respectively. For the United States up to 2002, cleaners are defined by 1980 SOC occupation code 453, "Janitors and Cleaners". Activities of households as employers not included. As of 2003, cleaners are defined by 2002 SOC and 2012 SOC occupation code 4220, "Janitors and Building Cleaners". For Australia, cleaners are defined by ANZSCO-06 code 81, "Cleaners and Laundry Workers". ISCO-88 shifted to ISCO-08 occupation codes in 2011 and NACE Rev. 1 to NACE Rev. 2 industry codes in the 2008 EU-LFS necessitating a break in the series.
1. Year 1995 refers to 1996 for Hungary, to 1997 for the Czech Republic, Estonia, Finland and Sweden, to 1998 for Latvia, Lithuania and the Slovak Republic and to 2001 for Australia.
2. Year 2019 refers to 2018 for Norway.
Source: The European Labour Force Survey (EU-LFS) (European countries), the Current Population Survey (CPS) (United States) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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Figure 4.4. Security guards are increasingly concentrated in the administrative and services industry

Share of guards outsourced 1995-2007[1] and 2011-2019[2]
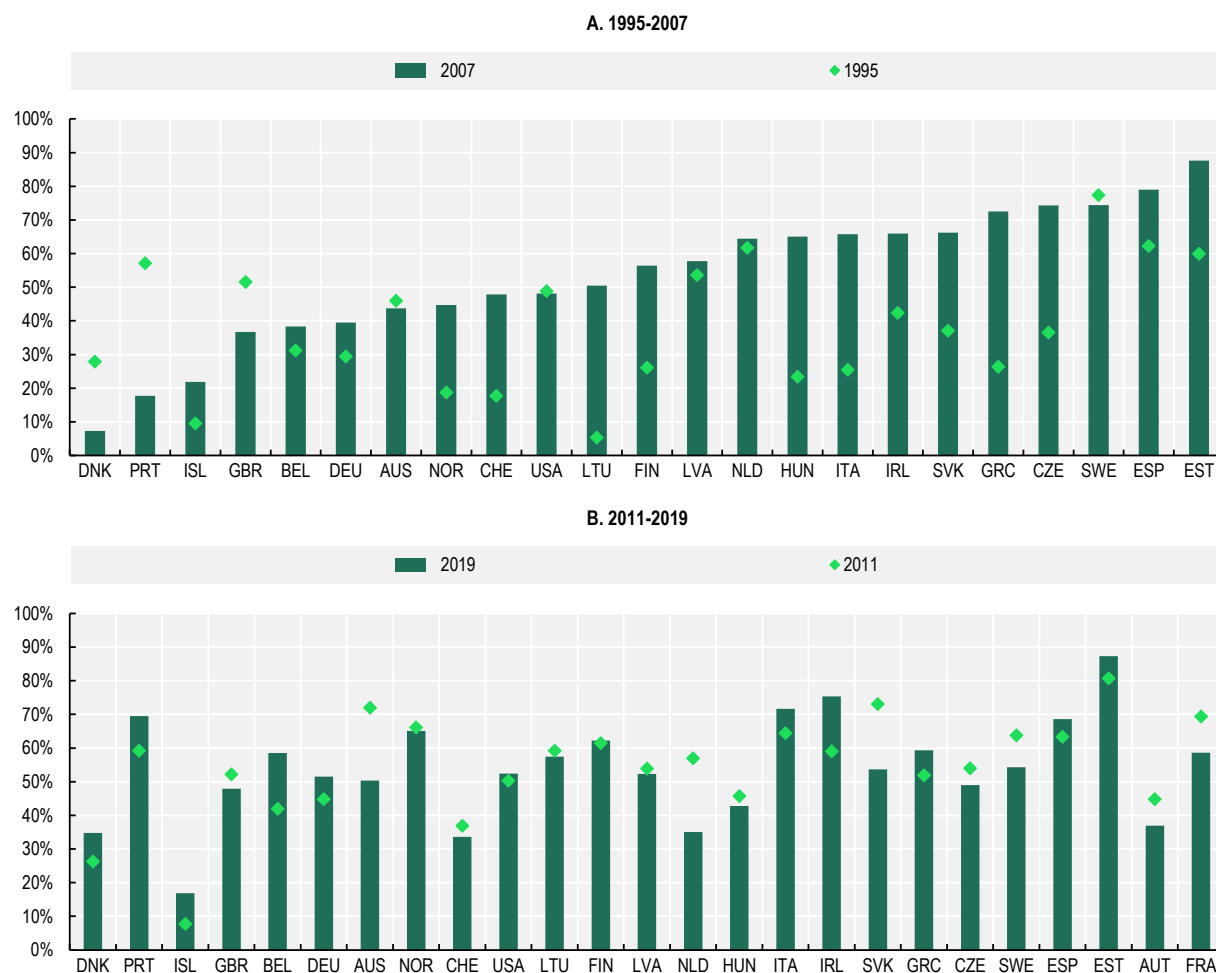
Note: For European countries up to 2007, guards are defined as ISCO-88 occupation code 516, "Protective services workers". The administrative and support services industry is section K in NACE Rev. 1, "Real estate, renting and business activities". Public administration and defence not included. As of 2011, guards are defined by ISCO-08 code 541, "Protective services workers". Public administration and defence not included. For the United States up to 2002, guards are defined by 1980 SOC occupation code 426, "Guards and police except public service". Between 2003 and 2010, guards are defined by 2002 SOC occupation code 3920, "Security guards and gaming surveillance officers". As of 2011, guards are defined by 2011 SOC occupation code 3930, "Security guards and gaming surveillance officers". In Australia, guards are defined by ANZSCO-06 occupation code 44 "Protective Service Workers" with the exclusion of ISIC-88 code 75, "Public Administration and Defence". ISCO-88 shifted to ISCO-08 occupation codes in 2011 and NACE Rev. 1 to NACE Rev. 2 industry codes in the 2008 EU-LFS necessitating a break in the series.
1. Year 1995 refers to 1996 for Hungary, to 1997 for the Czech Republic, Estonia, Finland and Sweden, to 1998 for Latvia, Lithuania and the Slovak Republic and to 2001 for Australia.
2. Year 2019 refers to 2018 for Norway.
Source: The European Labour Force Survey (EU-LFS) (European countries), the Current Population Survey (CPS) (United States) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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The growing share of cleaners and guards employed in the administrative and services industry is indicative of a general trend towards greater occupational segregation across firms. Researchers have documented an increased concentration of certain occupations within firms. This is also suggestive of domestic outsourcing. As firms contract out more of their workers, intermediate contracting firms will specialise more, and display greater homogeneity of occupations. Similarly, lead firms will shed many of their workers in supporting roles, also resulting in greater homogeneity in occupations. Using this insight, Handwerker and Spletzer, (2016[48]) find that between 2000 and 2011 in the United States, occupation-concentration within firms rose. Their results track well with the outsourcing of cleaners and guards, and other measures of outsourcing in the United States during this period. Using an enterprise survey from the United Kingdom, Cortes and Salvatori, (2019[49]) similarly find a rise in occupational concentration within establishments. Recent research from France finds rising occupational homogeneity within firms, and the authors show that it increased as broadband internet was introduced in France, which the authors relate to domestic outsourcing (Bergeaud et al., 2020[35]).

Employment in Temporary Work Agencies has risen slightly over the past decade

Employment with a temporary work agency represents a special case of administrative and support service employment. Employment with a temporary work agency would show under "Employment activities". Contrary to other forms of outsourcing, questions about its use are often included in labour force surveys, which may be because of its long history as well as the policy attention it has received in the past.

Temporary work agency employment has increased, on average across OECD countries in the sample, although with significant cross-country heterogeneity. As noted previously, not all forms of TWA employment fall under domestic outsourcing, and one should interpret these trends with that in mind. From 2007 to 2019, the share of employment placed through a temporary work agency increased form 1.3% to 1.6% of total employment in OECD countries in the sample (Figure 4.5). The highest shares of TWA employment are found in Slovenia and the Slovak Republic, at over 4% of overall employment. In Estonia, Greece and Norway, temporary work agency employment is nearly non-existent, with shares of less than one tenth of a percent.

Figure 4.5. The share of temporary work agency employment is on the rise

Temporary agency employment as a share of all employment, 2007 and 2019
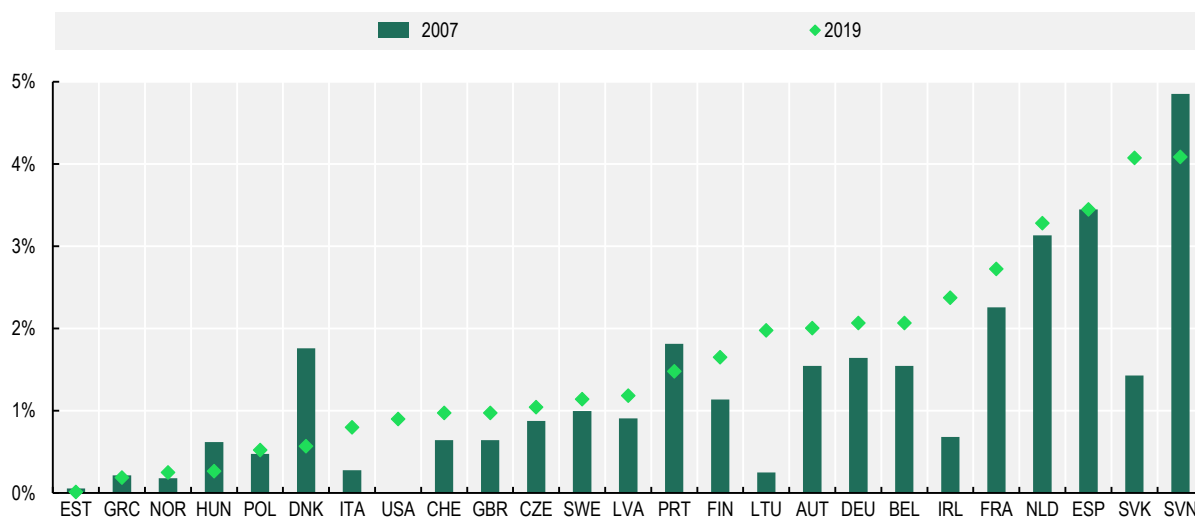
Note: Year 2007 refers to 2008 for Finland. Year 2019 refers to 2018 for Norway and to 2017 for the United States.
Source: The European Labour Force Survey (EU-LFS) and the Current Population Survey (CPS) May 2017 Contingent and Alternative Employment Arrangements supplement for the United States.

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Own-account work is falling slightly

Some self-employed workers and, in particular, the financially dependent self-employed, represent a part of domestic outsourcing that is challenging to measure. Self-employment can take many forms, only some of which will constitute outsourcing. Financially dependent own-account workers are more likely to fall under the concept of domestic outsourcing, particularly in certain industries (e.g. delivery and logistics drivers).

It is difficult to find reliable and timely measures of the dependent self-employed, but they represent a non-negligible share of self-employment. Many OECD countries do not consistently measure the dependent self-employed population, and when they do, the definitions are not standard across countries. A special module of the European Labour Force Survey (EU-LFS) in 2017 finds that dependent self-employment comprises around 16% of self-employment (Figure 4.6). Moreover, there is evidence from other surveys that this share has grown in the last decade (OECD, 2019[29]).

This is in contrast to own-account self-employment generally, which has fallen slightly over the preceding 25 years across OECD countries. Own-account self-employment includes dependent self-employment, but it is a broader definition taking into account the self-employed with many clients, for example. The share of own-account employment fell from just below 10% in 1995 to just below 9% in 2019 (Annex Figure 4.A.2). Much of this share can be explained by a continuing decline in agriculture employment. In 2019, the countries with the largest shares of own-account work as a share of total employment were Greece and Turkey with the lowest shares found in Norway in Denmark.

Figure 4.6. The incidence of own-account workers who generally have one dominant client

Percentage of self-employed, 2017
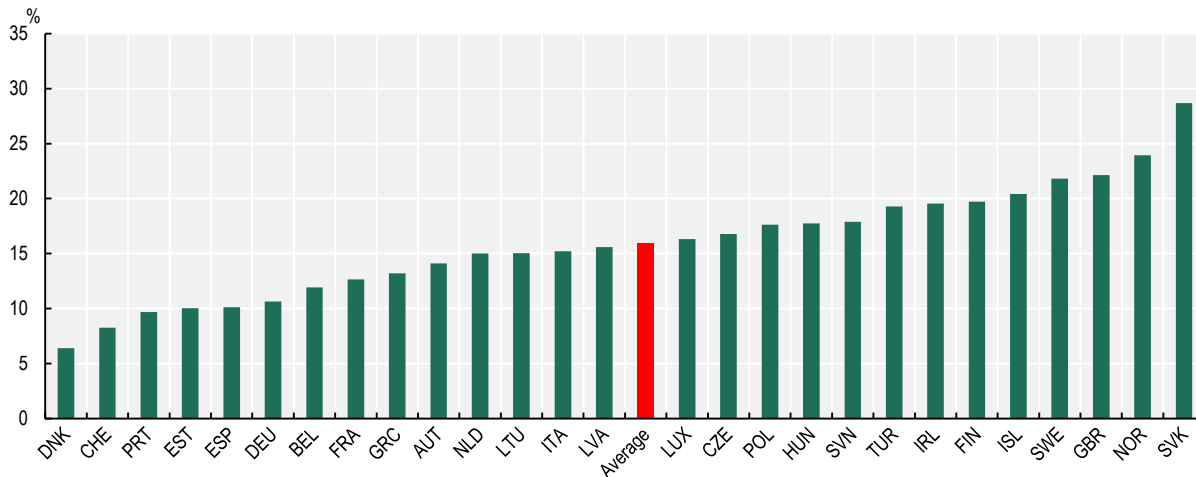
Note: The average is unweighted and includes the countries shown.
Source: OECD (2019[50]), *OECD Employment Outlook 2019: The Future of Work*, https://doi.org/10.1787/9ee00155-en.

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4.2. Domestic outsourcing and COVID-19

The previous section charted the rise of domestic outsourcing over the past 25 years. In March of 2020, the COVID-19 pandemic created first a health, and then an employment crisis in OECD economies (Chapter 1). This section examines domestic outsourcing during the COVID-19 crisis. The dynamics of domestic outsourcing over the (still-ongoing at the time of printing) health crisis may shed insight into current trends, as well as help paint a more nuanced picture of the dynamics of portions of the low-wage labour market.

From a theoretical perspective, the impact of the COVID-19 crisis on domestic outsourcing is ambiguous. The COVID-19 health crisis may have accelerated the long-term trend towards greater outsourcing of support service occupations. Other broad labour market trends, such as job polarisation, have tended to accelerate during previous negative economic shocks. In fact, as far as job polarisation is concerned, much of the trend can be accounted for by the employment dynamics during recessions (Jaimovich and Siu, 2020[51]). It is possible that firms that let go of support occupations as a result of decreased sales and output during the crisis may later decide to rehire these services through third-party contracting firms when economic conditions improve. If this were the case, then one would see employment decline less in outsourcing industries and occupations during the COVID-19 crisis compared to other industries or in-house employment of similar occupations.

Conversely, domestic outsourcing may act as a buffer to variable firm labour demand. During a crisis, firms may hoard their own labour and, in case of a decline in sales and output, release their outsourced workers first. If this were the case, then one would expect to see a greater employment decline in outsourcing industries and occupations. This would give greater credence towards the claim that outsourcing helps firm flexibility (Section 4.1.2).

Figure 4.7 shows the change in employment for total private employment and the administrative and support activities industry. Recall that the administrative and support services industry primarily provides intermediate services to other firms with little knowledge transfer. While not all employment in this industry represents outsourcing, it provides an easily accessible cross-country comparison. The change shown is from the fourth quarter of 2019 (i.e. before COVID-19 began to circulate extensively in OECD countries) to the second and fourth quarters of 2020, respectively.

In the majority of OECD countries in the sample, the percentage change in employment in the administrative and support services industry was greater at the start of the COVID-19 crisis than the percentage change in employment in the private sector overall. Across OECD countries, the number of employees in the private sector decreased by 3.1% between the fourth quarter of 2019 and the second quarter of 2020 compared to 5.1% for administrative and support services.

Extending the analysis out to the fourth quarter of 2020 reinforces the greater sensitivity of administrative and support services to the COVID-19 employment shock. Employment in administrative and support services declined by 5.8% between the fourth quarter of 2019 and the fourth quarter of 2020. By comparison, overall private employment declined only by 1.5% over the same period.

Figure 4.7. Employment in administrative and support services declined more than employment overall

Percentage change in employment
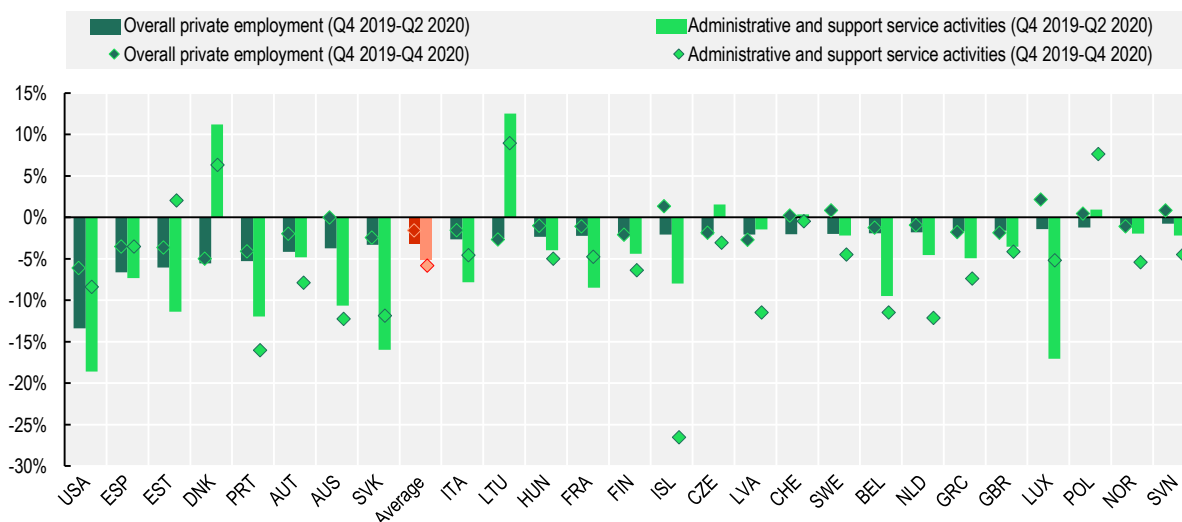
Note: For the European countries, overall private employment is calculated as total employment less Public administration and defence; compulsory social security and Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use. For Australia and the United States, overall private employment is calculated as total employed less "Public administration and safety". The average is unweighted and includes the countries shown. Denmark, Iceland and the United Kingdom are updated to Q3 2020.
Source: Eurostat for the European countries, the United States Current Employment Statistics (CES) and the Australian Labour Force Survey.

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As previously discussed, employment in the administrative and support services sector is a rough measure of outsourcing. Certain non-outsourcing activities in this industry (e.g. travel agencies) have been particularly affected by the crisis, for example. What is presented in Figure 4.7 only allows for tentative conclusions about what happened to outsourced jobs. However, certain occupations within this sector are more likely to capture outsourcing. For example, Figure 4.8 shows how the COVID-19 crisis affected the number of employed guards and cleaners by their likely outsourcing status.

Employment among outsourced guards fell slightly at the start of COVID-19, while it decreased much more for guards who work in-house. Between the fourth quarter of 2019 and the second quarter of 2020, employment fell by 10% among non-outsourced guards, on average, and in all but two countries considered in the sample. Among outsourced guards, employment was unchanged, on average, between the fourth quarter of 2019 and the second quarter of 2020, although with significant heterogeneity across countries. Extending the analysis to the fourth quarter of 2020, employment among non-outsourced guards fell by 9% while it decreased by 8% among outsourced guards, suggesting more job destruction in the outsourced sector than in the in-house one in the second half of the year.

The difference in employment growth between cleaners whose jobs are outsourced and those whose jobs are not, was less extensive at the start of COVID-19 than for guards. On average, employment among cleaners who were not outsourced decreased by 9% while it decreased by 8% among outsourced cleaners between Q4 2019 and Q2 2020. Between Q4 2019 and Q4 2020, employment among outsourced and non-outsourced cleaners decreased by 10% with little discernible difference in employment changes between the two groups. In sum, a more precise measure of outsourcing showed that at the onset of the COVID-19 crisis, outsourcing may have accelerated – at least among guards. However, a year after, employment for cleaners and security guards adjusted at a similar rate whether the jobs were outsourced or not.

Figure 4.8. Guards experienced sharper declines in employment among workers who are not outsourced

Percentage change in employment
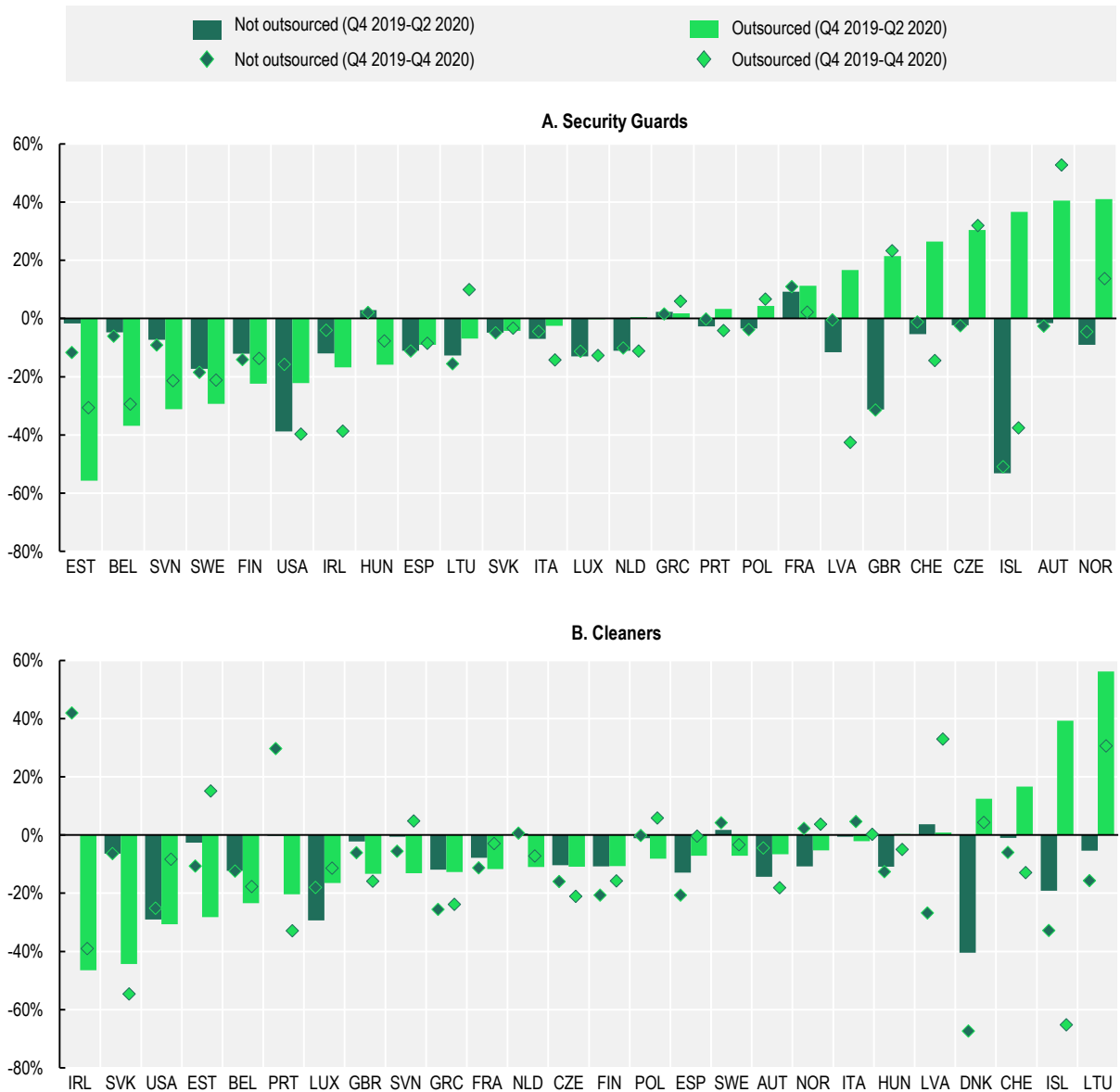
Note: For the European countries, guards are denoted by ISCO-08 sub-major group 54, "Protective Service workers", and are considered outsourced if they are employed in NACE Rev. 2 division 80, "Security and investigation activities." Cleaners are denoted by ISCO-08 sub-major group 91 "Cleaners and Helpers" and are considered outsourced if they are employed in NACE Rev 2. division 81, "Services to buildings and landscape activities." NACE Rev. 2 section "O", Public administration and defence; compulsory social security and section "T", Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use" are not included as valid sections for.non-outsourced cleaners and guards. Data from Denmark, Iceland, and the United Kingdom are updated to Q3.
Source: Eurostat for the European countries and the United States Current Population Survey (CPS).

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4.3. Domestic outsourcing may provide opportunities for OECD economies but its effects on job quality are mixed

One of the key questions looming over the rise of domestic outsourcing is what it means for workers and firms. There is a reasonable a priori case that firms outsource workers to realise productivity gains. If true, outsourcing holds the potential to benefit OECD economies. For workers, if outsourcing is accompanied by better pay and benefits, it is likely a welcome development. If, on the other hand, earnings and workplace amenities are reduced, this could lead to distress for many workers and possibly a rise in inequality overall. This section traces out the impact of outsourcing on five aspects of the labour market: productivity, earnings, working time, contract type (open-ended or temporary) and training.

The effects of outsourcing are mixed. There is recent, though tentative, evidence that firms that outsource realise productivity gains in the years that follow. There is more substantial evidence showing that, across a range of countries, outsourcing of low-pay jobs results in lower wages for affected workers. By contrast, the effects of outsourcing on other aspects of job quality are also mixed. Outsourced workers in low-pay occupations appear less likely to participate in training and more likely to work part-time involuntarily, but they are more likely to be on an open-ended contract.

4.3.1. Outsourcing may improve productivity

Whether outsourcing leads to the more productive provision of services is an open question in the academic literature and one of the most important questions hanging over the value of outsourcing from a policy perspective. If third-party firms can provide non-core functions of the firm more productively, this can, in theory, provide higher wages to workers (outsourced or incumbent) while giving the lead firms more room to invest, lower prices or increase employment.

There is some academic evidence pointing to weakly negative effects of outsourcing on productivity. This research relied on aggregate input-output data to measure domestic outsourcing and used within-country industry variation or cross-country variation by industry to identify the effect of outsourcing on productivity. Using data from Germany between 1995 and 2006 (Winkler, 2010[52]), or a panel of European OECD countries from 1996 to 2008 (Schwörer, 2012[53]), these studies found a weakly negative, but imprecisely estimated, effect of domestic outsourcing on productivity.

More recent research from France takes advantage of administrative data of workers and firms and finds a positive impact of domestic outsourcing on productivity. Bilal and Lhuillier (2020[5]) find that a 1 percentage point increase in outsourcing expenditures (as a share of the total wage bill) increases firm-level value added by 5%. Moreover, the authors find that this increase is equally split between higher labour productivity (2.6%), on the one hand, and higher employment (2.2%), on the other. Also for France, but using a different methodology, Le Moigne (2020[54]) finds similar average increases in productivity (1.96%) and slightly higher employment effects (4.5%) for firms that make use of outsourcing. Although these studies employ better data and empirical methodologies compared to earlier study, they are only a first step towards establishing a causal link between outsourcing and productivity.

4.3.2. Outsourced jobs pay less in low-pay occupations

Another salient dimension of domestic outsourcing is its impact on wages. Do outsourced workers, all else equal, earn more or less than similar workers employed directly by lead firms? The predictions of the various theories of outsourcing are ambiguous with regard to the direction of an outsourcing effect on wages. Theories that hypothesise outsourcing as a way to break union wage premiums, or disconnect support occupations from the rents generated by high-earning firms would predict a negative wage premium (Section 4.1.2). Conversely, if firms use outsourced workers to meet more flexible staffing needs

in the face of variable demand, or to realise productivity gains, firms may be willing to share these gains with workers in the form of higher wages.

This section uses labour force survey data to compare earnings differences between outsourced jobs compared to those retained in house. The analysis again focuses on guards and cleaners, which the academic literature regards as occupations typical of outsourcing. It is important to emphasise that while typical, it is not obvious that the results in this chapter would extend to other occupations – in particular to high-paid occupations – or outsourcing arrangements including temporary agency or own-account workers. The effects of outsourcing on job quality for other occupations and types of outsourcing remain a question for further research.

One complication that arises in comparing the earnings of outsourced workers, and workers in the same occupation whose jobs have not been outsourced, is that they have observable differences in characteristics such as gender, age and education, etc. In particular, across European OECD countries, outsourced workers in cleaners and security occupations tend to have lower education than non-outsourced workers in the same occupation. Similar differences are observable between outsourced and in-house workers in the United States and Australia as well.[14]

To correct for these observable differences (which could be confounding factors when looking at the impact of outsourcing on wages), this section measures wage differences based on a regression analysis. The empirical strategy will follow Dube and Kaplan (2010[6]) who measure wage differences between outsourced cleaners and guards, and those who are not outsourced, by using the industry of employment to proxy for whether a job is outsourced or not. The methodology of using the employer's industry for cleaners and guards to denote outsourcing is the same as that used to measure the incidence of outsourcing in Section 4.1.3.

The results should not be granted a causal interpretation. Even after controlling for observable differences between outsourced cleaners and guards, there may still be unobservable differences that influence earnings. However, Goldschmidt and Schmieder, (2017[7]) find that this methodology yields similar results to using matched employer-employee data and a more sophisticated empirical approach, which is better able to address differences in unobservable characteristics.

Employing this empirical strategy for cross-country comparisons is difficult due to data limitations. In most countries, earnings data combined with detailed occupation and industry information for each worker are often only found in administrative data, and even then, often not simultaneously. However, starting in 2009, the European Labour Force Survey began collecting data indicating in which decile of the monthly earnings distribution workers are located. The regression results in this section will use this information to examine how outsourcing shifts workers between earnings deciles (Box 4.5).

Figure 4.9 shows where earnings for cleaners fall in the earnings distribution and how outsourcing changes their relative standing. The dark line in each panel shows the complementary cumulative earnings distribution. That is, at each percentile, it shows the share of cleaners who earn more than that percentile. The earnings percentiles are calculated using the entire earnings distribution within a country, i.e. including all occupations and not just cleaners. The counterfactual distribution in the presence of outsourcing (light line), shows how outsourcing moves the distribution of outsourced cleaners across the monthly earnings distribution.[15] Figure 4.10 shows the exact same analysis but with guards rather than cleaners.

In Europe, Australia, and the United States, cleaners are unambiguously low-paid occupations. In Europe and Australia, median earnings for cleaners are between the 10th and 20th percentile of the earnings distribution. In the United States, median earnings for cleaners put them between the 20th and 30th percentile of the overall earnings distribution.[16]

The main finding is that, across European OECD countries in the sample, Australia as well as the United States, outsourcing appears primarily to shift low-pay cleaners further down the pay distribution. For cleaners in Europe (Figure 4.9, Panel A.), outsourcing moves cleaners down the earnings distribution

at almost every decile. This includes higher percentiles such as the 70th and 80th where few cleaners earn at these percentiles. Similar results obtain for a few large European OECD countries when analysed separately (Annex Figure 4.A.5).

For outsourced cleaners in Australia, the shift down the earnings distribution primarily occurs for the lowest paid cleaners. Cleaners who earn between the 10th and 40th percentiles drop down the earnings distribution when their jobs are outsourced (Figure 4.9, Panel B.). At higher deciles, the earnings of outsourced cleaners appear to be unaffected by outsourcing. Outsourced cleaners earn about 1% less, on average, than non-outsourced cleaners in Australia.[17]

In the United States, the pattern looks more similar to Europe than Australia. From the 10th to the 70th percentile, outsourced cleaners earn significantly less than their in-house peers (Figure 4.9, Panel C.). Taking the entire sample together, outsourced cleaners suffer a 5% wage penalty, on average, in the United States.

Before turning to the effects of outsourcing on guards, it is important to note that guards earn more, on average, than cleaners. This follows from looking at the actual pay distribution (dark line) in Figure 4.9 (cleaners) compared to Figure 4.10 (security guards), which represents the unadjusted earnings distributions of cleaners and guards, respectively. At every point on the x-axis, the dark line for security guards is above that of cleaners, showing that, at every decile, a greater share of security guards earn more at that decile than cleaners do. For Europe and Australia, the median guard earns between the 40th and 50th percentile of the earnings distribution. For the United States, the earnings for the median guard places them between the 30th and 40th percentile. This is perhaps not surprising, given the higher share of tertiary education among security guards compared to cleaners.

In Europe, guards whose jobs are outsourced earn less than guards who work in-house. The share of guards earning between the 30th and 90th percentile of monthly earnings drops significantly when guards are outsourced. With the median earnings for guards situated between the 40th and 50th percentile, this suggests that only a minority of high-paid guards are affected (Figure 4.10, Panel A.). As with cleaners, the results for guards are similar for a few disaggregated European OECD countries (Annex Figure 4.A.6).

In Australia, outsourced guards between the 40th and 70th percentile are more likely to fall down the earnings distribution. While the share of outsourced guards in the lower deciles of the earnings distribution are comparable to those of their non-outsourced peers, they are significantly less likely than non-outsourced guards to earn above the 50th percentile of earnings (Figure 4.10, Panel B.). Overall in Australia, guards earn 3.6% less than guards who are not outsourced.

In the United States, outsourced security guards also fall down the earnings distribution. The wage penalties are more pronounced for outsourced guards who earn, on average, 7.7% less than their non-outsourced peers (Figure 4.10, Panel C).

Overall, the results of this section suggest that, in low-pay occupations, workers in outsourced jobs earn less than their peers in non-outsourced jobs. This effect is particularly strong for the highest-paid jobs within these occupations: the results suggest that the incidence of high- and middle-paid workers within these low-paid occupations is indeed much smaller if the jobs are outsourced. Although not explored in this chapter, one implication of outsourcing already low- and middle-pay jobs is higher inequality.

The results on the earnings or wage effects of outsourcing from the academic literature are similar to what is found in this chapter. This chapter is modelled after Dube and Kaplan (2010[6]), who analyse the effect of outsourcing on wage inequality in the United States. Employing a reweighting method to determine distributional effects of outsourcing, they find similar results with outsourcing shifting workers down from the middle and middle-upper part of the wage distribution. The authors conclude that "Overall, outsourcing appears to have altered the wage distribution by taking mid- to high-paying jobs and turning them into lower paying ones."

Figure 4.9. Outsourcing of cleaners shifts workers down the earnings distribution

Complementary cumulative distribution and counterfactual complementary cumulative distribution for cleaners in the presence of outsourcing

Note: The darker line is one minus the cumulative distribution function for cleaners across the overall monthly earnings distribution. The lighter line is the regression-adjusted distribution for the effect of outsourcing. Regression is a linear probability model of whether a worker is above the given decile. Stars on the decile denote the difference is significant at the 95% confidence interval. Panel A consists of cleaners aged 20-64 years old (defined by ISCO-08 code 911 or 515, "Domestic, Hotel and Office Cleaners and Helpers", and "Building and Housekeeping Supervisors", respectively) across European OECD countries (excluding Turkey and including Iceland) over years 2011-18. Cleaners are outsourced if they work in NACE Rev. 2 Industry N "Administrative and support services". Panel B consists of employed cleaners aged 20 to 64 over the period 2001-19 who reported that their main occupation was Cleaner and Laundry Workers (ANZSCO 2006 Code 81). Cleaners were identified as outsourced if the reported industry for their main job was Building Cleaning, Pest Control, and Other Support Services (ANZSIC 2006 Code 73). The deciles were created using usual weekly earnings. Panel C consists of employed cleaners (excluding self-employed) aged 20 to 64 over the period 2011-19 whose reported occupation for their main job was Janitors and Building Cleaners (Census 2012 Occupation Code 4 220). Cleaners were identified as outsourced if the reported industry for their main job was Services to Buildings and Dwellings (Census 2002 Industry Code 7 690). The deciles were created using usual weekly earnings.
Source: The European Labour Force Survey (EU-LFS) (European countries), the Current Population Survey (CPS) (United States) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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Box 4.5. Estimating earnings changes for outsourcing with distributions

The European Labour Force Survey (EU-LFS), like many labour force surveys, does not contain continuous wage or earnings data. Starting in 2009 in most countries, the EU-LFS does indicate in which decile in the monthly earnings distribution earnings from the main job falls. For example, for a worker in Denmark in 2012, the analyst would know that earnings from the main job placed that worker in between the 30th and 40th percentile of the monthly earnings distribution. Although these data will not allow the computation of an average earnings premium from outsourcing, they say something about how outsourcing moves workers within the overall earnings distribution.

Distribution regressions allow one to say how the effect of a given policy intervention varies across an arbitrary distribution. The idea is to divide an underlying distribution (monthly earnings, for example) into bins or cut-offs, and then estimate a parameter for groups below (or above) each point (Chernozhukov, Fernández-Val and Melly, 2013[55]). The method traces a set of parameter estimates, which can be used to construct a counterfactual distribution conditional on observable characteristics (Annex 4.B). For the purposes of outsourcing and the EU-LFS, the method will show how outsourcing shifts the distribution of monthly earnings among affected groups. The application in this chapter is most similar to applied work by Dube (2019[56]) but using decile indicators for monthly earnings rather than wages. The estimating equation is

$$y_{i,t,c,d} = \beta_d * outsource_{i,t,c} + \boldsymbol{X}_{i,t,c}\boldsymbol{\gamma} + \delta_t + \theta_c + \varepsilon_{i,t,c,d}.$$
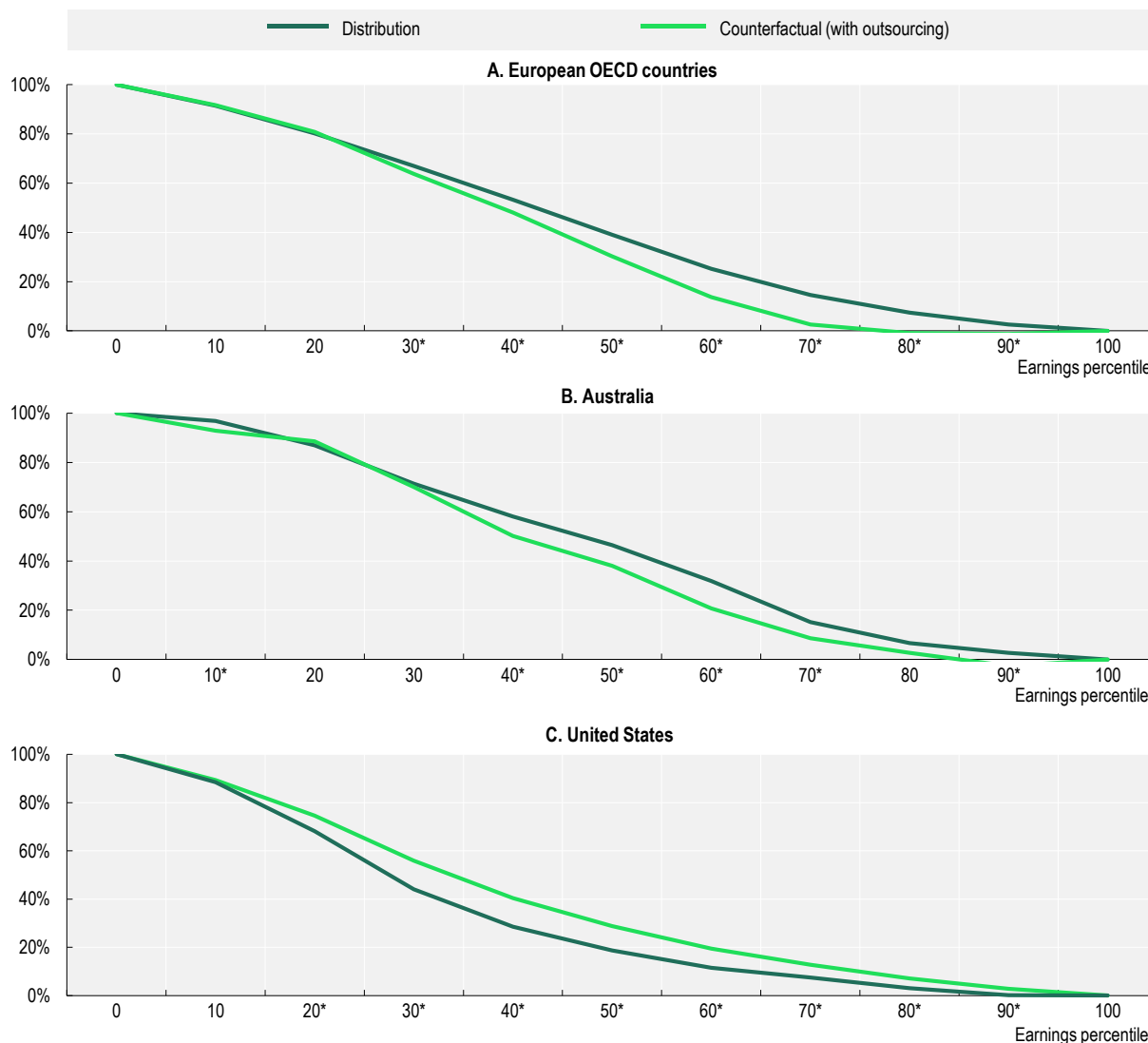
The dependent variable, $y_{i,t,c,d}$, is a binary indicator equal to one when individual i in country c at time t has monthly earnings greater than decile d. The variable $outsource_{i,t,c}$ is the indicator of interest and takes a value of one if either a cleaner or guard is working in the business services industry, $\boldsymbol{X}_{i,t,c}$ is a vector of individual and job characteristics including a non-parametric specification in age, education, sex and the log of usual hours worked. The indicators δ_t and θ_c capture year and country effects, respectively, while $\varepsilon_{i,t,c,d}$ is the error term. The equation is estimated as a linear probability model (ordinary least squares) separately for cleaners and security guards as well as for each node in the overall country earnings distribution.

The above equation has the form of a standard linear probability model, but the dependent variable and coefficient for outsourcing require further explanation. The mean of the dependent variable at each decile effectively traces out the cumulative distribution function of cleaners and guards, respectively, across the overall monthly earnings distribution. The theory is defined by the cumulative distribution function (CDF), but all results here are given by 1 – CDF to aid interpretation. The dependent variable is therefore, $y_{i,t,c,d} = \boldsymbol{1}\{g_{i,t,c} > d_{t,c}\}$, where $g_{i,t,c}$ is the decile of monthly earnings of person i in country c in year t. The set of estimated coefficients on the outsourced indicator, $\widehat{\beta_d}$, are estimated in d separate regressions and trace out the counterfactual cumulative distribution function in the presence of outsourcing. For each regression, the coefficient shows how outsourcing shifts workers at the margin above or below the given decile in the pay distribution. In words, the set of estimated coefficients shows how, all else equal, outsourcing shifts the distribution of monthly pay among cleaners and guards, respectively.

The earnings data from both Australia and the United States contain enough detail (estimates of hours and earnings) to compute average wage effects of outsourcing. The analysis calculates deciles in these countries in order to compare the effects to European OECD countries. The chapter reports the average effects to compare to the literature and confirm the distributional results.

Figure 4.10. Outsourcing of security guards shifts workers down the earnings distribution

Complementary cumulative distribution and counterfactual complementary cumulative distribution for guards in the presence of outsourcing

Note: The darker line is one minus the cumulative distribution function for security guards across the overall monthly earnings distribution. The lighter line is the regression-adjusted distribution for the effect of outsourcing. Regression is a linear probability model of whether a worker is above the given percentile. Stars on the percentile denote the difference is significant at the 95% confidence interval. Panel A consists of guards (defined by ISCO-08 code 541, "Protective services workers") across European OECD countries (excluding Turkey and including Iceland) over the period 2011-19. Guards are outsourced if they work in NACE Rev. 2 Industry N "Administrative and support services". Panel B consists of employed guards aged 20 to 64 over years 2001-19 who reported that their main occupation was Protective Service Workers (ANZSCO 2006 Code 44). The deciles in Australia were determined using usual weekly earnings. Guards were identified as outsourced if the reported industry for their main job was Other Business Activities (ISIC 3.1 Code 74). Panel C consists of employed (excluding self-employed) guards aged 20 to 64 over the period 2011-19 whose reported occupation for their main job was Guard (Census 2012 Occupation code 3930). Guards were identified as outsourced if their reported industry for their main job was Investigation and Security Services (Census 2002 Industry Code 7680). The deciles in the United States were created using usual weekly earnings.
Source: The European Labour Force Survey (EU-LFS) (European countries), the Current Population Survey (CPS) (United States) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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Research for other OECD countries using better identification strategies and data confirm these results. Research using German administrative data finds that outsourcing leads to wage declines of up to 10% and similar distributional effects as found in this chapter for Europe (Goldschmidt and Schmieder, 2017[7]). Recent empirical work using French data also finds sizable wage declines for outsourced workers of around 14% to 15% (Bilal and Lhuillier, 2020[5]; Le Moigne, 2020[54]).

The negative wage effects of outsourcing are not only limited to jobs subcontracted to secondary firms. Academic studies have also found wage declines associated with franchising, including in key industries such as fast food (Krueger, 1991[10]) and the hotel industry (Freedman and Kosová, 2014[8]). In both studies, similar workers in essentially identical establishments earn less if they are employed by franchisees than if they are employed directly by an establishment run by the lead firm. In some emerging economies, wage declines are also found with temporary agency workers compared to similar workers with whom they work side-by side in the same firm (Drenik et al., 2020[13]), although this is unlikely to generalise to most OECD countries due to anti-discrimination regulations that often impose the same pay level for the same job (OECD, 2020[17]). In sum, moving workers in low-pay occupations outside the boundaries of a lead firm appears to result in wage declines for these workers and may be an important driver of overall earnings inequality (Box 4.6).

Box 4.6. Does outsourcing explain between-firm earnings inequality?

An emerging stylised fact about rising earnings inequality across OECD countries is that inequality between firms has risen more than inequality within firms. Researchers have confirmed this fact using high quality administrative data from the United States and other OECD countries covering close to the universe of firms and workers (Barth et al., 2016[57]; Song et al., 2019[58]; Criscuolo et al., 2020[59]).

Although the importance of rising between-firm wage inequality has been confirmed across many OECD countries, the reason for this phenomenon remains elusive. Many of the authors of these studies speculate that domestic outsourcing could play an important role in explaining the rise in between-firm wage inequality. With firm-to-firm outsourcing of complementary occupations to specialty service firms, complementary occupations that are less productive are segregated into separate firms. This leaves the higher productivity "core" occupations of the lead firm in place, which would generate rising between-firm earnings inequality. If productivity gains and/or higher profits from outsourcing are shared with remaining workers, outsourcing would also increase the higher rents paid by the lead firm.

The connection between outsourcing and rising between-firm earnings inequality is yet to be confirmed. However, just as with this chapter, recent studies of between-firm earnings inequality point to an important role for inter-industry earnings differentials, and especially the importance of occupations across industries and worksites (Haltiwanger and Spletzer, 2020[60]; Wilmers and Aeppli, 2021[61]).

4.3.3. The effects of outsourcing on other dimensions of job quality are mixed

Outsourced cleaners are more likely to involuntarily work part-time

One factor that often inhibits the earnings of low-wage workers is the unavailability of full-time hours. Workers across OECD countries are finding that underemployment is on the rise: many, and in particular low-wage, workers cannot find full-time employment; or they would like more hours than their employers are willing or able to provide (OECD, 2019[62]). This section turns to whether the working time for outsourced workers is different from similar workers who are employed in-house, and if it is, whether such hours differences are involuntary.[18]

Across OECD countries in the sample, outsourced cleaners are more likely to work part-time than non-outsourced cleaners. There is little difference in the incidence of part-time work for outsourced guards (Annex Figure 4.A.7). To estimate the difference in the incidence of part-time work between outsourced and in-house workers, the analysis again uses a linear probability model. The model is simpler than the one used for estimating differences in earnings (Section 4.3.2), and the dependent variable is a binary indicator of whether a worker worked part-time or not (see Annex 4.B).

The findings also suggest that the difference in the incidence of part-time work among cleaners does not appear to be voluntary. Figure 4.11 shows the incidence of involuntary part-time work between outsourced cleaners and guards adjusting for observable characteristics. In general, across OECD countries in the sample, outsourced cleaners are 7 percentage points more likely to work involuntarily part-time. The largest differences for cleaners are in Italy, Spain and Portugal. Although there is wide heterogeneity at the country level, on average there is little difference in the incidence of involuntary part-time work for guards.

Outsourced workers are less likely to participate in training

One theory for why wages may be lower for outsourced workers is reduced occupational mobility. Workers within a large firm with a diversity of occupations have access to internal job networks and training, which may facilitate their movement up the occupational job ladder into higher-paid occupations within that firm (Weil, 2014[14]). Having access to a continuum of occupations, which require progressively more qualifications and higher pay, may be enough for occupational mobility wage gains over a career. Recent research suggests that, if this ladder of occupational progression is removed as a result of outsourcing, workers who remain in the lead firm have much more difficulty being promoted (Le Moigne, 2020[54]).[19]

The data required to track occupational mobility within firms is beyond the scope of this chapter, but the analysis can examine one potential mechanism: training. The availability of an occupational ladder within firms is necessary for occupational mobility, but without training, it may not be sufficient. Training allows workers within firms to increase their competencies and skills, and compete for the higher paying jobs within a firm.

Security guards and cleaners are slightly less likely to receive training if they are outsourced. Security guards, in particular, experience a reduction in the probability of training if their jobs are outsourced. However, in many of the countries in the sample, the estimates are not statistically significant (Figure 4.12, Panel A). Exceptions are Australia, Sweden and France, where the probabilities of training are reduced by the greatest amount when workers are outsourced.

For cleaners, the estimates of the probability of training are more precise owing to greater sample sizes, but the pattern is largely the same (Panel B). Cleaners in Australia, France and the United Kingdom see the largest declines in the probability of training if their job is outsourced. Norway and the Slovak Republic are notable exceptions, as outsourced cleaners were more likely to train, all else equal, and the estimates are statistically significant.

In European OECD countries, outsourced workers are more likely to be on an open-ended contract

Across the OECD, but in particular in European OECD countries, whether a worker receives an open-ended contract or a contract of fixed duration is an important dimension of job quality. The incidence of fixed-term contracts has been mostly stable across OECD countries over the last decade, though it has increased slightly for new hires (OECD, 2014[28]). An open question, especially given the flexibility outsourcing offers to employers, is whether outsourced workers are more likely to have a fixed-term contract.

The previous section showed that workers whose jobs are outsourced earn lower wages. It is theoretically unclear what that implies for other aspects of job quality. It is possible that the lower wages of outsourced workers signal a general decline in job quality, including a greater likelihood of having a fixed-term contract. In contrast, lower wages may be a trade-off workers take in return for more secure employment in the form of an open-ended contract. In this scenario, outsourced workers would be less likely to hold fixed-term contracts.

Figure 4.11. Outsourced workers are more likely to work part-time involuntarily

Percentage point change in marginal propensity to work part-time involuntarily, by country
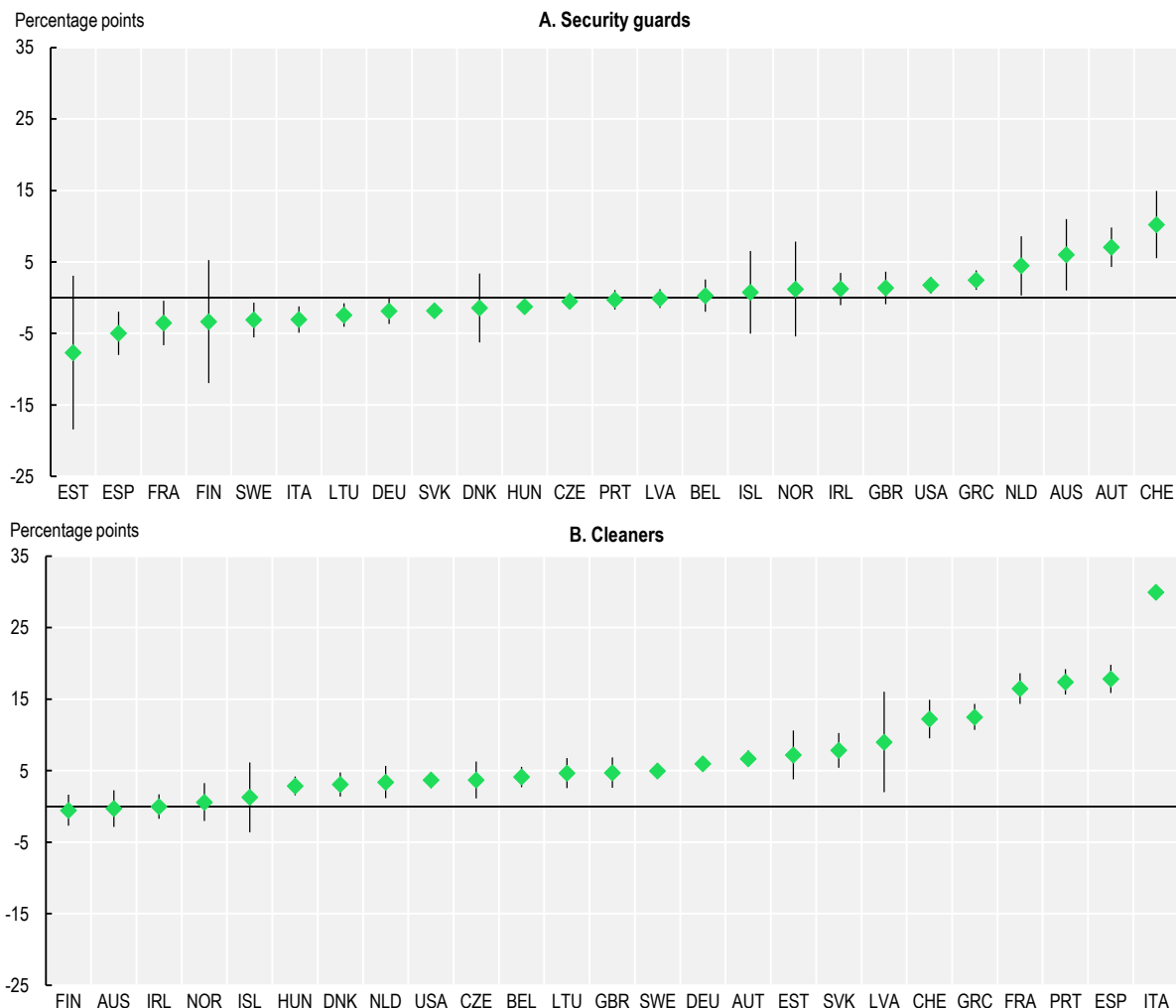
Note: Diamonds show the percentage point change in the marginal propensity to work involuntarily part-time from a linear probability model. Vertical lines show the 95% confidence interval of the point estimates. The European countries cover guards and cleaners aged 20 to 64 over the period 2011-19. Involuntarily part-time workers are those working part-time, who would like to work more hours or cannot find full-time employment. The United States covers guards and cleaners aged 20 to 64 over the period 2011-19. Workers are considered part-time for economic reasons if they worked fewer than 35 hours per week for economic reasons and available for full-time employment. Australia covers guards and cleaners aged 20 to 64 over the period 2001-19. Workers are considered part-time if they reported working less than 35 hours per week and are unable to find full time work.

Source: The European Labour Force Survey (EU-LFS) (European countries), the Current Population Survey (CPS) (United States) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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Figure 4.12. Outsourced workers are less likely to train

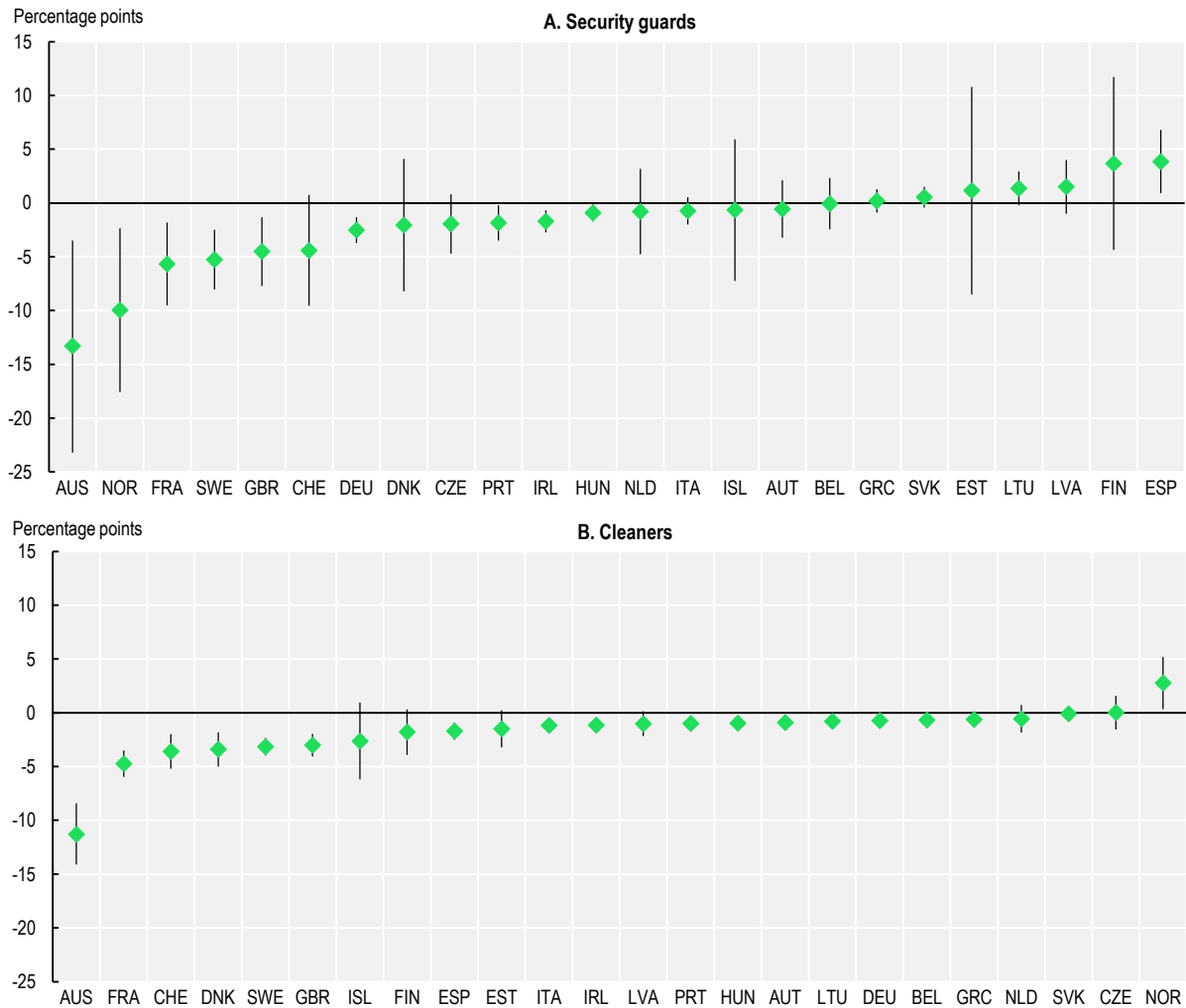Percentage point change in marginal propensity to receive training if outsourced, by country

Note: Diamonds show the percentage point change in the marginal propensity to train from a linear probability model on the propensity to train if outsourced. Vertical lines show the 95% confidence interval of the point estimates. The European countries cover guards and cleaners aged 20 to 64 over the period 2011-19. A worker participated in training if they took part in instruction outside of the formal education system in the last four weeks. Australia covers guards and cleaners aged 20 to 64 over the period 2001-19. A worker is considered to have taken place in a training if they answer "Yes" to "In the past 12 months, have you taken part in any training or employment scheme as part of your job?"
Source: The European Labour Force Survey (EU-LFS) (European countries) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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Across the OECD countries in the sample, outsourced workers are somewhat less likely to hold a fixed-term contract. Figure 4.13 plots the estimated coefficients for each country for both cleaners and security guards. As with part-time work and the incidence of training, estimates are the result of a linear probability model to adjust for observable differences between outsourced workers. For security guards, eight of the 17 countries show a significant decrease in the probability of holding a fixed-term contract for outsourced workers. In the Czech Republic, the Slovak Republic and Germany, outsourced security guards have a greater probability of being trained than their non-outsourced peers.

The same pattern holds for cleaners. For all countries in the sample (with the exception of the United Kingdom, Germany, the Slovak Republic and the Czech Republic), outsourced cleaners have a lower probability of holding a fixed-term contract (although the differences are not always statistically significant). In contrast to security guards, the estimated coefficients varied much less across countries with the majority hovering just below zero. In Greece, France and Hungary outsourced cleaners' probability of holding a fixed-term contract was 5 percentage points lower compared to non-outsourced workers.

Figure 4.13. Outsourced workers are less likely to be on a fixed-term contract

Percentage point change in marginal propensity to be on a fixed-term contract if outsourced, by country
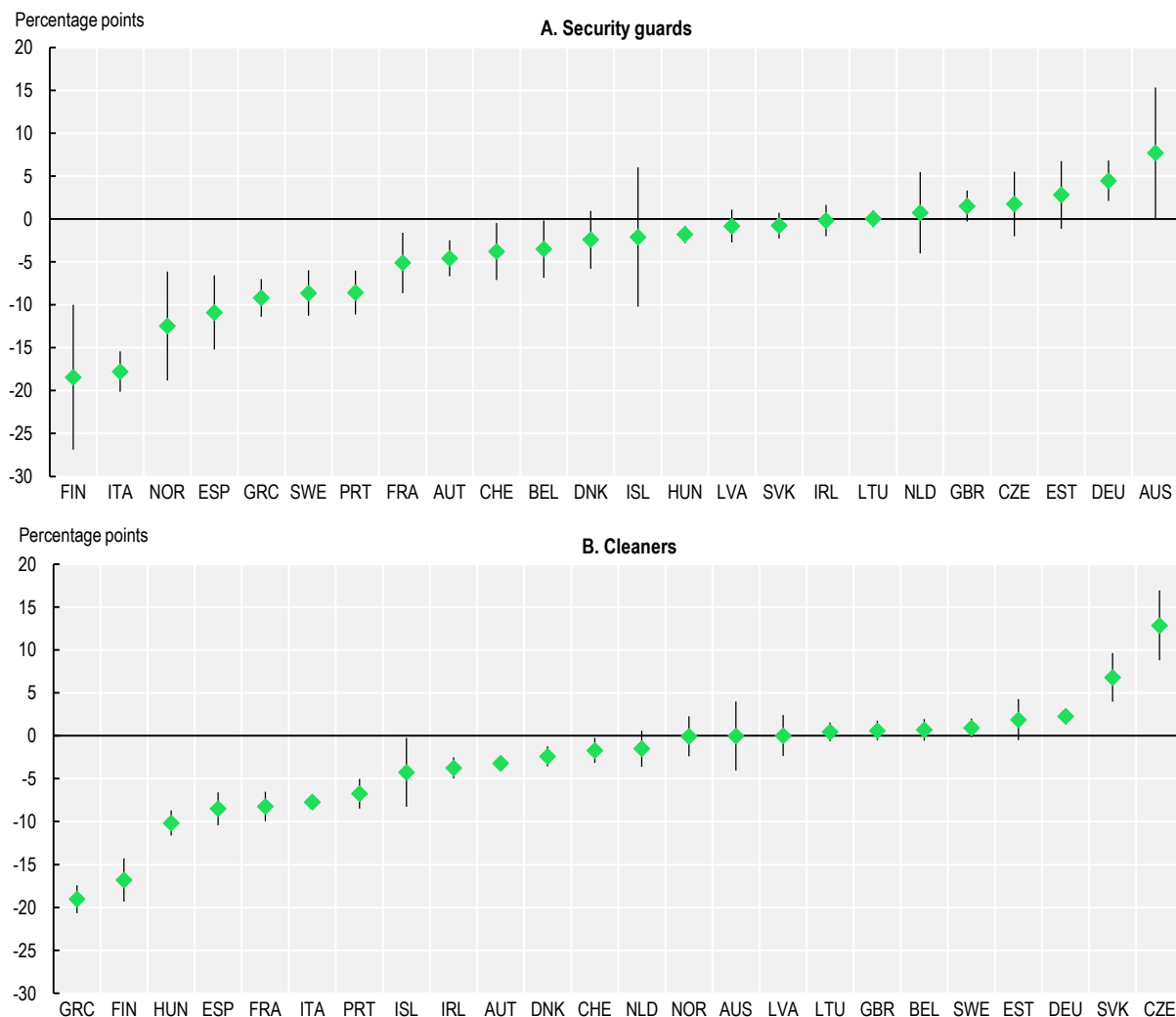
Note: Diamonds show the percentage point change in the marginal propensity to work on a fixed-term contract from outsourcing using a linear probability model. Vertical lines show the 95% confidence interval of the point estimates. The European countries cover guards and cleaners aged 20 to 64 over the period 2011-19. Australia covers guards and cleaners over the period 2001-19. Workers with a fixed-term contract include workers who have a fixed-term or casual contract.
Source: The European Labour Force Survey (EU-LFS) (European countries) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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4.3.4. Outsourcing, and the dual employers it often entails, may harm health, safety and labour standards compliance

The evidence presented so far in this chapter suggests that firms use outsourcing, among other reasons, to lower labour costs. The same competitive pressures that encourage firms to outsource workers may result in an environment that threatens occupational health and safety.

The structure of the employment relationships in outsourcing arrangements may lead to greater occupational injury. Since the lead firm does not directly employ outsourced workers, they may be operating in an unfamiliar environment with unfamiliar co-workers, equipment, and machinery (Menegatti, 2015[63]). In these triangular relationships, outsourced workers may also be unaware of who to report their injuries or grievances to before it is too late (Weil, 2020[64]). Since the relationship between workers and the host company is precarious, outsourced workers may be reluctant to complain in fear of losing their jobs, thus leaving incidents underreported (see Box 4.7).

Box 4.7. Franchising and occupational health

In May 2020, a multi-national coalition of unions filed suit with the OECD against McDonalds for "systematic sexual harassment". The OECD is not a judicial body, but its *Guidelines for Responsible Business Conduct* provide non-binding principles and standards for responsible business conduct, as well as a mediation and conciliation platform for resolving issues that may arise (OECD, 2011[65]). The complaint alleges that across OECD countries, female employees of the multinational corporation have been subjected to systematic harassment ranging from sexist comments to physical attacks (Zerouali, 2020[66]).

The franchising business likely plays a role in the alleged harassment. The franchisor, who often exerts control over employees and aspects of their working environment, is often able to deflect responsibility of non-compliance to the franchisees who are the legal employer. For example, in France, it is not mandatory for firms with less than 300 employees to have a *commission santé, sécurité et conditions de travail* (CSSCT), which is charged with helping to ensure the health and safety of employees in the firm. Many franchised brands collectively will have over 300 employees, but because they are broken up into independent franchisees, each a separate legal entity, it is unlikely most employees will be covered by a CSSCT. Regulatory thresholds, in particularly as regards health liabilities, have indeed been found to lead to affect the firm size distribution in France (Garicano, Lelarge and Van Reenen, 2016[67])

OECD countries take various approaches to ensure that occupational safety and health regulations cover all work arrangements. For example, Australia's harmonised Work Health and Safety laws place a statutory duty on "a person conducting business or undertaking", rather than an "employer" (Jhonstone and Stewart, 2015[68]). This includes, "employers, principal contractors, heath contractors, franchisors, and the Crown." Further, the duty of care is owed to "workers", rather than "employees." As a result, any worker assigned to work in the person's business or undertaking will be protected, including subcontractors and outworkers. This policy is in line with Weil's (2020[64]) suggestion that the most effective way to prevent incidents of workplace injuries among outsourced workers is to attach liability to work itself, rather than attaching it to the employer with whom a worker has a contract.

4.4. Concluding remarks

This chapter has documented trends in domestic outsourcing and examined some of its implications for OECD labour markets and job quality in low-paid occupations. Domestic outsourcing, or the contracting out of a firm's labour to third-party firms, is increasing in low-wage labour markets. The COVID-19 crisis has not dampened this trend and may have acted as an accelerant. The implications of domestic outsourcing for OECD labour markets and job quality offer reasons for both optimism and concern, which countries may want to address.

The analysis in this chapter and recent academic research suggest that domestic outsourcing may lead to higher earnings inequality. The results in this chapter, along with a growing body of academic research, suggest that the earnings penalties for at least some outsourced jobs are real. It is important to stress that the results in this chapter only hold for cleaners and guards. Academic research generally confirms these findings, but extends these results to a larger set of low-wage occupations. Further research is needed to see if these results hold for a broader set of occupations including high-wage occupations, and workers who remain in the lead firm after certain occupations are outsourced. Expanding the types of workers potentially impacted by outsourcing will also help determine the full impact of outsourcing on rising earnings inequality.

It is clear that there are practical and legitimate business needs for outsourcing some domestic employment. However, with the exception of the couple of recent studies for France highlighted in this chapter, the productivity gains resulting from outsourcing are still to be confirmed empirically and warrant further research.

While the incidence and implications of domestic outsourcing have received increased attention from researchers, it is a topic that has attracted relatively little interest from policy makers in recent years. This may be partly due to the fact that the concept is difficult to measure. There are some policies, however, that may allow OECD labour markets to capture productivity enhancements while allowing affected workers to enjoy some of the resulting benefits.

One policy area concerns the terms of employment when employees shift from one firm to another. For example, under an EU directive, when a firm moves employees to another firm due to a transfer, merger, divestiture or takeover, there is a legal requirement to maintain the pay, working conditions and collective agreements of the affected workers (EU Council Directive, 2001[69]). Whether this EU directive is applicable in the case of employee transfers while outsourcing, and how long the maintenance of employment conditions lasts in practice, is an open question and often depends on whether the outsourcing event qualifies as a transfer. In addition, a firm could always restructure its operations, eliminate certain jobs and resort to outsourced labour services provided by different staff hired by an outsourcing company, and thereby avoid the obligations imposed by the EU directive. In practice, the empirical findings in this chapter show that outsourced cleaners and guards earn less, and the academic literature tends to suggest that pay levels do not remain at their previous levels for workers in outsourced jobs (at least not for very long).

A second policy area that merits further examination concerns the labour laws that determine who is an employer and what responsibilities the various employing entities have towards workers. This becomes particularly challenging when there are three parties involved. There is extensive literature on regulations for temporary work agency employment (OECD, 2014[28]) that may be useful for outsourcing as well. Work health and safety laws in Australia, for example, place non-transferrable duties on principal contractors as well as those persons with management and control of workplaces. In English-speaking countries, discussion of outsourcing often focuses on the idea of granting joint employer status, in which both the lead and contracting firms would be considered legal employers of outsourced workers (OECD, 2019[29]). The full implications of these policies for outsourcing remain unclear, however.

Future policy discussions should also concentrate on the role of collective bargaining agreements. Many European OECD countries rely on sectoral agreements, but it is often unclear which agreement applies to

those in outsourced jobs. For example, if a manufacturing firm decides to outsource its security guards to a security firm, would the guards be covered by the manufacturing sector agreement or that of the support services industry? The regulation of temporary agency work may provide a model for domestic outsourcing more broadly. In the Netherlands, for example, temporary agency workers and certain other on-site contractors must be paid according to the lead firm's collective agreement for similar jobs (de Graaf-Zijl, Scheer and Bolhaar, 2018[70]). In addition, in a number of OECD countries, the collective agreement that applies to the temporary agency workforce is the one with the most favourable provisions for the worker (OECD, 2014[28]). Similar arrangements could be made to allow outsourced workers access to a lead firm's internal training and job opportunities.

The level of collective bargaining should also be considered. Australia has a form of wage regulation via the "Modern Awards" system, which is a combination of occupation- and industry-based wage floors (OECD, 2019[71]). This chapter finds that, regardless of the country and collective bargaining system, outsourcing leads to lower wages for outsourced workers. However, sectoral or national collective agreements may wish to consider certain inter-industry occupational wages, particularly for occupations found in almost all industries. This might prevent outsourcing decisions that bring no productivity improvement but are made purely with the aim of exploiting different wage levels for the same occupations in different industries where the tasks performed are largely the same.

The effects of employment protection legislation on the incidence of domestic outsourcing remains a question for future research. This chapter finds that outsourced cleaners and guards are more likely to be employed on indefinite contracts. For countries with strict or costly rules regulating dismissals of workers on permanent contracts, one possible interpretation of this result is that firms may prefer to outsource occupations that are not core to the firm's main business activity, but whose services they require on an open-ended basis, because terminating a contract for services is simpler and less risky than terminating a labour contract.[20] This interpretation is not confirmed in the chapter, but it serves to highlight the need for more research on the interplay between employment protection legislation and domestic outsourcing.

Finally, better data collection to identify the incidence and diversity of tripartite employment relationships is paramount. Currently, statistical agencies make some effort to identify temporary work agency employment, and some types of self-employment at irregular frequencies. This chapter argues that the extent of domestic outsourcing is much broader, and better data collection would help to confirm the extent of domestic outsourcing in a broader set of industries and occupations.

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Annex 4.A. Additional figures

Annex Figure 4.A.1. Share of intermediate consumption spent on other business services, 2005 and 2015
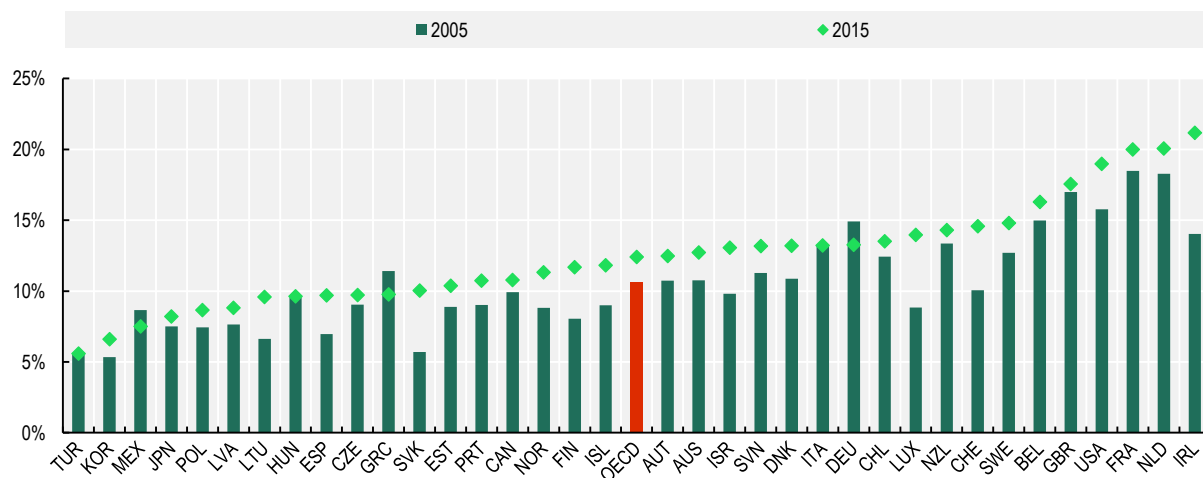
Note: The OECD is an unweighted average and excludes Colombia.
Source: OECD STAN Industrial Analysis (2020 ed.)

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Annex Figure 4.A.2. Own-account work is falling slightly across the United States and European OECD countries

Own-account self-employed as a share of all employment, 1995, 2005 and 2019
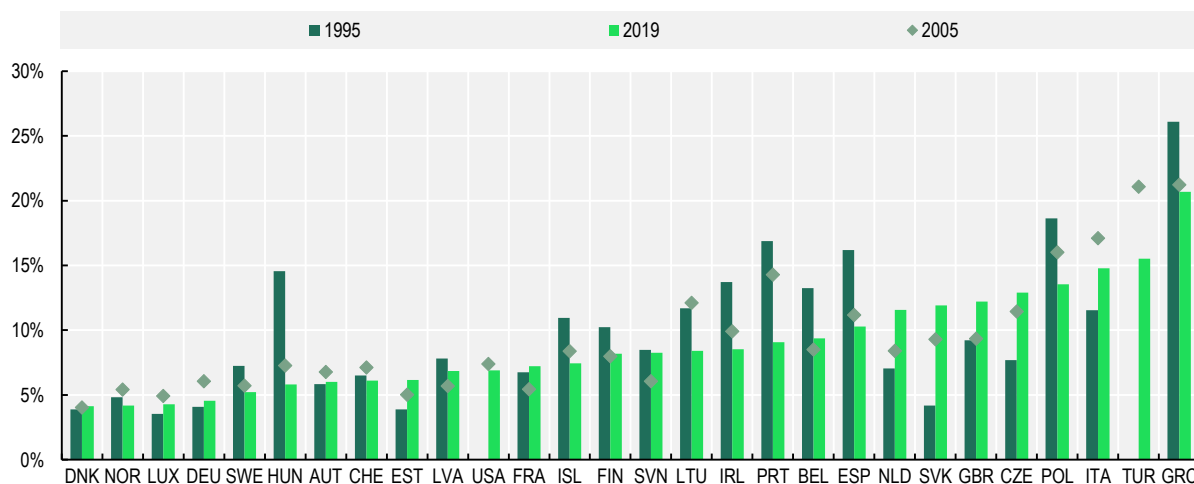
Note: Year 1995 refers to 1996 for Hungary, Slovenia and Switzerland, to 1997 for the Czech Republic, Estonia and Poland and to 1998 for Austria, Latvia, Lithuania and the Slovak Republic. Year 2005 refers to 2006 for Turkey. Year 2019 refers to 2017 for the United States and the series to independent contractors.
Source: The European Labour Force Survey (EU-LFS) and the Current Population Survey (CPS) February 2005 and May 2017 Contingent and Alternative Employment Arrangements supplement for the United States.

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Annex Figure 4.A.3. Earnings distributions of cleaners, by outsourcing assignment

Note: Panel A consists of cleaners aged 20-64 years old (defined by ISCO 08 code 911 or 515, "Domestic, Hotel and Office Cleaners and Helpers", and "Building and Housekeeping Supervisors", respectively) across European OECD countries (excluding Turkey and including Iceland) over years 2011-18. Cleaners are outsourced if they work in NACE Rev. 2 Industry N "Administrative and support services". Panel B consists of employed cleaners aged 20 to 64 over the period 2001-19 who reported that their main occupation was Cleaner and Laundry Workers (ANZSCO 2006 Code 81). Cleaners were identified as outsourced if the reported industry for their main job was Building Cleaning, Pest Control, and Other Support Services (ANZSIC 2006 Code 73). The deciles were created using usual weekly earnings. Panel C consists of employed cleaners (excluding self-employed) aged 20 to 64 over the period 2011-19 whose reported occupation for their main job was Janitors and Building Cleaners (Census 2012 Occupation Code 4 220). Cleaners were identified as outsourced if the reported industry for their main job was Services to Buildings and Dwellings (Census 2002 Industry Code 7690). The deciles were created using usual weekly earnings.
Source: The European Labour Force Survey (EU-LFS) (European countries), the Current Population Survey (CPS) (United States) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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Annex Figure 4.A.4. Earnings distributions of guards, by outsourcing assignment

Note: Panel A consists of guards (defined by ISCO-08 code 541, "Protective services workers") across European OECD countries (excluding Turkey and including Iceland) over the period 2011-19. Guards are outsourced if they work in NACE Rev. 2 Industry N "Administrative and support services". Panel B consists of employed guards aged 20 to 64 over years 2001-19 who reported that their main occupation was Protective Service Workers (ANZSCO 2006 Code 44). The deciles in Australia were determined using usual weekly earnings. Guards were identified as outsourced if the reported industry for their main job was Other Business Activities (ISIC 3.1 Code 74). Panel C consists of employed (excluding self-employed) guards aged 20 to 64 over the period 2011-19 whose reported occupation for their main job was Guard (Census 2012 Occupation code 3930). Guards were identified as outsourced if their reported industry for their main job was Investigation and Security Services (Census 2002 Industry Code 7680). The deciles in the United States were created using usual weekly earnings.

Source: The European Labour Force Survey (EU-LFS) (European countries), the Current Population Survey (CPS) (United States) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

StatLink 🔗 https://stat.link/w708gs

Annex Figure 4.A.5. Complementary cumulative distribution and counterfactual complementary cumulative distribution for cleaners in the presence of outsourcing, select European countries

Note: The darker line is one minus the cumulative distribution function for cleaners across the overall monthly earnings distribution. The lighter line is the regression-adjusted distribution for the effect of outsourcing. Regression is a linear probability model of whether a worker is above the given decile. Stars on the decile denote the difference is significant at the 95% confidence interval.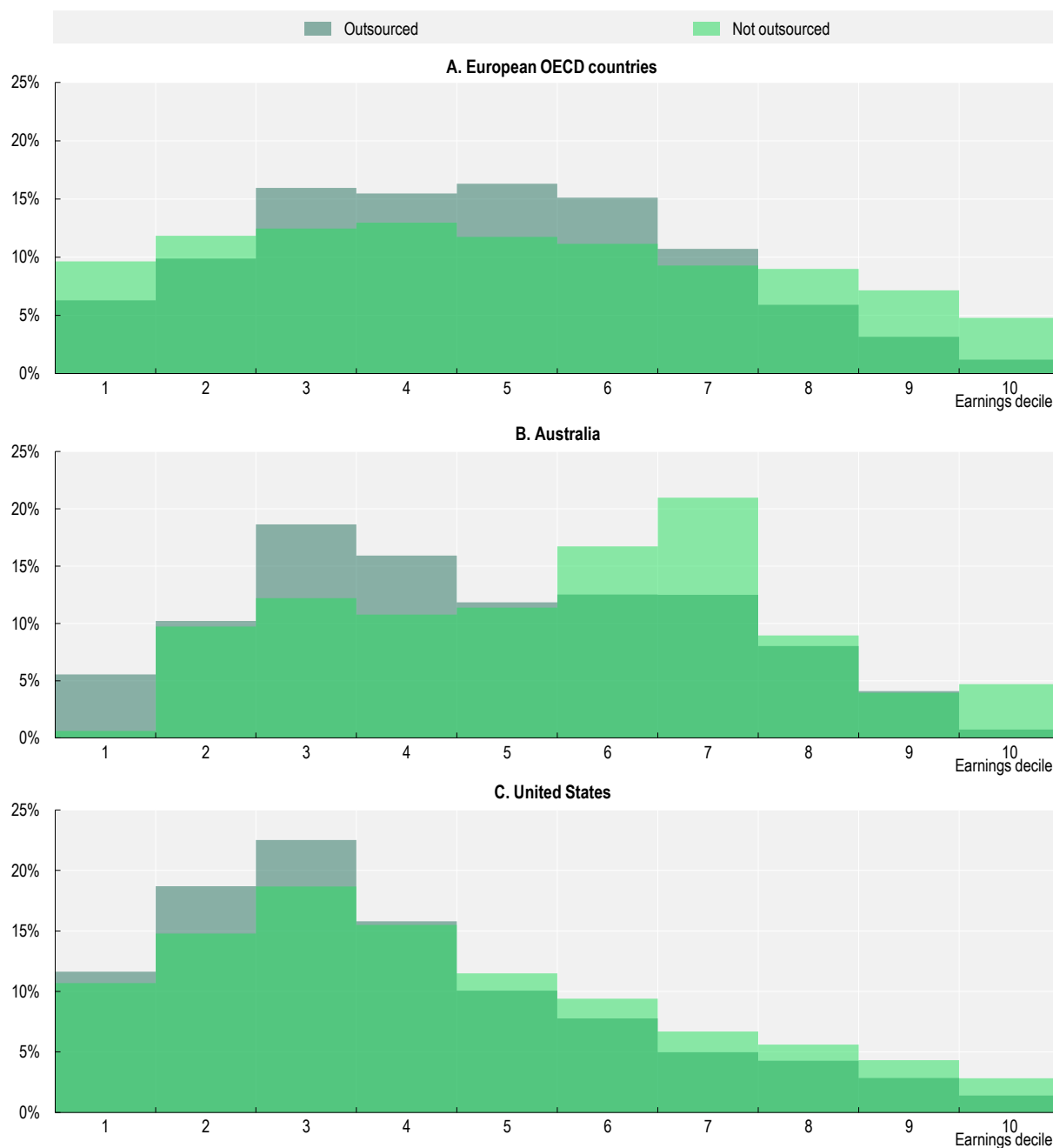 The panels of cleaners aged 20-64 years old (defined by ISCO 08 code 911 or 515, "Domestic, Hotel and Office Cleaners and Helpers", and "Building and Housekeeping Supervisors", respectively) over years 2011-18. Cleaners are outsourced if they work in NACE Rev. 2 Industry N "Administrative and support services".
Source: The European Labour Force Survey (EU-LFS).

StatLink 🔗 https://stat.link/487mix

Annex Figure 4.A.6. Complementary cumulative distribution and counterfactual complementary cumulative distribution for security guards in the presence of outsourcing, select European countries
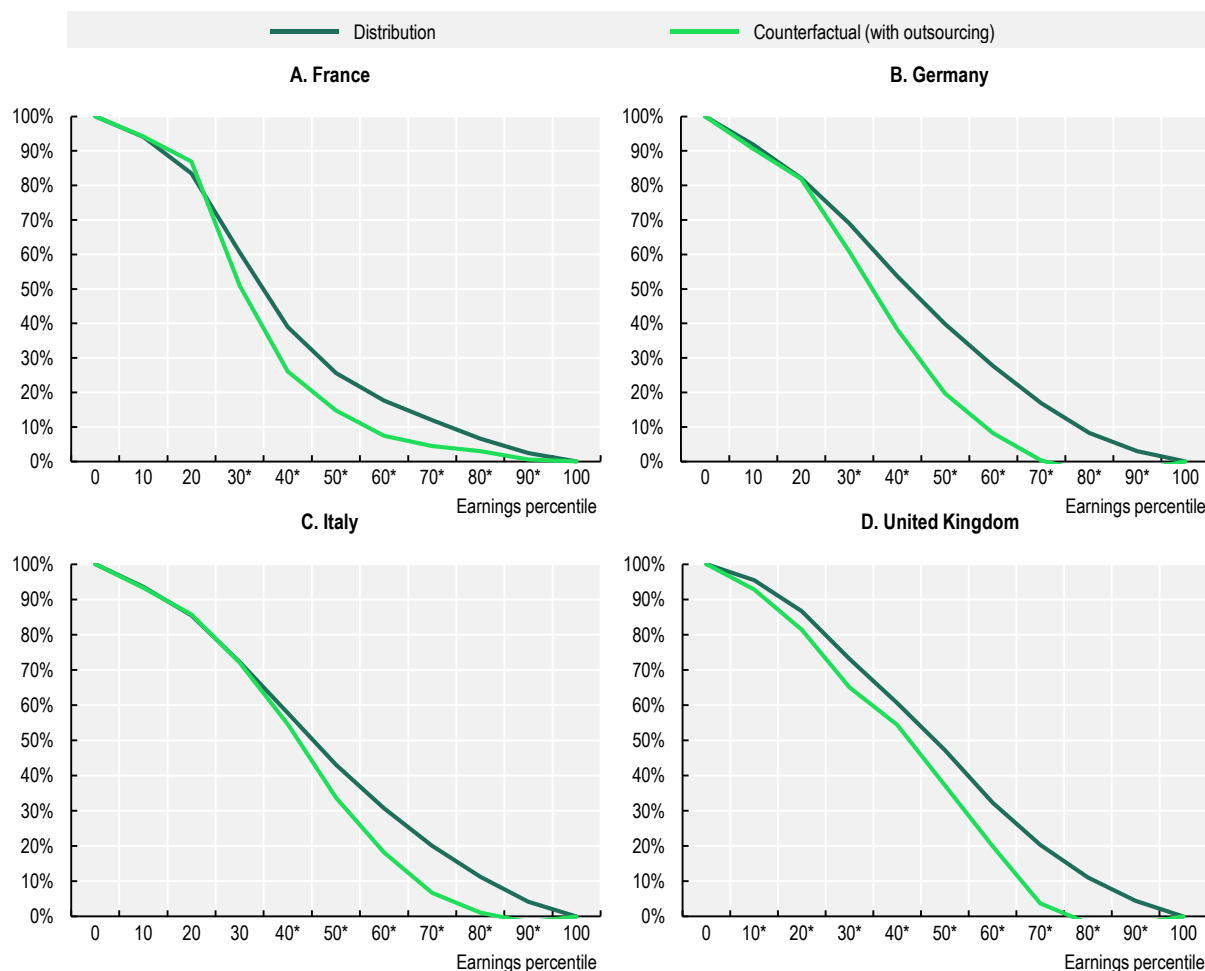
Note: The darker line is one minus the cumulative distribution function for security guards across the overall monthly earnings distribution. The lighter line is the regression-adjusted distribution for the effect of outsourcing. Regression is a linear probability model of whether a worker is above the given percentile. Stars on the percentile denote the difference is significant at the 95% confidence interval. The panels consist of guards (defined by ISCO-08 code 541, "Protective services workers") over the period 2011-19. Guards are outsourced if they work in NACE Rev. 2 Industry N "Administrative and support services".
Source: The European Labour Force Survey (EU-LFS).

StatLink 🔗 https://stat.link/zfnd3s

Annex Figure 4.A.7. Outsourced cleaners are more likely to be hired part-time

Percentage point change in marginal propensity to work part-time, by country
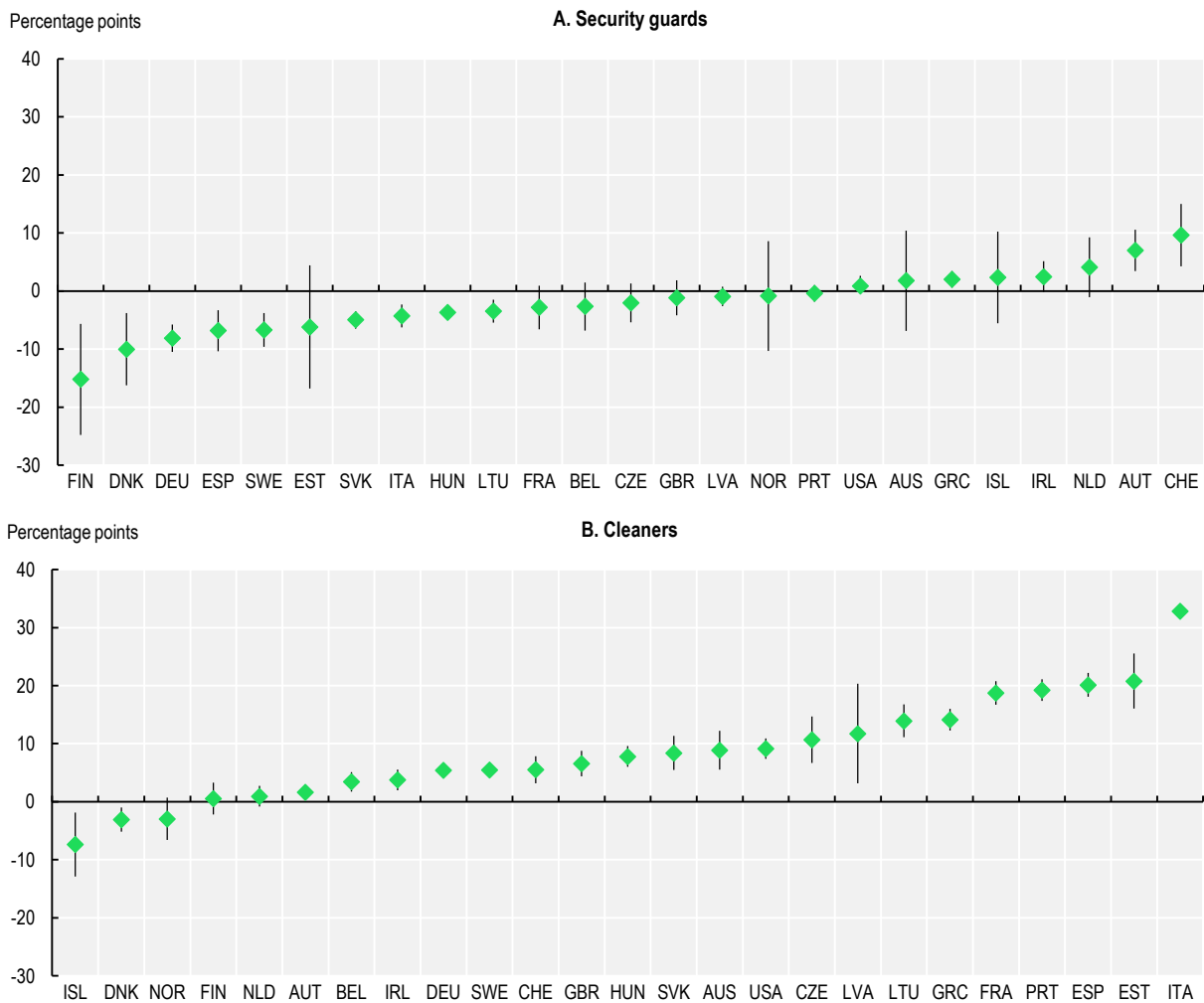
Note: Diamonds show the percentage point change in the marginal propensity to work part-time from a linear probability model on the propensity to work part-time if outsourced. Vertical lines show the 95% confidence interval of the point estimates. The European countries cover 76 274 guards and 413 268 cleaners over the period 2011-19. The United States covers 6 988 guards and 16 884 cleaners aged 20 to 64 over the period 2011019. Workers are considered part-time for economic reasons if they reported their job is part-time. Australia covers 672 guards and 3 232 cleaners aged 20 to 64 over the period 2001-19. Workers are considered part-time if they reported working less than 35 hours per week.
Source: European Labour Force Survey (EU-LFS), HILDA, the United States Current Population Survey (CPS).

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Annex 4.B. Details on regression results

This annex provides supporting documentation and robustness checks for the regression results found in Section 4.3. The first subsection describes in more detail some considerations for estimating distribution regressions (Section 4.3.2) particularly as it relates to using the earnings decile indicators in the European Labour Force Survey (EU-LFS). The second subsection details the binary regression models for indicators of job quality (Section 4.3.3), and shows their robustness to some different modelling assumptions.

Discussion and robustness of distribution regressions for earnings

This section provides additional detail for the distribution regressions from Section 4.3.2. The discussion draws heavily on Chernozhukov, Fernández-Val and Melly, (2013[55]) (henceforth CFM) and Dube, (2019[56]). The section discusses practical considerations for distribution regressions as well as its advantages and shortcomings in general, but particularly as applied to the empirical work in this chapter using the European Labour Force Survey (EU-LFS). The discussion will also introduce some possible extensions for future work. The interested reader should consult CFM for a theoretical discussion and Dube for an applied example of the points discussed in this section.

Conditional distribution regressions allow one to characterise how a policy shifts the distribution of interest, and they have some advantages over estimating only the mean effect. The parameter estimate of a least squares regression of outsourcing a cleaner on log monthly earnings, for example, returns the approximate average percentage change in earnings from outsourcing. This is often a useful statistic, but it can also leave the analyst to wonder whether the result has economic or real-world significance (leaving aside statistical significance). A distribution regression allows one to make statements about how a policy may change the earnings distribution for treated units. In addition, and of particular interest when using the EU-LFS, distribution regressions do not require continuous real-valued measures of the outcome of interest. Access to the underlying continuous distribution of the outcome variable is desirable, as will be shown, but it is not necessary.

To fix ideas, the rest of this section proceeds by way of example. The example will consider the reverse cumulative distribution (RCDF) of monthly earnings of cleaners in a particular country in a fixed year, $F_A(y^*)$, where $y^* \in Y$. The variable y^* is monthly earnings, and $Y \subseteq \mathbf{R}^+$ is its support. The results in the literature are derived for the CDF, but this discussion will keep with the convention used in the text. Constraining the discussion to one occupation, in one country, in a fixed year simplifies the discussion without a loss of generality. The results generalise to guards as well.

In addition to the actual distribution of cleaners' earnings, one needs to estimate a distribution regression to construct the counterfactual distribution. The regressions in the text use a standard linear probability model, but the theory is flexible and neither the dependent variable nor the treatment need to be continuous. In addition, the model allows for common link functions including probit, logit, log-log etc. The distribution regression below is slightly altered from the one in the text:

$$y_{i,y^*} = \beta_{y^*} * outsource_i + X_{i,} + \varepsilon_{i,y^*}$$

The dependent variable, y_{i,y^*}, is a binary indicator equal to one when a cleaner i has monthly earnings greater than y^*, $y_{i,y^*} = \mathbf{1}\{y_i^* > y^*\}$. The variable $outsource_{i,}$ is the indicator of interest and takes a value of one if a cleaner is working in the business services industry and 0 otherwise, while X_i is a vector of covariates. The last component, ε_{i,y^*}, is the error term. The counterfactual distribution, $F_B(y^*)$, is the result

of adding the result from the distribution regression to the actual distribution, $F_B(y^*) = F_A(y^*) + \hat{\beta}_{y^*}$. The resulting counterfactual distribution is the result of *conditioning*, or holding constant, the other covariates.

The difference between the more theoretical example discussed here, and the discussion in the text, is the choice of cut-offs for the family of regressions indexed by y^*. In theory, and in the example in this section, one could run an infinite number of regressions because they are defined by a cut-off in the set of the support of monthly earnings. In practice, one should run as many regressions (use as many cut-offs) as feasible. In addition, samples are finite in labour force surveys, and marginal changes in the cut-off will only provide additional information about the shape of the counterfactual distribution if they induce observations in the sample to cross the cut-off.

When using the EU-LFS for distribution regressions, one is additionally constrained by nine pre-selected cut-offs. The EU-LFS does not provide a continuous monthly earnings variable, rather an indicator for the earnings decile in which a given observation is located. The deciles are determined based on the *overall* monthly earnings distribution and not for a given subset of the data like cleaners, for example. One can only run a maximum of nine regressions corresponding to overall monthly earnings deciles one to nine.

The imposed choice of cut-offs by the EU-LFS creates some downsides to using distribution regressions. First, the number of cut-offs is relatively small, and they are not picked optimally to trace the most accurate counterfactual distribution possible. The latter point is well illustrated by focusing on cleaners. In most countries analysed in this chapter, over 80% of cleaners earn below the 50th percentile of overall monthly earnings. It is a low-pay occupation. If one is constrained to nine cut-offs in the distribution regressions, one would ideally locate all but probably one, or even all, of the cut-offs below the 50th percentile of overall earnings. This is where the distribution is dense in cleaners. With the EU-LFS, four cut-offs are located above the 50th percentile including cut-offs at the 80th and 90th percentile where the distribution of cleaners is sparse. These regressions will not provide much information, and in the regressions in this chapter, many of these regressions result in statistically insignificant estimates.

Second, the resulting distributions lack the correct scale. The figures in this chapter present the results of the conditional distribution regressions in a linearly interpolated continuous RCDF. The deciles are shown spaced in equal distances across the (latent) support of monthly earnings. Given the current earnings distributions in most OECD countries, this is not accurate. Most OECD countries have a long right tail in the earnings distribution. In practice, this means that the distance between the 40th and 50th percentiles of the earnings distribution will be much closer than the distance between the 80th and 90th percentiles, for example. For the results in this chapter, this has little practical importance, but it is worth bearing in mind for future work.

There are some advantages, however, to having a dataset with uniformly selected earnings percentiles across countries. The most obvious is that it allows for easy cross-country comparisons without the difficulty of harmonising the earnings distributions. There are OECD countries where the support of monthly earnings for cleaners, for example, may not overlap, or only slightly. If one wants to compare cleaners in these countries, constraining the results to percentiles of the overall earnings distribution is a convenient way to compare results. In addition, using percentiles of the overall earnings distribution makes practical salience easier to convey. Statements about the earnings distribution of cleaners is likely hard to conceptualise, but explaining how cleaners shift in the overall earnings distribution resonates more clearly. Finally, the extension of unconditional quantile partial effects falls out naturally from using percentiles of the underlying distribution.

Before moving on to some robustness checks, it is worth mentioning a nice complement to the distribution regressions, unconditional quantile partial effects (UQPE). UQPE give the effect of outsourcing (or any treatment) at arbitrary quantiles of the distribution of the dependent variable. The UQPE obtains by inverting the actual distribution and counterfactual distribution obtained from the distribution regressions, or by taking linear approximations using recentered influence functions (Firpo, Fortin and Lemieux, 2009[72]). UQPE is different from the conditional quantile partial effect (CQPE), which is the quantile

regression usually most familiar to social scientists (Koenker and Bassett, 1978[73]). UQPE controls for differences in the covariate distribution rather than conditioning on them (hence unconditional). For many policy interventions one would like to study, this is the ideal approach. For a univariate, binary, treatment like outsourcing, UQPE is simply the estimate from distribution regressions scaled by the density of the earnings distribution at that particular decile. The latter is hard to estimate precisely with deciles of the earnings distribution, but one can estimate it roughly from the data provided in the chapter if desired.

The following tables provide robustness checks to some of the assumptions and issues previously discussed in this section.

- Annex Table 4.B.1 gives the underlying parameter estimates from the distribution regressions found in figures Figure 4.9 and Figure 4.10, as well as for four additional countries whose results are depicted graphically in Figures Annex Figure 4.A.5 and Annex Figure 4.A.6. The additional countries, Germany, the United Kingdom, France and Italy are all large European OECD countries. The estimates of these four countries confirm the results of European OECD countries pooled in the chapter.

- Annex Table 4.B.2 shows the mean (ordinary least squares) effect of outsourcing on log usual earnings for the United States and Australia, which have a continuous monthly earnings variable. The results are negative, and consistent with the distribution results in the chapter. The chapter also includes a replication of Dube and Kaplan, (2010[6]) tables 3a and 3b, line 1. The results are close, but do not completely match, as might be expected. The chapter uses usual earnings and not wages.

- Annex Table 4.B.3 (cleaners) and Annex Table 4.B.4 (security guards) show the results from the linear probability model of the distribution regressions side-by-side with the same models estimated using logit and probit models. For both occupations and the three country groupings, the results are quite similar across models.

- Annex Table 4.B.5 shows comparison of the distribution regressions with a conditional quantile model (CQPE). These are the conditional quantile results for the effect of outsourcing on earnings, and only for the United States because one needs a continuous earnings variable. These are *not* the UQPE discussed above, but given the greater familiarity with this class of models, these results are included for comparison, though they need not produce the same results. In fact, (conditional) quantile regressions provide estimates of the effect of outsourcing on given conditional quantiles of earnings, which gives information on how outsourcing affects those with low or high earnings *within their demographic group*. For example, consider the first decile and a regression controlling for education levels only. The coefficient for the first decile would tell us how outsourcing affected those with low earnings within their educational group, and not, as distribution regressions or UQPE, the effect of outsourcing on the bottom decile of the distributions – see also Dube (2019[56]).

Annex Table 4.B.1. Results of distribution regressions by country

	Dependent variable: Earnings decile						
	Country/Region						
	USA	AUS	Europe	DEU	GBR	FRA	ITA
Decile	**A. Cleaners**						
1	-0.04	-0.18	-0.05	-0.02	-0.06	-0.06	-0.09
	(0.006)	(0.014)	(0.003)	(0.005)	(0.011)	(0.009)	(0.004)
2	-0.09	-0.10	-0.09	-0.04	-0.05	-0.09	-0.18
	(0.008)	(0.015)	(0.003)	(0.005)	(0.012)	(0.009)	(0.005)
3	-0.08	-0.06	-0.09	-0.06	-0.03	-0.10	-0.15
	(0.008)	(0.014)	(0.003)	(0.005)	(0.011)	(0.009)	(0.004)
4	-0.05	-0.03	-0.07	-0.06	-0.02	-0.07	-0.09
	(0.008)	(0.011)	(0.002)	(0.004)	(0.010)	(0.007)	(0.003)
5	-0.04	-0.01	-0.04	-0.05	0.00	-0.03	-0.04
	(0.006)	(0.009)	(0.002)	(0.003)	(0.008)	(0.005)	(0.003)
6	-0.02	0.00	-0.02	-0.04	0.00	-0.01	-0.02
	(0.005)	(0.007)	(0.001)	(0.003)	(0.006)	(0.004)	(0.002)
7	-0.01	0.01	-0.01	-0.02	0.00	-0.01	-0.01
	(0.004)	(0.006)	(0.001)	(0.002)	(0.004)	(0.003)	(0.001)
8	0.00	0.00	0.00	-0.01	0.00	0.00	0.00
	(0.003)	(0.004)	(0.001)	(0.001)	(0.003)	(0.002)	(0.001)
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.002)	(0.003)	(0.000)	(0.001)	(0.002)	(0.001)	(0.000)
Time Effects	X	X	X	X	X	X	X
Country Effects			X				
Region Effects	X	X					
Observations	16 200	3 232	305 311	67 444	4 339	18 058	51 347
Decile	**B. Guards**						
1	-0.01	-0.04	0.002	-0.01	-0.03	0.00	0.00
	(0.006)	(0.015)	(0.004)	(0.007)	(0.010)	(0.012)	(0.007)
2	-0.06	0.02	0.006	0.00	-0.05	0.03	0.00
	(0.009)	(0.026)	(0.006)	(0.010)	(0.017)	(0.020)	(0.010)
3	-0.12	-0.01	-0.031	-0.08	-0.08	-0.10	0.00
	(0.012)	(0.029)	(0.007)	(0.012)	(0.021)	(0.027)	(0.013)
4	-0.12	-0.08	-0.052	-0.15	-0.06	-0.13	-0.03
	(0.012)	(0.034)	(0.008)	(0.013)	(0.024)	(0.027)	(0.014)
5	-0.10	-0.08	-0.087	-0.20	-0.10	-0.11	-0.09
	(0.011)	(0.038)	(0.007)	(0.014)	(0.026)	(0.024)	(0.014)
6	-0.08	-0.11	-0.115	-0.19	-0.12	-0.10	-0.12
	(0.009)	(0.039)	(0.007)	(0.013)	(0.027)	(0.021)	(0.014)
7	-0.05	-0.07	-0.120	-0.17	-0.17	-0.08	-0.13
	(0.008)	(0.032)	(0.006)	(0.012)	(0.024)	(0.019)	(0.013)
8	-0.04	-0.04	-0.082	-0.11	-0.13	-0.04	-0.10
	(0.006)	(0.025)	(0.005)	(0.008)	(0.020)	(0.014)	(0.011)
9	-0.03	-0.05	-0.04	-0.06	-0.06	-0.02	-0.06
	(0.004)	(0.017)	(0.003)	(0.005)	(0.014)	(0.008)	(0.007)
Time Effects	X	X	X	X	X	X	X
Country Effects			X				
Region Effects	X	X					
Observations	6 695	672	55 470	7 660	1 265	2 045	7 636

Note: The dependent variable is monthly earnings in or above the reported decile. The deciles in Australia and the United States were determined using usual weekly earnings. For each decile, the reported coefficients refer to a binary indicator of outsourcing. In Panel A, For European OECD countries the sample consists of cleaners aged 20-64 years old (defined by ISCO 08 code 911 or 515, "Domestic, Hotel and Office Cleaners and Helpers", and "Building and Housekeeping Supervisors", respectively) across European OECD countries (excluding Turkey and including Iceland) over years 2011-18. Cleaners are outsourced if they work in NACE Rev. 2 Industry N "Administrative and support services". For Australia the sample consists of employed cleaners aged 20 to 64 over the period 2001-19 who reported that their main occupation was Cleaner and Laundry Workers (ANZSCO 2006 Code 81). Cleaners were identified as outsourced if the reported industry for their main job was Building Cleaning, Pest Control, and Other Support Services (ANZSIC 2006 Code 73). For the United States the sample consists of employed cleaners (excluding self-employed) aged 20 to 64 over the period 2011-19 whose reported occupation for their main job was Janitors and Building Cleaners (Census 2012 Occupation Code 4220). Cleaners were identified as outsourced if the reported industry for their main job was Services to Buildings and Dwellings (Census 2002 Industry Code 7690). In Panel B, for European countries the sample consists of guards (defined by ISCO-08 code 541, "Protective services workers") across European OECD countries (excluding Turkey and including Iceland) over the period 2011-19. Guards are outsourced if they work in NACE Rev. 2 Industry N "Administrative and support services". For Australia the sample consists of employed guards aged 20 to 64 over years 2001-19 who reported that their main occupation was Protective Service Workers (ANZSCO 2006 Code 44). Guards were identified as outsourced if the reported industry for their main job was Other Business Activities (ISIC 3.1 Code 74). For the United States the sample consists of employed (excluding self-employed) guards aged 20 to 64 over the period 2011-19 whose reported occupation for their main job was Guard (Census 2012 Occupation code 3930). Guards were identified as outsourced if their reported industry for their main job was Investigation and Security Services (Census 2002 Industry Code 7680). All models include control variables for time fixed effects, education, a log of hours per week, and an age polynomial. European OECD countries include country fixed effects while United States and Australia include region fixed effect.
Source: The European Labour Force Survey (EU-LFS) (European countries), the Current Population Survey (CPS) (United States) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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Annex Table 4.B.2. Average effect of outsourcing on wages by gender

Effect of Outsourcing on Log Wages – the United States		
(1) Baseline	(2) Baseline (Female)	(3) Baseline (Male)
A. Cleaners		
United States (2011-19)		
-0.06	-0.05	-0.05
(0.009)	(0.014)	(0.013)
Dube and Kaplan (1983-2000)		
-0.06	-0.04	-0.05
(0.006)	(0.010)	(0.008)
Australia (2001-19)		
-0.01	-0.04	0.01
(0.019)	(0.025)	(0.033)
B. Security Guards		
United States (2011-19)		
-0.13	-0.10	-0.14
(0.012)	(0.027)	(0.014)
Dube and Kaplan (1983-2000)		
-0.21	-0.20	-0.21
(0.010)	(0.028)	(0.011)
Australia (2001-19)		
-0.10	-0.05	-0.13
(0.037)	(0.096)	(0.042)

Note: The dependent variable for the United States is the log of weekly earnings divided by weekly hours. The sample consists of cleaners and guards whose reported occupation for their main job was Janitors and Building Cleaners (Census 2012 Occupation Code 4220) or Guard (Census 2012 Occupation code 3930). Cleaners were identified as outsourced if the reported industry for their main job was Services to Buildings and Dwellings (Census 2002 Industry Code 7690). Guards were identified as outsourced if their reported industry for their main job was Investigation and Security Services (Census 2002 Industry Code 7680). The dependent variable for the Australian model is the log of weekly earnings divided by weekly hours. The sample consists of cleaners and guards who reported that their main occupation was Cleaner and Laundry Workers (ANZSCO 2006 Code 81) or Protective Service Workers (ANZSCO 2006 Code 44). Cleaners were identified as outsourced if the reported industry for their main job was Building Cleaning, Pest Control, and Other Support Services (ANZSIC 2006 Code 73). Guards were identified as outsourced if their reported industry for their main job was Investigation and Security Services (Census 2002 Industry Code 7680). All models include control variables for time fixed effects, education, a log of hours per week, region fixed effects, and an age polynomial. The United States (2011-19) model and Australian (2001-19) model restricted age to 20 to 64 while the Dube and Kaplan model did not include any age restrictions.
Source: The Current Population Survey (CPS) (United States) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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Annex Table 4.B.3. Results of distribution regressions for cleaners by country and model

	Australia			United States			European OECD Countries		
Decile	OLS	Logit	Probit	OLS	Logit	Probit	OLS	Logit	Probit
1	-0.18	-0.18	-0.18	-0.04	-0.04	-0.04	-0.05	-0.04	-0.04
	(0.014)	(0.013)	(0.012)	(0.006)	(0.006)	(0.005)	(0.003)	(0.002)	(0.003)
2	-0.10	-0.09	-0.09	-0.09	-0.08	-0.08	-0.09	-0.07	-0.06
	(0.015)	(0.013)	(0.014)	(0.008)	(0.007)	(0.007)	(0.003)	(0.003)	(0.003)
3	-0.06	-0.05	-0.05	-0.08	-0.08	-0.08	-0.09	-0.08	-0.07
	(0.014)	(0.013)	(0.013)	(0.008)	(0.008)	(0.008)	(0.003)	(0.003)	(0.003)
4	-0.03	-0.03	-0.03	-0.05	-0.07	-0.06	-0.07	-0.06	-0.06
	(0.011)	(0.013)	(0.012)	(0.008)	(0.008)	(0.008)	(0.002)	(0.003)	(0.002)
5	-0.01	-0.02	-0.02	-0.04	-0.05	-0.05	-0.04	-0.04	-0.03
	(0.009)	(0.011)	(0.010)	(0.006)	(0.008)	(0.007)	(0.002)	(0.002)	(0.002)
6	0.00	-0.01	0.00	-0.02	-0.03	-0.03	-0.02	-0.02	-0.02
	(0.007)	(0.010)	(0.010)	(0.005)	(0.010)	(0.006)	(0.001)	(0.002)	(0.002)
7	0.01	0.00	0.01	-0.01	-0.02	-0.02	-0.01	-0.01	-0.01
	(0.006)	(0.010)	(0.010)	(0.004)	(0.007)	(0.005)	(0.001)	(0.001)	(0.001)
8	0.00	0.00	0.01	0.00	-0.01	-0.01	0.00	0.00	0.00
	(0.004)	(0.011)	(0.011)	(0.003)	(0.006)	(0.005)	(0.001)	(0.001)	(0.001)
9	0.00	-0.03	-0.03	0.00	0.00	0.00	0.00	0.00	0.00
	(0.003)	(0.044)	(0.042)	(0.002)	(0.006)	(0.005)	(0.000)	(0.000)	(0.000)
Time Effects	X	X	X	X	X	X	X	X	X
Country Effects							X	X	X
Region Effects	X	X	X	X	X	X			
Part-time effects					X	X			
Observations	3 232	2 785	2 785	16 200	16 697	16 697	305 298	305 298	305 298

Note: The dependent variable is monthly earnings in or above the reported decile. The deciles in Australia and the United States were determined using usual weekly earnings. For each decile, the reported coefficients refer to a binary indicator of outsourcing. In European OECD countries the sample consists of cleaners aged 20-64 years old (defined by ISCO 08 code 911 or 515, "Domestic, Hotel and Office Cleaners and Helpers", and "Building and Housekeeping Supervisors", respectively) across European OECD countries (excluding Turkey and including Iceland) over years 2011-18. Cleaners are outsourced if they work in NACE Rev. 2 Industry N "Administrative and support services". For Australia, the sample consists of employed cleaners aged 20 to 64 over the period 2001-19 who reported that their main occupation was Cleaner and Laundry Workers (ANZSCO 2006 Code 81). Cleaners were identified as outsourced if the reported industry for their main job was Building Cleaning, Pest Control, and Other Support Services (ANZSIC 2006 Code 73). For the United States, the sample consists of employed cleaners (excluding self-employed) aged 20 to 64 over the period 2011-19 whose reported occupation for their main job was Janitors and Building Cleaners (Census 2012 Occupation Code 4220). Cleaners were identified as outsourced if the reported industry for their main job was Services to Buildings and Dwellings (Census 2002 Industry Code 7690). All models include control variables for time fixed effects, education, a log of hours per week, and an age polynomial. European OECD countries include country fixed effects while United States and Australia include region fixed effect. the United States logit and probit models use part-time effects in replacement of log hours.
Source: The European Labour Force Survey (EU-LFS) (European countries), the Current Population Survey (CPS) (United States) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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Annex Table 4.B.4. Results of distribution regressions for security guards by country and model

	Dependent variable: Earnings decile								
	Australia			United States			European OECD Countries		
Decile	OLS	Logit	Probit	OLS	Logit	Probit	OLS	Logit	Probit
1	-0.04	-0.33	-0.30	-0.01	-0.01	-0.02	0.00	0.01	0.01
	(0.015)	(0.109)	(0.092)	(0.006)	(0.006)	(0.007)	(0.004)	(0.003)	(0.003)
2	0.02	0.01	0.00	-0.06	-0.07	-0.07	0.01	0.01	0.01
	(0.026)	(0.033)	(0.030)	(0.009)	(0.009)	(0.009)	(0.006)	(0.005)	(0.006)
3	-0.01	-0.02	-0.02	-0.12	-0.11	-0.11	-0.03	-0.04	-0.03
	(0.029)	(0.028)	(0.026)	(0.012)	(0.011)	(0.011)	(0.007)	(0.007)	(0.007)
4	-0.08	-0.08	-0.08	-0.12	-0.11	-0.11	-0.05	-0.06	-0.05
	(0.034)	(0.031)	(0.029)	(0.012)	(0.011)	(0.011)	(0.008)	(0.008)	(0.008)
5	-0.08	-0.07	-0.07	-0.10	-0.09	-0.10	-0.09	-0.10	-0.08
	(0.038)	(0.035)	(0.034)	(0.011)	(0.010)	(0.010)	(0.007)	(0.007)	(0.007)
6	-0.11	-0.11	-0.10	-0.08	-0.07	-0.08	-0.11	-0.12	-0.10
	(0.039)	(0.037)	(0.036)	(0.009)	(0.009)	(0.009)	(0.007)	(0.006)	(0.006)
7	-0.07	-0.08	-0.07	-0.05	-0.05	-0.05	-0.12	-0.12	-0.11
	(0.032)	(0.040)	(0.038)	(0.008)	(0.013)	(0.009)	(0.006)	(0.005)	(0.005)
8	-0.04	-0.06	-0.05	-0.04	-0.04	-0.05	-0.08	-0.08	-0.07
	(0.025)	(0.038)	(0.033)	(0.006)	(0.007)	(0.008)	(0.005)	(0.005)	(0.004)
9	-0.05	-0.26	-0.24	-0.03	-0.03	-0.06	-0.04	-0.04	-0.03
	(0.017)	(0.078)	(0.061)	(0.004)	(0.005)	(0.008)	(0.003)	(0.003)	(0.003)
Time Effects	X	X	X	X	X	X	X	X	X
Country Effects							X	X	X
Region Effects	X	X	X	X	X	X			
Part-time Effects					X	X			
Observations	672	609	609	6 695	6 753	6 753	55 469	55 469	55 469

Note: The dependent variable is a monthly earnings in or above the reported decile. The deciles in Australia and the United States were determined using usual weekly earnings. For European countries the sample consists of guards (defined by ISCO-08 code 541, "Protective services workers") across European OECD countries (excluding Turkey and including Iceland) over the period 2011-19. Guards are outsourced if they work in NACE Rev. 2 Industry N "Administrative and support services". For Australia the sample consists of employed guards aged 20 to 64 over years 2001-19 who reported that their main occupation was Protective Service Workers (ANZSCO 2006 Code 44). Guards were identified as outsourced if the reported industry for their main job was Other Business Activities (ISIC 3.1 Code 74). For the United States the sample consists of employed (excluding self-employed) guards aged 20 to 64 over the period 2011-19 whose reported occupation for their main job was Guard (Census 2012 Occupation code 3930). Guards were identified as outsourced if their reported industry for their main job was Investigation and Security Services (Census 2002 Industry Code 7680). All models include control variables for time fixed effects, education, a log of hours per week, and an age polynomial. European OECD countries include country fixed effects while United States and Australia include region fixed effect. the United States logit and probit models use part-time effects in replacement of log hours.
Source: The European Labour Force Survey (EU-LFS) (European countries), the Current Population Survey (CPS) (United States) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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Annex Table 4.B.5. Linear probability and conditional quantile models for cleaners and guards

	Dependent variable: log earnings decile			
	Cleaners		Guards	
	LPM	Quantile	LPM	Quantile
	(1)	(2)	(3)	(4)
Decile				
1	-0.04	-0.07	-0.01	-0.07
	(0.006)	(0.011)	(0.006)	(0.016)
2	-0.09	-0.07	-0.06	-0.09
	(0.008)	(0.009)	(0.009)	(0.014)
3	-0.08	-0.08	-0.12	-0.11
	(0.008)	(0.011)	(0.012)	(0.015)
4	-0.05	-0.09	-0.12	-0.12
	(0.008)	(0.009)	(0.012)	(0.013)
5	-0.04	-0.09	-0.10	-0.12
	(0.006)	(0.011)	(0.011)	(0.018)
6	-0.02	-0.09	-0.08	-0.13
	(0.005)	(0.009)	(0.009)	(0.014)
7	-0.01	-0.09	-0.05	-0.15
	(0.004)	(0.011)	(0.008)	(0.013)
8	0.00	-0.11	-0.04	-0.18
	(0.003)	(0.015)	(0.006)	(0.022)
9	0.00	-0.10	-0.03	-0.19
	(0.002)	(0.012)	(0.004)	(0.030)
Time Effects	X	X	X	X
Part-time Effects	X	X	X	X
Region Effects	X	X	X	X
Observations	16 200	16 182	6 695	6 979

Note: Models 1 and 2 use a sample consisting of employed cleaners (excluding self-employed) aged 20 to 64 over the period 2011-19 whose reported occupation for their main job was Janitors and Building Cleaners (Census 2012 Occupation Code 4220). Cleaners were identified as outsourced if the reported industry for their main job was Services to Buildings and Dwellings (Census 2002 Industry Code 7690). Models 3 and 4 use a sample consisting of employed (excluding self-employed) guards aged 20 to 64 over the period 2011-19 whose reported occupation for their main job was Guard (Census 2012 Occupation code 3930). Guards were identified as outsourced if their reported industry for their main job was Investigation and Security Services (Census 2002 Industry Code 7680). The dependent variable is usual weekly earnings. All models include control variables for time fixed effects, education, a log of hours per week, race, ethnicity, and an age polynomial. The quantile models use state fixed effects and year fixed effects, while the linear probability models uses state by year fixed effects.
Source: The Current Population Survey (CPS) (United States).

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Details on the regression results for working time, training and contract type

The results in this section provide documentation and support to the regression results on job quality in Section 4.3.3. The regression models are similar across the different dimensions of job quality. They all model a binary response as a linear probability model (LPM) estimated using ordinary least squares. The model has the following form,

$$y_{i,t} = \beta * outsource_{i,t} + X_{i,t} + \delta_t + \varepsilon_{i,t}$$

Each equation is estimated separately for each country and each of the different dependent variables. The dependent variables, $y_{i,t}$, are binary indicators equal to one when individual i in time t meets the one of the three indicators of job quality: involuntary part-time employment, participation in job training and having

a fixed-term contract. The variable $outsource_{i,t}$ is the indicator of interest and takes a value of one if either a cleaner or guard is working in the business services industry. The vector $X_{i,t}$ contains individual and job characteristics including a non-parametric specification in age, education, sex. The log of usual hours worked is excluded from the model on involuntary part-time work, but included in the two other models. The indicator δ_t captures year effects, while $\varepsilon_{i,t}$ is the error term. Standard errors are estimated using heteroskedastic-robust standard errors. The equations are estimated as linear probability models (ordinary least squares) separately for cleaners and security guards.

For robustness, the same model structure is estimated separately using probit and logit models. For cleaners and guards across countries, the probit and logit results are qualitatively similar to those of the linear probability model. All results are found in the following three tables:

- Annex Table 4.B.6 provides support for Figure 4.11, the probability of working involuntary part-time.
- Annex Table 4.B.7 provides support for Figure 4.12, the probability of participating in training.
- Annex Table 4.B.8 provides support for Figure 4.13, the probability of working on a fixed-term contract.

Annex Table 4.B.6. Change in marginal propensity to work part-time involuntarily by country and model

	Dependent variable: Involuntary part-time employment status					
	Cleaners			Guards		
	LPM	Probit	Logit	LPM	Probit	Logit
Country	(1)	(2)	(3)	(4)	(5)	(6)
AUS	0.00	0.00	0.00	0.06	0.08	0.08
	(0.013)	(0.014)	(0.014)	(0.025)	(0.039)	(0.043)
AUT	0.07	0.06	0.06	0.07	0.07	0.07
	(0.006)	(0.005)	(0.005)	(0.014)	(0.013)	(0.014)
BEL	0.04	0.04	0.04	0.00	0.00	0.00
	(0.007)	(0.007)	(0.007)	(0.012)	(0.011)	(0.012)
CHE	0.12	0.12	0.12	0.10	0.10	0.10
	(0.014)	(0.013)	(0.013)	(0.024)	(0.022)	(0.023)
CZE	0.04	0.03	0.03	-0.01	-0.01	-0.01
	(0.013)	(0.009)	(0.009)	(0.006)	(0.006)	(0.007)
DEU	0.06	0.06	0.06	-0.02	-0.02	-0.02
	(0.005)	(0.005)	(0.005)	(0.009)	(0.009)	(0.009)
DNK	0.03	0.03	0.03	-0.01	-0.01	-0.02
	(0.009)	(0.008)	(0.008)	(0.025)	(0.025)	(0.026)
EST	0.07	0.07	0.06	-0.08	-0.12	-0.10
	(0.017)	(0.014)	(0.014)	(0.055)	(0.041)	(0.038)
ESP	0.18	0.18	0.18	-0.05	-0.05	-0.05
	(0.010)	(0.010)	(0.009)	(0.015)	(0.013)	(0.014)
FIN	-0.01	-0.01	-0.01	-0.03	-0.04	-0.03
	(0.011)	(0.011)	(0.011)	(0.044)	(0.040)	(0.042)
FRA	0.16	0.16	0.16	-0.04	-0.04	-0.03
	(0.011)	(0.010)	(0.010)	(0.016)	(0.015)	(0.015)
GRC	0.13	0.12	0.11	0.02	0.03	0.03
	(0.009)	(0.008)	(0.008)	(0.007)	(0.007)	(0.008)
GBR	0.05	0.05	0.05	0.01	0.01	0.01
	(0.011)	(0.011)	(0.011)	(0.012)	(0.012)	(0.012)
HUN	0.03	0.03	0.03	-0.01	-0.01	-0.01

	Dependent variable: Involuntary part-time employment status					
	Cleaners			Guards		
	LPM	Probit	Logit	LPM	Probit	Logit
Country	(1)	(2)	(3)	(4)	(5)	(6)
	(0.007)	(0.006)	(0.006)	(0.003)	(0.003)	(0.003)
IRL	0.00	0.00	0.00	0.01	0.01	0.01
	(0.009)	(0.009)	(0.009)	(0.011)	(0.012)	(0.012)
ISL	0.01	0.01	0.01	0.01	0.01	0.01
	(0.025)	(0.023)	(0.023)	(0.029)	(0.024)	(0.025)
ITA	0.30	0.28	0.27	-0.03	-0.03	-0.03
	(0.005)	(0.004)	(0.004)	(0.009)	(0.008)	(0.008)
LTU	0.05	0.04	0.04	-0.02	-0.03	-0.03
	(0.011)	(0.009)	(0.009)	(0.008)	(0.008)	(0.011)
LVA	0.09	0.08	0.08	0.00	0.00	0.00
	(0.036)	(0.027)	(0.026)	(0.007)	(0.008)	(0.009)
NLD	0.03	0.03	0.03	0.04	0.05	0.04
	(0.011)	(0.011)	(0.011)	(0.021)	(0.020)	(0.021)
NOR	0.01	0.01	0.01	0.01	0.01	0.02
	(0.013)	(0.013)	(0.013)	(0.034)	(0.036)	(0.039)
PRT	0.17	0.16	0.16	0.00	0.00	0.00
	(0.009)	(0.008)	(0.008)	(0.007)	(0.006)	(0.007)
SVN	0.05	0.05	0.05	-0.03	-0.03	-0.03
	(0.005)	(0.005)	(0.005)	(0.012)	(0.012)	(0.012)
SVK	0.08	0.05	0.05	-0.02	-0.02	-0.03
	(0.012)	(0.007)	(0.006)	(0.004)	(0.005)	(0.006)
USA	0.04	0.04	0.03	0.02	0.04	0.02
	(0.006)	(0.005)	(0.005)	(0.006)	(0.039)	(0.006)

Note: Coefficients from columns (1) and (4) correspond to what is presented graphically in the text. The European countries cover guards and cleaners aged 20 to 64 over the period 2011-19. Involuntarily part-time workers are those working part-time, who would like to work more hours or cannot find full-time employment. The United States covers guards and cleaners aged 20 to 64 over the period 2011-19. Workers are considered part-time for economic reasons if they worked fewer than 35 hours per week for economic reasons and available for full-time employment. Australia covers guards and cleaners aged 20 to 64 over the period 2001-19. Workers are considered part-time if they reported working less than 35 hours per week and are unable to find full time work. All models include control variables for time fixed effects, education, and an age polynomial. European OECD countries include country fixed effects while United States and Australia include region fixed effect.
Source: The European Labour Force Survey (EU-LFS) (European countries), the Current Population Survey (CPS) (United States) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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Annex Table 4.B.7. Change in marginal propensity to train by country and model

	Dependent variable: Participation in training					
	Cleaners			Guards		
	LPM	Probit	Logit	LPM	Probit	Logit
Country	(1)	(2)	(3)	(4)	(5)	(6)
AUS	-0.11	-0.13	-0.13	-0.13	-0.14	-0.14
	(0.014)	(0.018)	(0.016)	(0.050)	(0.049)	(0.048)
AUT	-0.01	-0.01	-0.01	-0.01	0.00	0.00
	(0.003)	(0.003)	(0.003)	(0.014)	(0.014)	(0.014)
BEL	-0.01	-0.01	-0.01	0.00	0.00	0.00
	(0.003)	(0.003)	(0.003)	(0.013)	(0.012)	(0.012)
CHE	-0.04	-0.04	-0.04	-0.05	-0.05	-0.05
	(0.008)	(0.009)	(0.010)	(0.026)	(0.026)	(0.026)

	Dependent variable: Participation in training					
	Cleaners			Guards		
	LPM	Probit	Logit	LPM	Probit	Logit
Country	(1)	(2)	(3)	(4)	(5)	(6)
CZE	0.00	0.00	0.00	-0.02	-0.02	-0.02
	(0.008)	(0.009)	(0.009)	(0.014)	(0.013)	(0.014)
DEU	-0.01	-0.01	-0.01	-0.03	-0.03	-0.03
	(0.001)	(0.001)	(0.001)	(0.006)	(0.006)	(0.006)
DNK	-0.03	-0.03	-0.03	-0.02	-0.02	-0.02
	(0.026)	(0.009)	(0.009)	(0.032)	(0.032)	(0.033)
EST	-0.01	-0.02	-0.01	0.00	0.00	0.01
	(0.009)	(0.009)	(0.010)	(0.054)	(0.049)	(0.054)
ESP	-0.02	-0.02	-0.02	0.03	0.03	0.03
	(0.004)	(0.004)	(0.005)	(0.015)	(0.016)	(0.016)
FIN	-0.02	-0.02	-0.02	0.04	0.04	0.04
	(0.011)	(0.011)	(0.011)	(0.040)	(0.039)	(0.040)
FRA	-0.05	-0.05	-0.06	-0.05	-0.05	-0.05
	(0.006)	(0.009)	(0.009)	(0.020)	(0.018)	(0.019)
GRC	-0.01	-0.01	-0.01	0.00	0.00	0.00
	(0.001)	(0.002)	(0.003)	(0.006)	(0.005)	(0.005)
GBR	-0.02	-0.02	-0.03	-0.04	-0.04	-0.04
	(0.005)	(0.006)	(0.006)	(0.016)	(0.016)	(0.016)
HUN	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
IRL	-0.01	-0.01	-0.01	-0.02	-0.02	-0.02
	(0.003)	(0.003)	(0.004)	(0.006)	(0.005)	(0.005)
ISL	-0.03	-0.03	-0.03	-0.01	-0.01	-0.01
	(0.018)	(0.019)	(0.020)	(0.034)	(0.036)	(0.037)
ITA	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.002)	(0.002)	(0.002)	(0.006)	(0.006)	(0.006)
LTU	-0.01	-0.01	-0.01	0.01	0.01	0.02
	(0.003)	(0.005)	(0.006)	(0.010)	(0.010)	(0.012)
LVA	-0.01	-0.01	-0.02	0.02	0.02	0.02
	(0.006)	(0.011)	(0.013)	(0.013)	(0.014)	(0.018)
NLD	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.007)	(0.007)	(0.007)	(0.020)	(0.020)	(0.020)
NOR	0.02	0.02	0.02	-0.10	-0.10	-0.10
	(0.012)	(0.012)	(0.012)	(0.039)	(0.034)	(0.034)
PRT	-0.01	-0.01	-0.01	-0.02	-0.02	-0.02
	(0.003)	(0.004)	(0.004)	(0.009)	(0.008)	(0.008)
SVN	-0.03	-0.03	-0.03	-0.05	0.05	-0.05
	(0.004)	(0.004)	(0.004)	(0.014)	(0.013)	(0.013)
SVK	0.00	0.00	0.00	0.01	0.01	0.01
	(0.003)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)

Note: Coefficients from columns (1) and (4) correspond to what is presented graphically in Figure 4.12. The European countries cover guards and cleaners aged 20 to 64 over the period 2011-19. A worker participated in training if they took part in instruction outside of the formal education system in the last four weeks. Australia covers guards and cleaners aged 20 to 64 over the period 2001-19. A worker is considered to have taken place in a training if they answer "Yes" to "In the past 12 months, have you taken part in any training or employment scheme as part of your job?" All models include control variables for time fixed effects, education, a log of hours per week, and an age polynomial. European OECD countries include country fixed effects while United States and Australia include region fixed effect.
Source: The European Labour Force Survey (EU-LFS) (European countries) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

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Annex Table 4.B.8. Change in marginal propensity to be on a fixed-term contract if outsourced by country and model

	Dependent variable: Contract type					
	Cleaners			Guards		
	LPM	Probit	Logit	LPM	Probit	Logit
Country	(1)	(2)	(3)	(4)	(5)	(6)
AUS	0.00	0.00	0.00	0.08	0.07	0.07
	(0.020)	(0.020)	(0.020)	(0.039)	(0.035)	(0.033)
AUT	-0.03	-0.04	-0.04	-0.04	-0.04	-0.04
	(0.002)	(0.003)	(0.004)	(0.011)	(0.011)	(0.012)
BEL	0.00	0.00	0.00	-0.03	-0.03	-0.03
	(0.006)	(0.006)	(0.000)	(0.017)	(0.015)	(0.015)
CHE	-0.02	-0.02	-0.02	-0.04	-0.04	-0.04
	(0.008)	(0.007)	(0.008)	(0.016)	(0.016)	(0.018)
CZE	0.12	0.09	0.09	0.02	0.03	0.02
	(0.020)	(0.014)	(0.014)	(0.019)	(0.019)	(0.019)
DEU	0.03	0.03	0.02	0.04	0.04	0.04
	(0.004)	(0.004)	(0.004)	(0.012)	(0.013)	(0.012)
DNK	-0.02	-0.02	-0.02	-0.02	-0.03	-0.03
	(0.006)	(0.006)	(0.007)	(0.017)	(0.018)	(0.019)
EST	0.01	0.01	0.01	0.03	0.03	0.04
	(0.013)	(0.009)	(0.010)	(0.022)	(0.028)	(0.038)
ESP	-0.08	-0.08	-0.08	-0.12	-0.11	-0.11
	(0.010)	(0.010)	(0.010)	(0.023)	(0.020)	(0.020)
FIN	-0.17	-0.17	-0.18	-0.18	-0.16	-0.17
	(0.013)	(0.014)	(0.014)	(0.045)	(0.035)	(0.036)
FRA	-0.09	-0.09	-0.09	-0.04	-0.04	-0.04
	(0.008)	(0.009)	(0.010)	(0.017)	(0.016)	(0.016)
GRC	-0.19	-0.20	-0.21	-0.09	-0.09	-0.09
	(0.008)	(0.010)	(0.011)	(0.011)	(0.010)	(0.011)
GBR	0.01	0.01	0.01	0.02	0.02	0.02
	(0.006)	(0.005)	(0.005)	(0.010)	(0.009)	(0.009)
HUN	-0.11	-0.12	-0.13	-0.02	-0.03	-0.03
	(0.007)	(0.009)	(0.010)	(0.005)	(0.005)	(0.006)
IRL	-0.04	-0.04	-0.04	0.00	0.00	0.00
	(0.006)	(0.007)	(0.007)	(0.009)	(0.009)	(0.009)
ISL	-0.04	-0.04	-0.04	-0.02	0.01	-0.01
	(0.020)	(0.021)	(0.022)	(0.041)	(0.035)	(0.037)
ITA	-0.08	-0.07	-0.07	-0.18	-0.16	-0.16
	(0.004)	(0.004)	(0.004)	(0.012)	(0.010)	(0.009)
LTU	0.00	0.01	0.00	0.00	0.00	0.01
	(0.006)	(0.005)	(0.005)	(0.005)	(0.007)	(0.009)
LVA	0.00	0.00	0.00	-0.01	-0.01	-0.01
	(0.012)	(0.012)	(0.012)	(0.010)	(0.011)	(0.012)
NLD	-0.01	-0.01	-0.01	0.02	0.02	0.02
	(0.011)	(0.010)	(0.010)	(0.024)	(0.023)	(0.024)
NOR	0.00	0.00	0.00	-0.11	-0.12	-0.12
	(0.011)	(0.011)	(0.011)	(0.031)	(0.029)	(0.031)
PRT	-0.06	-0.06	-0.06	-0.09	-0.08	-0.08
	(0.009)	(0.009)	(0.009)	(0.014)	(0.012)	(0.012)
SVN	0.01	0.01	0.01	-0.07	-0.07	-0.07
	(0.006)	(0.005)	(0.005)	(0.014)	(0.013)	(0.013)

	Dependent variable: Contract type					
	Cleaners			Guards		
	LPM	Probit	Logit	LPM	Probit	Logit
Country	(1)	(2)	(3)	(4)	(5)	(6)
SVK	0.05	0.05	0.04	0.00	0.00	0.00
	(0.014)	(0.010)	(0.010)	(0.008)	(0.007)	(0.008)

Note: Coefficients from columns (1) and (4) correspond to what is presented graphically in Figure 4.13. The European countries cover guards and cleaners aged 20 to 64 over the period 2011-19. Australia covers guards and cleaners over the period 2001-19. Workers with a fixed-term contract include workers who have a fixed-term or casual contract. All models include control variables for time fixed effects, education, a log of hours per week, and an age polynomial. European OECD countries include country fixed effects while United States and Australia include region fixed effect.

Source: The European Labour Force Survey (EU-LFS) (European countries) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Australia).

StatLink 🔗 https://stat.link/t5ps1l

Notes

[1] See Ewing and Abdul (2020[74]) and Shenker (2020[75]).

[2] See OECD (2014[28]) for a summary on temporary work agency employment, and OECD (2019[29]) for a recent summary of own-account work.

[3] See OECD (2007[76]) for an overview of the effect of international trade on OECD labour markets, and WTO, (2019[77]) for issues around international trade in services.

[4] The literature on domestic outsourcing does not usually constrain the definition to labour services and includes intermediate goods production as well. The distinction ultimately rests on the assumption of what a firm could reasonably produce in-house. In order to side-step that discussion, this chapter limits itself to primarily labour services. However, many of the same issues arise in manufacturing supply chains (Weil, 2014[14]).

[5] A good illustration of domestic outsourcing in low-wage service jobs lies with the evolution of cleaners. A recent *New York Times* article compared the experience of cleaners at two different cutting-edge technology companies: Kodak in the 1980s and Apple today. Historically, cleaners at Kodak were regular Kodak employees. At Apple, cleaners work for a contractor employed by Apple. The depiction draws a direct link between the different employment trajectories and wages, as well as the considerable differences in terms of benefits, training opportunities and job security (Irwin, 2017[78]).

[6] Manufacturing firms are increasingly contracting with third-party contracting firms in occupations key to the core activity of the firms. Dey, Houseman and Polivka (2012[46]) argue that manufacturers increasingly rely on staffing companies to provide production workers, depressing published reports of manufacturing employment.

[7] In some cases, the TWA may act only as a mediator and not employ the worker directly. These cases would fall outside the bounds of an outsourcing relationship.

[8] Anti-poaching agreements are not necessarily unlawful since they are usually treated as vertical restraints. This occurs even if what these agreements essentially prevent in practice is horizontal competition across same level firms (that is different franchisees).

[9] This refers to section "N" in the in the International Standard of Industrial Classification of All Economic Activities (ISIC). Other classification systems contain similar groupings. The statistical classification of economic activities in the European Community (NACE, Rev. 2) contains the same section "N" denoting administrative and support service activities. In the North American Industrial Classification System (NAICS, 2017), the corresponding industry is "56", Administrative and Support and Waste Management and Remediation Services.

[10] Section "M", Professional, Scientific, and technical activities also provides intermediate services to businesses. However, these activities require a high degree of training and education as well as specialised knowledge transfer. Examples include legal and accounting services, pharmaceutical research or management consultancies. These activities often also constitute domestic outsourcing, though they mostly concern high-pay occupations. The effects of domestic outsourcing on these occupations may be quite different from those of low-pay occupations.

[11] For Panel A, these are divisions 80, Security and investigative activities; 81, Services to buildings and landscape activities and 82, Office administrative, office support and other business support activities. Employment by private households would not be included. For Panel B the division is 78, Employment activities.

[12] Changes in the international classification of occupations prevent a precise comparison of developments between 2007 and 2011.

[13] For cleaners, employment by private households was omitted from the analysis. For guards, similarly, public administration and defence was excluded. Including these industries lowers the shares in the administrative and support industry. However, trends in the shares over time are qualitatively unchanged.

[14] Across European OECD countries in the sample, 47.7% of outsourced cleaners lack an upper-secondary degree compared to 44.3% of cleaners who are not outsourced. Among security guards, this share for workers who are outsourced is 28.5% compared to 25.9% for non-outsourced workers. In the United States 34.6% of outsourced cleaners lack an upper-secondary degree, compared to 22.6% of non-outsourced cleaners. Among security guards in the United States, 6.3% of outsourced guards lack an upper secondary degree, compared to 4.8% of guards who are not outsourced. In Australia, this share for cleaners is 44.9% for outsourced workers and 53.8% for non-outsourced workers. Among security guards, 32.9% outsourced workers lack an upper-secondary degree compared to 25.0% of non-outsourced workers.

[15] The difference between the two lines at each decile, d, is the estimated coefficient $\widehat{\beta_d}$ explained in Box 4.5. Stars on the decile indicate whether the coefficient estimates are significant at the 95% confidence interval.

[16] For comparison, the unadjusted frequency distributions for cleaners and guards are found in Annex Figure 4.A.3 and Annex Figure 4.A.4, respectively.

[17] The earnings data from both Australia and the United States contain enough detail (estimates of hours and earnings) to also compute average wage effects of outsourcing using a linear regression model. They are computed using log wages.

[18] The earnings regressions in Section 4.3.2 control for usual hours worked. Differences in working time do not, therefore, appear to explain the differences in earnings between outsourced cleaners and guards.

[19] This "dynamic wage effect" through occupational mobility is different than the earnings effects analysed in this chapter, and they should be viewed as distinct.

[20] Moreover, termination of the contract for services by the lead firm is considered as a fair reason for worker dismissal by the contracting company in a number of OECD countries – see e.g. OECD (2014[28]), which limits the cost of dismissals for the contracting company.

From:
OECD Employment Outlook 2021
Navigating the COVID-19 Crisis and Recovery

Access the complete publication at:
https://doi.org/10.1787/5a700c4b-en