

DISCUSSION PAPER

# PAID CARE WORK AROUND THE GLOBE

A COMPARATIVE ANALYSIS OF 47 COUNTRIES  
AND TERRITORIES



No. 39, April 2021

**MIGNON DUFFY, UNIVERSITY OF MASSACHUSETTS LOWELL**  
**AMY ARMENIA, ROLLINS COLLEGE**

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Produced by the Research and Data Section  
Editor: Tina Johnson

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# SUMMARY

This paper uses harmonized collections of national labor force datasets to compare the size and shape of the paid care sector around the globe. Paid care workers make up three of the four points of the “care diamond” organizing care provision in any national context: markets, the not-for-profit sector, and the state (the fourth point is families/households).<sup>\*</sup> After explaining our definition of paid care – focused on health care,

education, child care, and social services – we examine the size and characteristics of the paid care sector, finding enormous variation across countries. We then explore the relationship between the size of the care sector and various measures of need for care, finding very little evidence of relationship. Finally, we explore wages and working conditions for paid care workers in a subset of countries for which data is available.

# RESUMEN

En este artículo se utilizan recopilaciones armonizadas de conjuntos de datos sobre la fuerzas de trabajo nacionales con el objeto de comparar el tamaño y la configuración del sector de los cuidados remunerados en todo el mundo. Quienes trabajan de manera remunerada en el sector de los cuidados conforman tres de los cuatro vértices del “diamante de los cuidados” que organiza la provisión de cuidados en todo contexto nacional: el mercado, el sector sin fines de lucro y el Estado (el cuarto vértice son las familias o los hogares).<sup>\*</sup> Luego de explicar la definición de cuidados remunerados —centrada en la atención de la salud, la

educación, el cuidado infantil y los servicios sociales— se examinan el tamaño y las características del sector de los cuidados remunerados, donde se encuentran enormes variaciones entre los países. A continuación, se analiza la relación entre el tamaño del sector de los cuidados y las diversas mediciones de las necesidades de cuidados, a partir de lo cual se detectan muy pocas evidencias de relación. Por último, se estudian las condiciones salariales y laborales de quienes trabajan en el sector de los cuidados remunerados en un subconjunto de países para los cuales existen datos disponibles.

# RÉSUMÉ

Ce document utilise des collectes harmonisés de données portant sur la main d’œuvre dans différents pays afin de comparer la taille et la forme du secteur de soins rémunérés à l’échelle planétaire. Les prestataires de soins rémunérés représentent trois des quatre points du « diamant de soins » qui organise la fourniture de soins dans les contextes nationaux : les marchés, le secteur à but non lucratif et l’Etat (le quatrième point est les familles/ménages).<sup>\*</sup> Après avoir donné notre définition du travail rémunéré – qui met l’accent sur les soins de santé, l’éducation, les services de garde

des enfants et les services sociaux – nous examinons la taille et les caractéristiques du secteur des soins rémunérés, et constatons qu’il existe des différences importantes entre les pays. Nous explorons ensuite le lien entre la taille du secteur de soins et les diverses mesures concernant les besoins de soins, et constatons qu’il existe très peu d’éléments attestant d’une relation entre les deux. Enfin, nous passons en revue les salaires et les conditions de travail des prestataires de soins rémunérés dans un sous-groupe de pays dont les données sont disponibles.

<sup>\*</sup> Razavi, Shahra. 2007. *The Political and Social Economy of Care in a Development Context: Conceptual Issues, Research Questions and Policy Options*. Geneva: UNRISD.

# 1.

# INTRODUCTION

The work of taking care of children, the elderly, the ill and those living with disabilities is one of the fundamental responsibilities of a society. The Universal Declaration of Human Rights includes the rights to medical care, social services, social protection in childhood and in the event of disability (Article 25) and education for all (Article 26).<sup>1</sup> In all nations, the labour of care work is done in part as unpaid work by families, friends and community members and in part as paid labour by workers such as doctors, nurses, teachers, home health aides, nannies and domestic workers. In this paper, we will focus our attention on understanding the size and shape of the paid care sector across national and regional contexts. This analysis provides critical knowledge for those working to ensure the provision of adequate, accessible and quality care around the world and for global efforts towards gender and economic equity.

## 1.1

### Paid and unpaid care

The concept of a “care diamond”<sup>2</sup> is useful for representing the social architecture of the provision of care within a society, with the four points representing families/households, markets, the not-for-profit sector and the state (federal/local). This formulation provides a framework for understanding variation between nations as well as changes in the management of care needs in a society across time. While an enormous amount of care is still provided as unpaid labour, paid care workers represent the labour of the other three corners of this care diamond. An adequately developed paid care sector is important for at least two reasons in the overall social organization of care. First, paid care workers provide expert knowledge and skills that differ from the knowledge and skills of family caregivers. And, second, a strong paid care sector creates choices for families, particularly the women who perform the overwhelming majority of unpaid care. The option to share some of the labour of care with paid workers is an important factor in enabling women to make the choice to enter the paid

labour force, become politically active or otherwise exercise their individual rights.

The impact on providing support to women in their roles as unpaid caregivers is only one of the ways that the strength of the paid care sector is entwined with efforts to promote gender equity. The other, of course, is that paid care provides a critical source of employment for women and is where a disproportionate number of women around the world perform paid labour. The availability of care jobs, the quality of those jobs and the opportunities they provide for upward mobility are therefore key factors in ensuring that women’s livelihoods and prospects are strong. Unfortunately, growth in the paid care sector is often fuelled in part by the expansion of low-wage jobs at the most insecure and vulnerable end of the labour market.

Rachel Dwyer has argued that the growth of paid care is in fact an important causal factor in the much discussed job polarization that increasingly characterizes labour markets in modern global economies.<sup>3</sup> In her analysis of job growth in the US labour market

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1 UNGA 1948.

2 Razavi 2007.

3 Dwyer 2013. Her analysis complements that of Sassen 1991.

between 1983 and 2007, she finds that care work accounted for 60 per cent of the job growth in the lowest wage quintile—much more than any other occupational group—and for 40 per cent of the job growth in the fourth quintile. She concludes that in addition to factors such as technological change and globalization, an analysis of job polarization must include the particularities of the paid care labour market. Of course, these economic inequalities are also linked to inequalities by race and ethnic origin in addition to gender. Migrant workers and workers representing ethnic minorities are often dramatically over-represented in those jobs that are at the low end of the care workforce, making the polarization in paid care a significant source of inequalities between women as well.<sup>4</sup>

## 1.2 The focus of the analysis

The development of a strong paid care sector is therefore critical to meeting care needs as well as advancing gender and economic equity. Our goal in this paper is to provide a comparative analysis of the paid care sector across a large number of countries located in different regions of the world and in differing positions in the global economy. This kind of large-scale analysis is a relatively new endeavour for care scholars and is an important part of building a knowledge base from which to formulate robust policy recommendations and action plans for the care economy.<sup>5</sup>

Our analysis will focus on three related questions:

1) *How many people work in the paid care sector and who are they?*

Because this kind of large-scale quantitative analysis of the paid care sector is an emerging area of scholarship, a basic descriptive mapping of the sector across

4 See also Duffy 2005; Nakano Glenn 1992.

5 After this analysis was completed and the paper written, the International Labour Organization (ILO) released a report entitled *Care Work and Care Jobs for the Future of Work* (ILO 2018), which provides perhaps the most comprehensive analysis of the care economy (both paid and unpaid) to date. We are pleased to see that our work is part of a larger movement to document, analyse and understand this critical sector.

countries and regions is an important place to start. As part of this analysis, we will explicitly examine the relationship between the size of the paid care sector and economic development, drawing attention to the different positions of various countries in the global economy.

2) *What is the occupational structure of the care sector across national and regional contexts?*

A more detailed analysis—that moves beyond looking at the overall size of the paid care sector to examine the types of jobs and workers within it—illuminates both the types of care expertise available to a population as well as the levels of job polarization within the sector.

3) *To what extent is the size of the care sector a match or mismatch with care needs?*

Here we explicitly examine the adequacy of the size of the care sector across countries and regions and the responsiveness of the size of the sector to the magnitude of care needs.

## 1.3 Definition of paid care

Before describing the data and methods used in this paper, it is important to be clear about what we mean when we talk about paid care. While an increasing number of scholars and policymakers discuss the care sector or the care economy, there is not a universally agreed definition of what types of labour should be included as care work. In this paper, we define care using Duffy, Albelda and Hammonds's definition with the following characteristics:<sup>6</sup>

1. The activity [of the industry] contributes to physical, mental, social and/ or emotional well-being;
2. The primary labour process [in the industry] involves a face-to-face relationship with those cared for;

6 Duffy et al. 2013.

3. Those receiving care are members of groups that by normal social standards cannot provide for all of their own care because of age, illness or disability; and
4. Care work builds and maintains human infrastructure that cannot be adequately produced through unpaid work or unsubsidized markets, necessitating public investment.

This definition includes a few notable characteristics. First, while we acknowledge that care may take place in many sectors and jobs, there is a unique importance in the provision of care to dependents, those who are unable to provide for their own care.<sup>7</sup> Second, while we look at industries where the primary labour process includes face-to-face care, we include both

nurturant occupations, also called direct care (which involve direct relationship with care recipients) and non-nurturant occupations within the care sector. Non-nurturant jobs (sometimes called indirect care) are those that support caregiving—including cleaning and cooking work in schools, hospitals and private homes, etc.—the exclusion of which from care sector analyses provides a biased understanding of the characteristics and conditions of this work.<sup>8</sup> Finally, this definition suggests that we think of the paid care sector as ‘human infrastructure’, a formulation that highlights its social value and also suggests a significant role for the state in supporting such activity. In the next section, we will discuss how we operationalize this conceptualization and how we measure our other variables of interest.

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7 Folbre and Olin Wright 2012.

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8 See Duffy 2005.



## 2.

# DATA AND METHODS

Our analysis uses a comparative approach to examine the paid care sector in 47 countries. We use data from two sources: the LIS Cross National Data Center (LIS)<sup>9</sup> and IPUMS-International.<sup>10</sup> We chose these data sources because they include labour force data from multiple countries that have been harmonized and are specifically intended to be used comparatively.

LIS collects microdata from about 50 countries, primarily high- and middle-income nations, across the globe. The LIS staff harmonizes the data from each country to make variables comparable for cross-national analysis. These data are recognized especially for their detailed recording of different sources of income, including work and social protection benefits.

IPUMS-International maintains a similarly harmonized archive of census data from 85 countries. Although it does not have the detailed income data of LIS, many of the national data sets include detailed occupation and industry codes that make it possible to examine paid care workers.

We use data from those countries where industry codes are sufficiently detailed to analyse our operational definition of care work below. Our main analyses include 47 countries total, 22 from LIS and 25 from IPUMS. We selected the most recent datasets available, which range from 2007 to 2016, with the bulk of the data collected in 2010-2013. A detailed table of the included country datasets with year and source is in the Appendix.

The LIS and IPUMS data archives have the advantage of providing timely and comparable microdata for a large number of countries, but these data do have their limits. The LIS data have historically included higher-income nations, though it has expanded its holdings considerably into middle-income nations in the last decade. We access additional countries, including low-income countries, through IPUMS, but typically with

less income and occupational detail than is available from LIS. There are limitations to these datasets, to be sure, but they are far outweighed by the advantages of data harmonization for comparative analyses. The effort put in by both LIS and IPUMS to carefully review and maximize comparability on these national data sets would be a near impossible task for individual researchers. For both sources, the original data are typically from self-report surveys (e.g., censuses) for individuals and households rather than from employers or government records. It seems likely that some care workers, especially those with informal working arrangements and insecure migration status, will be missed by this type of survey and thus that we are underestimating their numbers. However, we also expect that domestic work is better captured in self-report microdata from workers than in employer surveys, where these workers are equally likely to be under-represented and private households are unlikely to be well represented.

We operationalize our definition of care to include the following industry sectors: health care, which encompasses both residential and non-residential long-term care services; education and childcare, comprised of schools and pre-schools as well as family day-care centres and other structures for caring for the youngest children;<sup>11</sup> social services; and domestic workers, hired by individual households to clean, cook and care for family

9 LIS Cross-National Data Center 2018.

10 Minnesota Population Center 2018.

11 Because of industry coding limitations in the data, we were not able to separate higher education from other educational institutions, so our estimates of the size of the care sector include higher education. Relative to the size of other parts of the care sector, however, higher education is a very small proportion even in the Developed countries so this should not have a substantive impact on the results.

members. Both nurturant (direct) and non-nurturant (indirect) care occupations are included.

Our rationale for using an industry approach to care (as opposed to selecting out particular occupations) is based in both conceptual and practical concerns. With an industry approach, we can capture a stronger picture of the labour dedicated to care provision in a society, including support and administrative workers. As noted above, the exclusion of non-nurturant workers in care industries (e.g., cleaners, cooks) both underestimates the labour resources dedicated to care and provides a skewed picture of who works in the care sector.<sup>12</sup> In addition to this conceptual justification, we are also able to examine the care sector in a greater number of countries, as these comparative data are more likely to have the necessary detailed industrial designations but not the occupational detail.

There are certainly limitations to this approach, however. Most importantly, we miss counting workers who do paid care work in other industries, such as social work, or health professionals who might

be situated in organizations in the financial or sales industries. In addition, there are some workers in care industries who are not providing or supporting care—for example, gardeners or drivers employed in private household work or veterinarians in the health-care industry. We have pulled out these workers when we are able to but expect that small numbers of them remain in these analyses.

We begin our analyses by looking at the size of the care sector, as defined by the proportion of the labour force that is working in care industries, as noted above, and look at how sector size varies by national development/wealth level. We then proceed to examine the characteristics of the workers in care industries. For these analyses, we examine the 47 countries where we have data to disaggregate the industrial-level data at an appropriate level. However, as we proceed to look at the characteristics of the workers in the care sector and occupational structure within the care sector, we sometimes rely on a subset of countries where those detailed demographic and occupational data are available.

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<sup>12</sup> Duffy 2011; Addati et al. 2018.

3.

# HOW MANY PEOPLE WORK IN THE PAID CARE SECTOR AND WHO ARE THEY?

We begin by estimating the size of the care sector across this diverse set of countries. What proportion of the paid labour force is engaged in the care sector? This question is largely descriptive, but until recently we have had little comparative information about the size of the paid care sector, and this information is a critical beginning to understanding the infrastructure of paid care and the range of possible responses to care needs. We also ask how the size of the care workforce varies with economic development or national wealth. Then, we proceed by looking at the demographic characteristics of this workforce to examine the extent to which these jobs are filled by those with more or less power and status in society.

## 3.1

### The size of the paid care sector

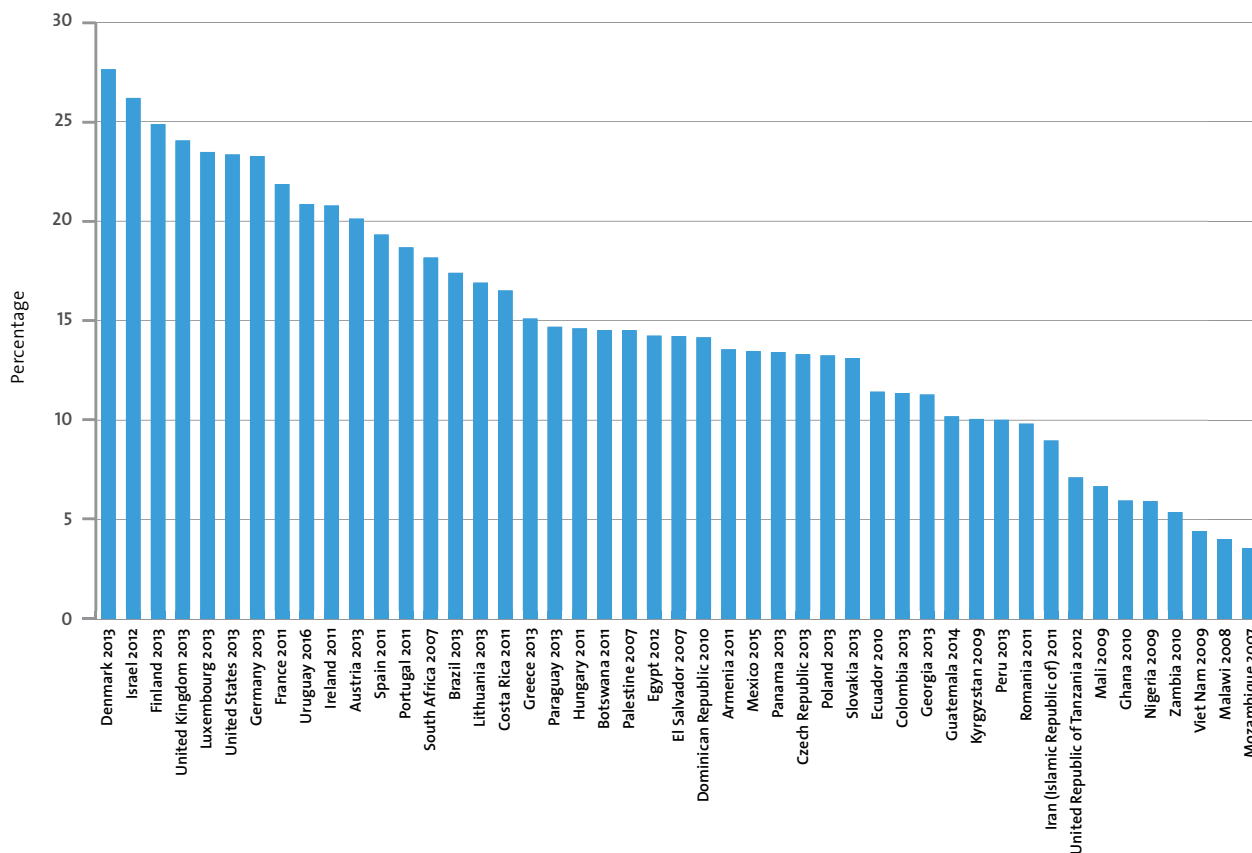
We estimate the size of the care work force in all 47 countries by calculating the proportion of the paid labour force that is employed in a care industry. Our results reveal a great amount of variation by country, from nations with nearly negligible care sectors to those where the care sector is a significant component of the overall workforce.

As seen in Figure 1, the overall size of the care sector ranges from a low of 3.5 per cent of the employed in Mozambique to a high of 27 per cent in Denmark. In developed countries such as the United States, the care sector is one of the fastest growing parts of the economy and paid care workers are a major part of the labour force.<sup>13</sup> By contrast, the countries with the smallest care sectors include those in sub-Saharan Africa, plus Viet Nam, where the largest part of the labour force (between 42 and 75 per cent of all employed) is working in agriculture, fishing and forestry.

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<sup>13</sup> Duffy 2011; Howes et al. 2012.

**FIGURE 1:**  
Size of care sector as a percentage of all employed



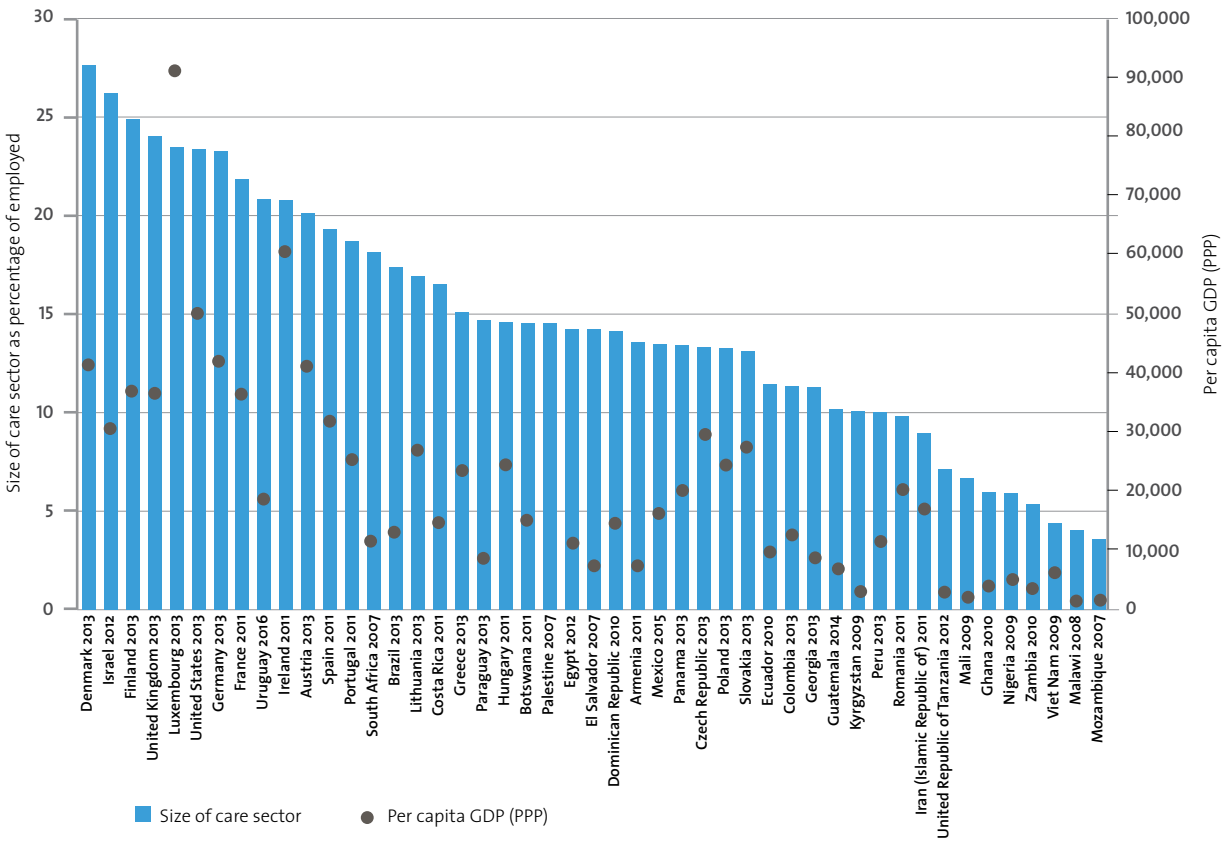
Note: These estimates were calculated using data from the LIS Data Center and from IPUMS International. Countries were included if their industry coding parallels ISIC Rev. 4 or Rev. 3 and allows us to identify workers in education, human health and social work activities as well as activities of households as employers of domestic personnel. In ISIC Rev 3, the health category is broader than human health, so veterinary services were specifically excluded. Countries are in descending order of care sector size.

Figure 2 shows more clearly the relationship between the size of the care sector and a country’s wealth. Not surprisingly, those countries with higher levels of wealth have larger paid care sectors (bivariate tests for correlation yield a coefficient of 0.76). It is important to note, however, that there is a set of countries that have relatively low per capita gross domestic product (GDP) measures but still have paid care sectors that make up over 15 per cent of their employed population:

Brazil, Costa Rica, South Africa and Uruguay. On the other hand, there are a number of countries in Eastern Europe—the Czech Republic, Poland and Slovakia—that have smaller care sectors than other countries with similar per capita GDPs. These exceptions show that while the development of a paid care workforce is absolutely related to the wealth of a country, it is also related to the deliberate creation of policy and care infrastructure—or lack thereof.<sup>14</sup>

<sup>14</sup> The size of care sector is only one dimension of care provision, and we will break down a number of other dimensions later in the paper. One important dimension that we are not able to adequately unravel with these data is the distinction between private and public provision.

**FIGURE 2:**  
**Size of care sector as a percentage of all employed and per capita GDP**



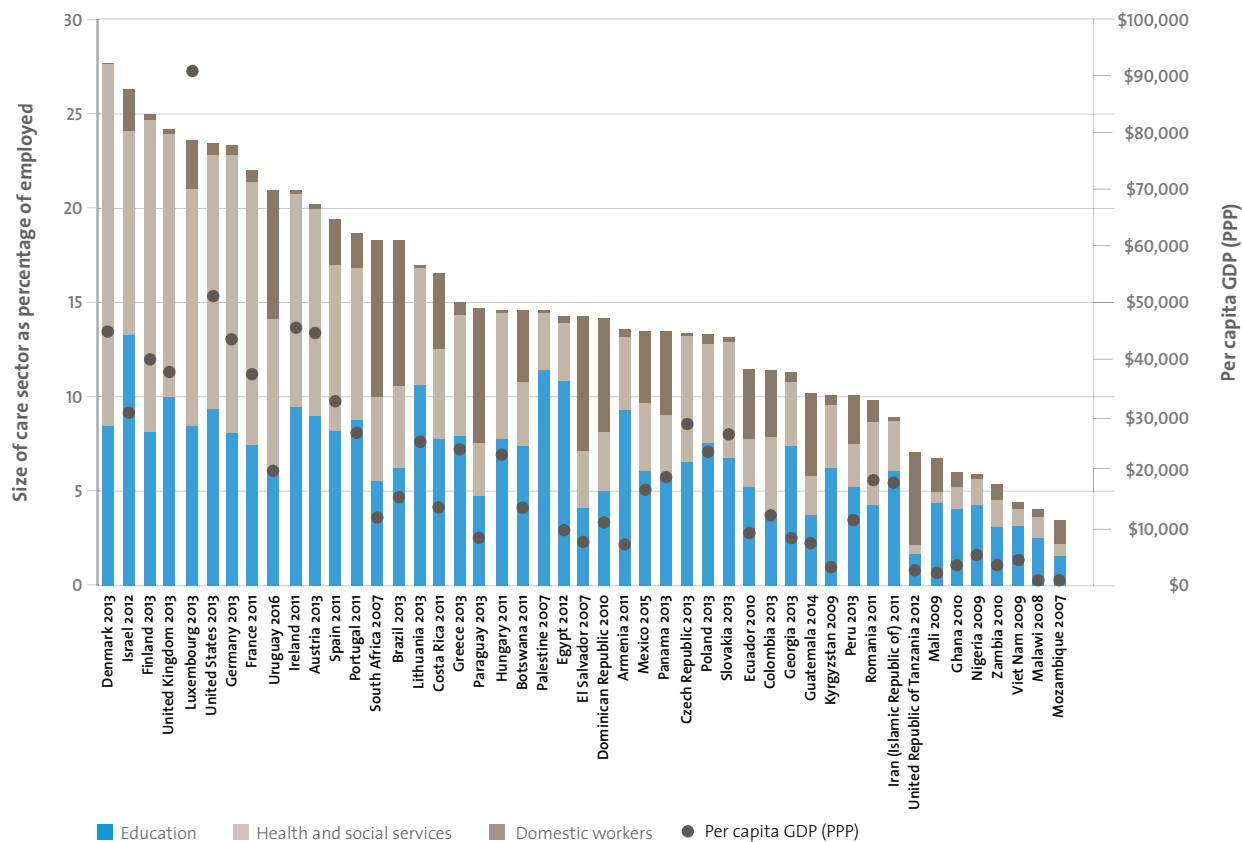
Notes: Size of the care sector estimates were calculated using data from the LIS Data Center and from IPUMS International. Per capita GDP is from The World Bank Databank, databank.worldbank.org, accessed June 2018. Per capita GDP is valued in 2011 constant international dollars using purchasing power parity (PPP) exchange rates. Countries are in descending order of care sector size.

### 3.2 Types of care workers

As seen in Figure 3, although the overall trend is that poorer countries have smaller care sectors and wealthier countries have larger sectors, there is variation within that of the makeup of the care sector. For example, there is a set of middle-income countries (Brazil, Mexico, Panama, South Africa, Uruguay) for which domestic service is an important component of the care sector, while in other countries with similar GDP numbers the rates of domestic service are much lower (Armenia, Egypt, Georgia). And among those

poorest countries that tend to have the smallest care sectors, the care work that exists is concentrated in education, as the health and human services sectors are very small proportionally. Among the countries with the largest care sectors, there is less variation in the sectoral distribution of care workers overall. Israel, which has a lower GDP than the other countries with similarly sized care sectors, stands out for the size of its education sector, which is perhaps related to the relatively large number of children in that country (see Figure 15). In section 4, we will provide further analysis of the industrial and occupational breakdowns of the care sector by region and level of development.

**FIGURE 3:**  
**Size of care sector as a percentage of all employed and per capita GDP, industry breakdowns**



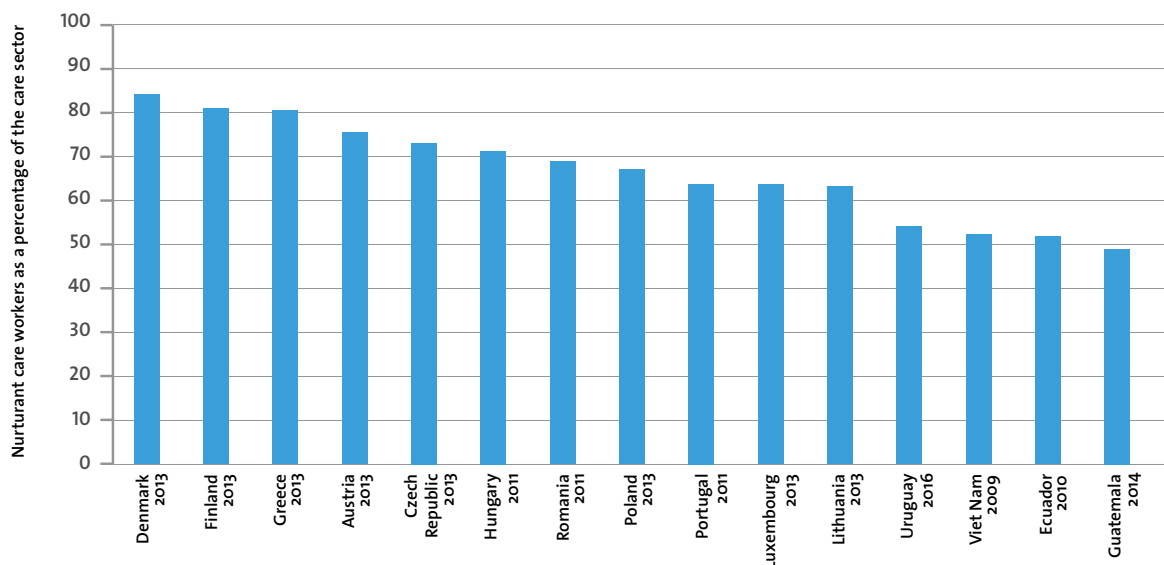
Notes: Size of the care sector estimates were calculated using data from the LIS Data Center and from IPUMS International. Per capita GDP is from the World Bank, accessed June 2018. Per capita GDP is valued in 2011 constant international dollars using purchasing power parity (PPP) exchange rates. Countries are in descending order of care sector size.

When they think of care workers, most people think of doctors, nurses, nursing attendants, childcare workers, teachers and social workers—those workers we call nurturant care workers who are engaged in direct face-to-face care. Figure 4 shows what proportion of workers are nurturant care workers compared to non-nurturant care workers in a subset of countries for which data were available (15 of the 47 countries in our dataset). In the developed countries, the large majority of workers in the care sector are considered nurturant care workers. Those in the non-nurturant category are primarily cleaners and cooks in care institutions as well as some managers and administrators. In Latin America and the Caribbean and Viet Nam, however, there are much larger proportions of non-nurturant

care workers. Many of these are domestic workers, identified primarily as cleaners. However, research has shown that the boundaries of work for domestic workers are very fluid, and many of these workers also engage in direct care for children, elders and other family members.<sup>15</sup> And workers who work within care organizations are called upon to do qualitatively different work than similarly titled workers outside the care sector.<sup>16</sup> Our focus on industry in the rest of the analysis allows for this ambiguity and national variation in the social construction of nurturant care roles and assures that we are examining the entire range of race and migration-based inequalities in the sector.

15 Hondagneu-Sotelo 2007.  
 16 Armstrong et al. 2008.

**FIGURE 4:**  
Nurturant care occupations within the care sector



Notes: Nurturant care includes education and health professionals and associate professionals as well as social work and personal care. Countries are in descending order of care sector size.

Along with the size of the care industry, the characteristics of care workers (compared to the employed in general) are a good barometer of the status of care in a society. Women and immigrants tend to dominate in the lower tiers of the labour force and, furthermore, devaluation of paid care jobs may also be related to these trends. In addition, these characteristics are important to understand the extent to which care sectors drive employment and labour demand for women and migrant workers. In some countries, of course, we also see racial segregation by occupation and industry, but racial/ethnic categories are not similarly defined across these nations and so we are unable to make this comparison in a global dataset.

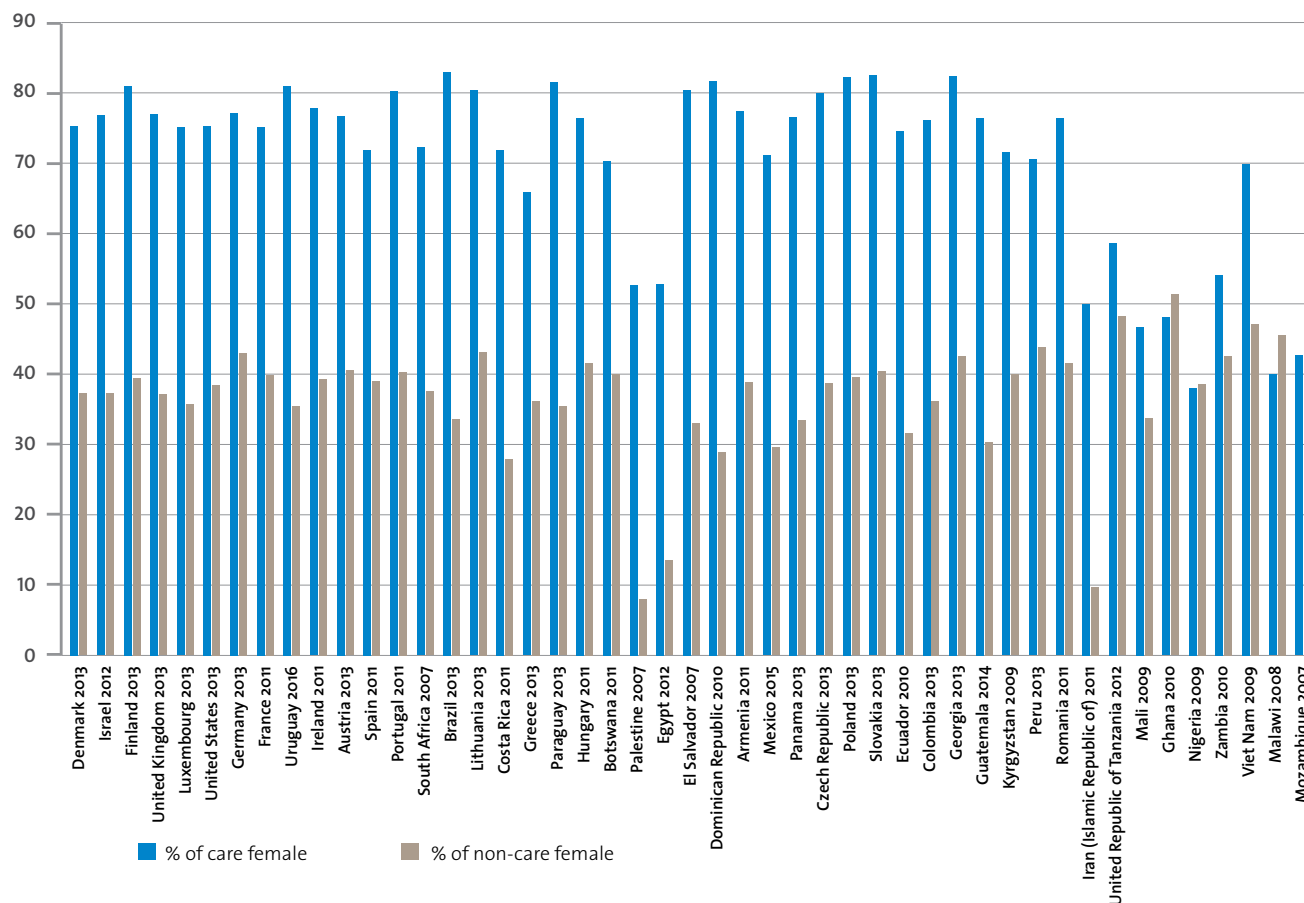
### 3.3 Women in the paid care sector

Like unpaid care, paid care is also overwhelmingly performed by women. As seen in Figure 5, women make up over 70 per cent of paid care workers in the majority of the countries analysed and over 80 per cent of paid care workers in 11 of the countries. It is also the

case across most countries that women are far more heavily represented in the care sector than in other parts of the labour market, with female representation hovering around 40 per cent or lower of non-care jobs in most countries.

There are two notable exceptions to these overwhelming trends. First, in Egypt, the Islamic Republic of Iran and State of Palestine, the rates of female representation in the care sector are much higher than in non-care jobs, but both rates are considerably lower than in other countries represented. In these countries, it appears that many fewer women are employed and those who are employed are highly concentrated in the care sector. The second group of countries that exhibit a different pattern are those with the smallest care sectors overall—largely in sub-Saharan Africa. In countries such as Ghana, Malawi, Mozambique and Nigeria, women are actually a larger proportion of the non-care workforce than of the care sector. And in Mali, United Republic of Tanzania and Zambia, the gap between women’s representation in care jobs and in non-care jobs is much smaller than for countries with a larger care sector. In these sub-Saharan African

**FIGURE 5:**  
**Percentage of care industry workers who are female compared to non-care industry workers**



Notes: Countries are in descending order of care sector size.

nations, agriculture makes up the largest segment of the economy and women tend to be over-represented in this industry. For example, in Mozambique, where three-quarters of the employed are in agriculture, 58 per cent of the workers in this sector are women.

### 3.4 The role of migrants in paid care work

The role of migrants in paid care work has received a lot of scholarly attention in recent years, with the development of the concept of 'global care chains' to characterize the linkages between people and families across the globe involved in paid and unpaid care.<sup>17</sup> Low-wage care work is characterized as one of the avenues open to immigrants

in developed countries and, in addition, some care workers migrate (for the short and long term) to developed countries for higher wages, leaving their own families in their home countries.

In this analysis, presented in Figure 6, it appears that the representation of immigrants in the care sector generally mirrors their representation in the labour force. There is variation in whether their representation in the care sector is higher, lower or about the same as their representation in the non-care sector of the economy. But in most cases the gap is not very large in either direction. It is likely that immigrant workers are concentrated in particular care occupations and not necessarily in the care sector as a whole. It is notable that the countries with the larger care sectors tend to have larger proportions of immigrant workers overall.

<sup>17</sup> Hochschild 2000; Yeates 2004.

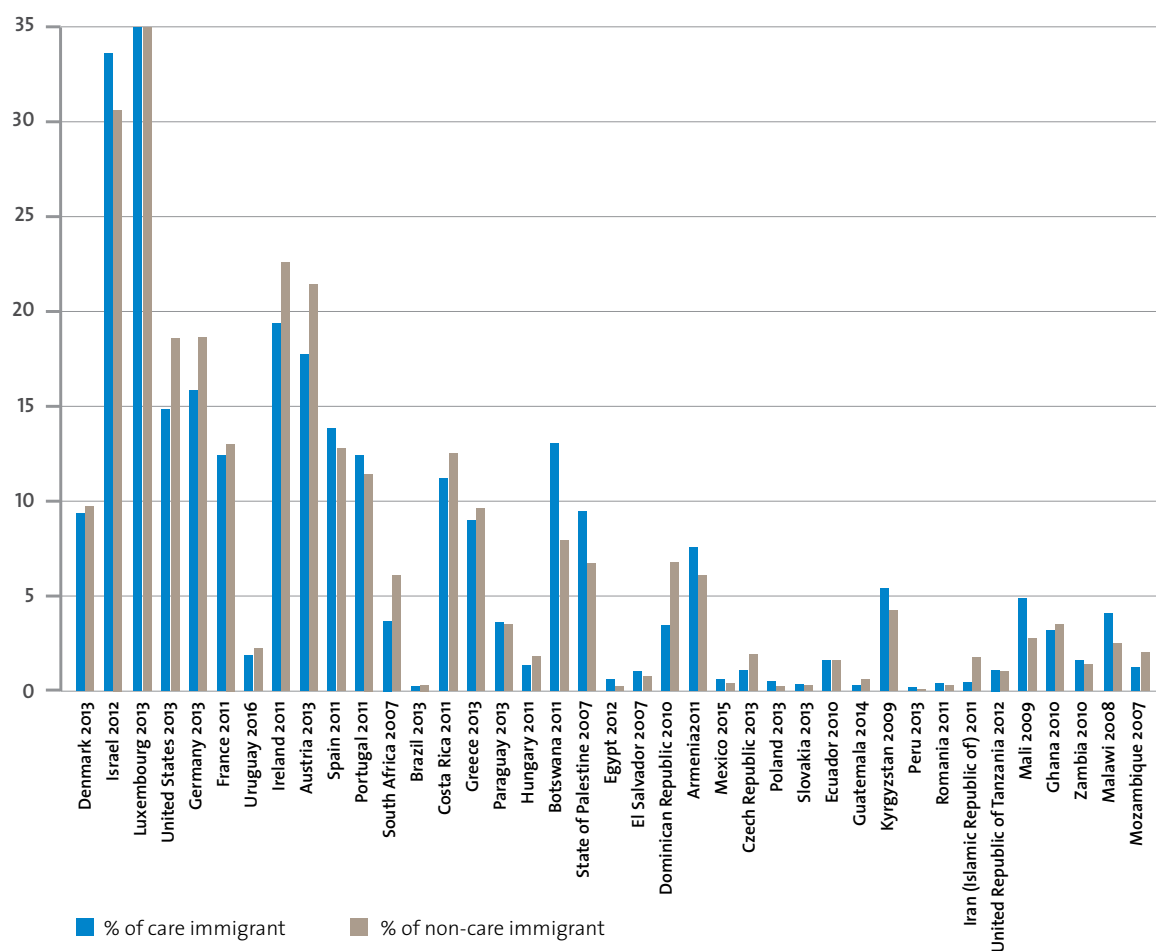


This may be a result of economic development that contributes to both the development of the care sector and pull factors for immigration. But it is also possible that the availability of care work is in itself a pull factor for immigrants and/or that the availability of an immigrant workforce contributes to the growth of the care sector.

If we examine rates of immigrants within the three industries of the care sector (Figure 7), we see evidence of sizeable differences between education, health/social services and domestic work. Especially in the developed

nations, immigrants are most over-represented in the domestic work sector and somewhat less so in health and social services. Immigrant workers are generally under-represented in education, which may also be part of the explanation for the under-representation of immigrants in the least developed countries, where education makes up a large part of the care sector. The under-representation of immigrants in education may be related to language barriers or credential requirements that may be a barrier to entry for these jobs, in contrast to domestic service and lower-skill health and social service jobs without formal entry requirements.

**FIGURE 6:**  
**Percentage of care industry workers who are immigrants compared to non-care workers**

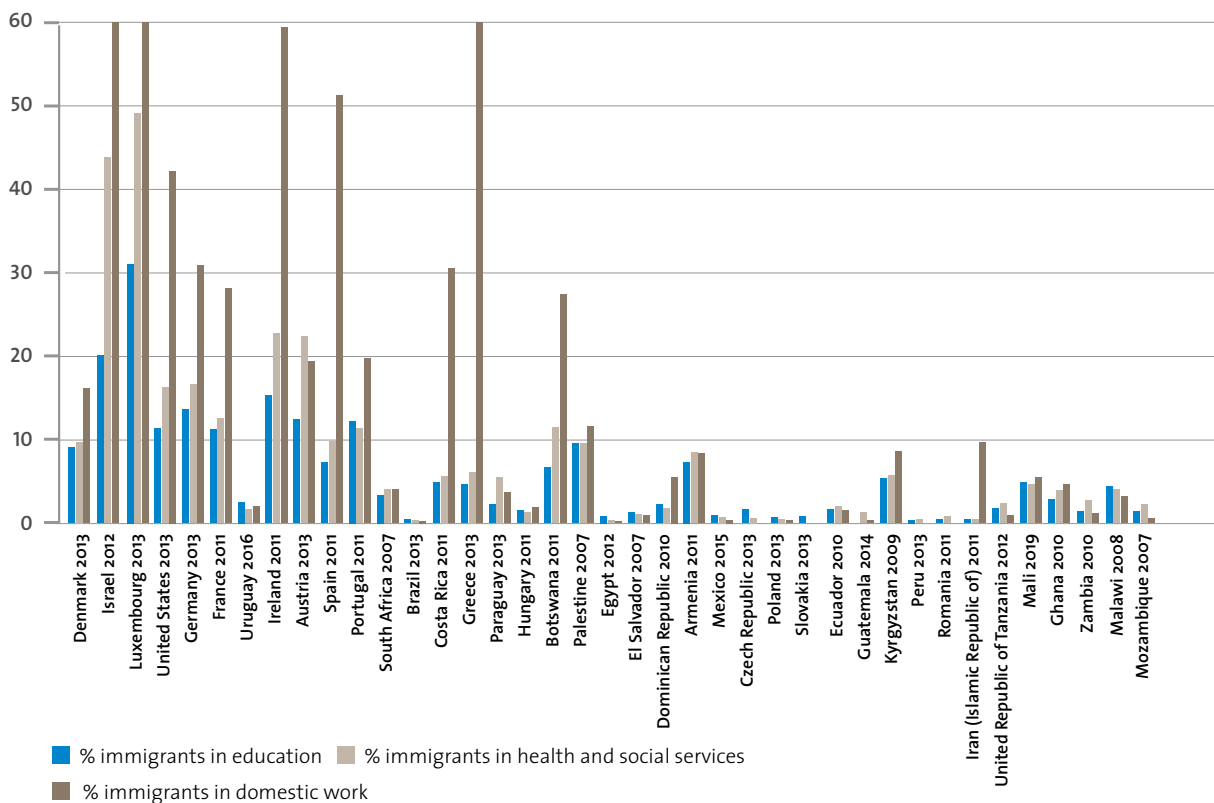


Notes: For both LIS and IPUMS data, immigrant status was constructed from nativity and citizenship (where available), such that individuals who report being either foreign-born or non-citizens are counted as immigrants. The values for Luxembourg (47.8 v 62.7) have been truncated to increase the visibility of differences in other nations. Data are not available for Columbia, Finland, Georgia, Lithuania, Nigeria, Panama, United Kingdom and Viet Nam. Countries are in descending order of care sector size.

Because the health-care industry is often characterized by polarization, we also looked at occupational breakdowns for a few illustrative cases. More detailed occupational breakdowns show that there are very specific occupations in which immigrants are concentrated, but which occupations those are varies a bit by country. As a general rule, not surprisingly, these jobs are at the lower end of the occupational spectrum within health care. For example, in the United States, immigrants are 8.7 per cent of physicians and surgeons, 13.8 per cent of registered nurses and 16.9 per cent of

nursing aides, with much lower representation in all other care occupations. Immigrants are clustered in very specific occupations and are more heavily concentrated towards the bottom end of the health-care occupational structure. But, importantly, in some countries there is also quite a strong presence of immigrants in high-level jobs. For example, in Portugal, immigrants are a higher proportion of doctors (17 per cent), only 10 per cent of personal care workers and only 6.5 per cent of elementary health-care occupations. Here immigrants are over-represented at the high end of the care sector.

**FIGURE 7:**  
**Percentage of care workers who are immigrants compared to non-care workers, by industry**



Notes: For both LIS and IPUMS data, immigrant status was constructed from nativity and citizenship (where available), such that individuals who report being either foreign-born or non-citizens are counted as immigrants. The values for domestic service in Luxembourg (97 per cent), Greece (76 per cent), and Israel (68 per cent) have been truncated to increase the visibility of differences in other nations. Data are not available for Columbia, Finland, Georgia, Lithuania, Nigeria, Panama, United Kingdom and Viet Nam. Countries are in descending order of care sector size.

4.

# THE SHAPE OF THE CARE SECTOR

The next section of our analysis will examine the industrial and occupational structure of the care sector across different contexts. Along with the size of the care sector, a better understanding of the makeup of the care sector provides us with important information about inequalities and conditions for care workers as well as the types of capacity available to the population.

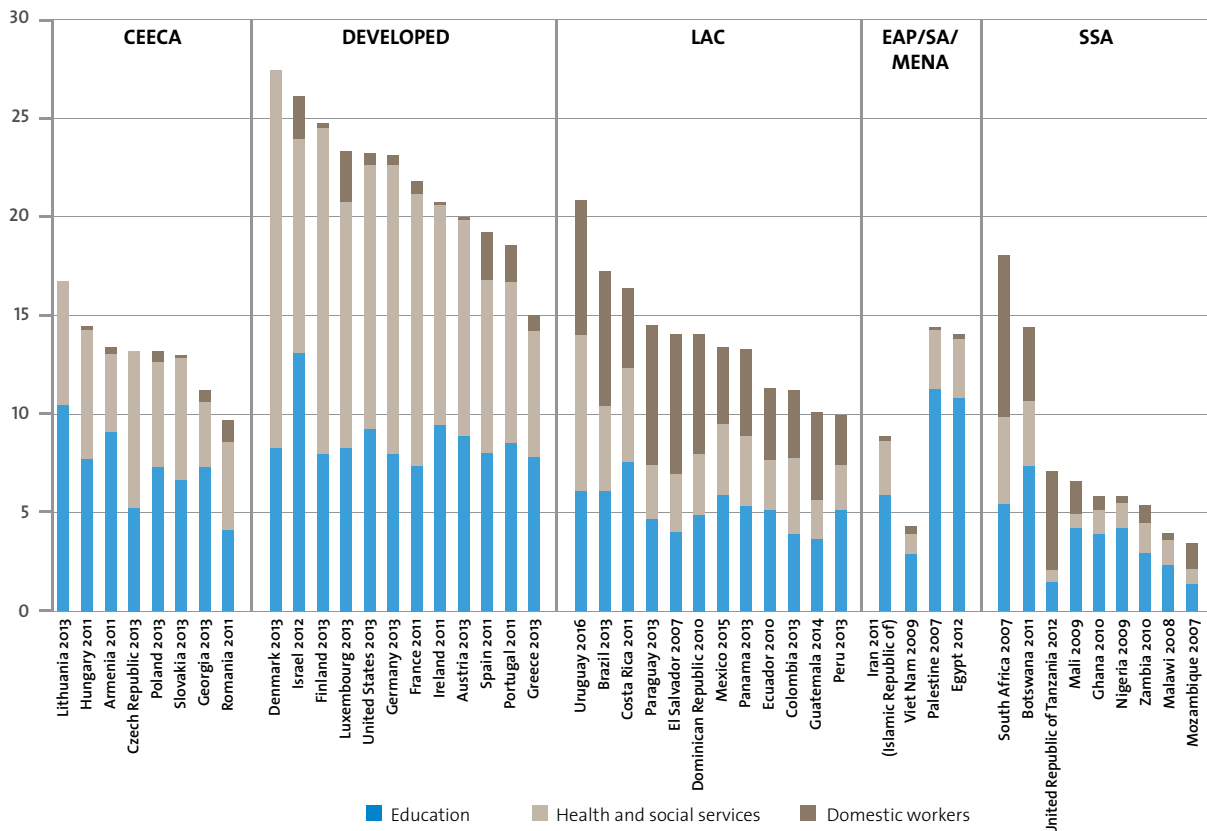
4.1

## The care sector by industrial category

We start with a breakdown of the care sector by industrial category. Figure 8 presents the breakdown of each country's care sector, showing the percentage of

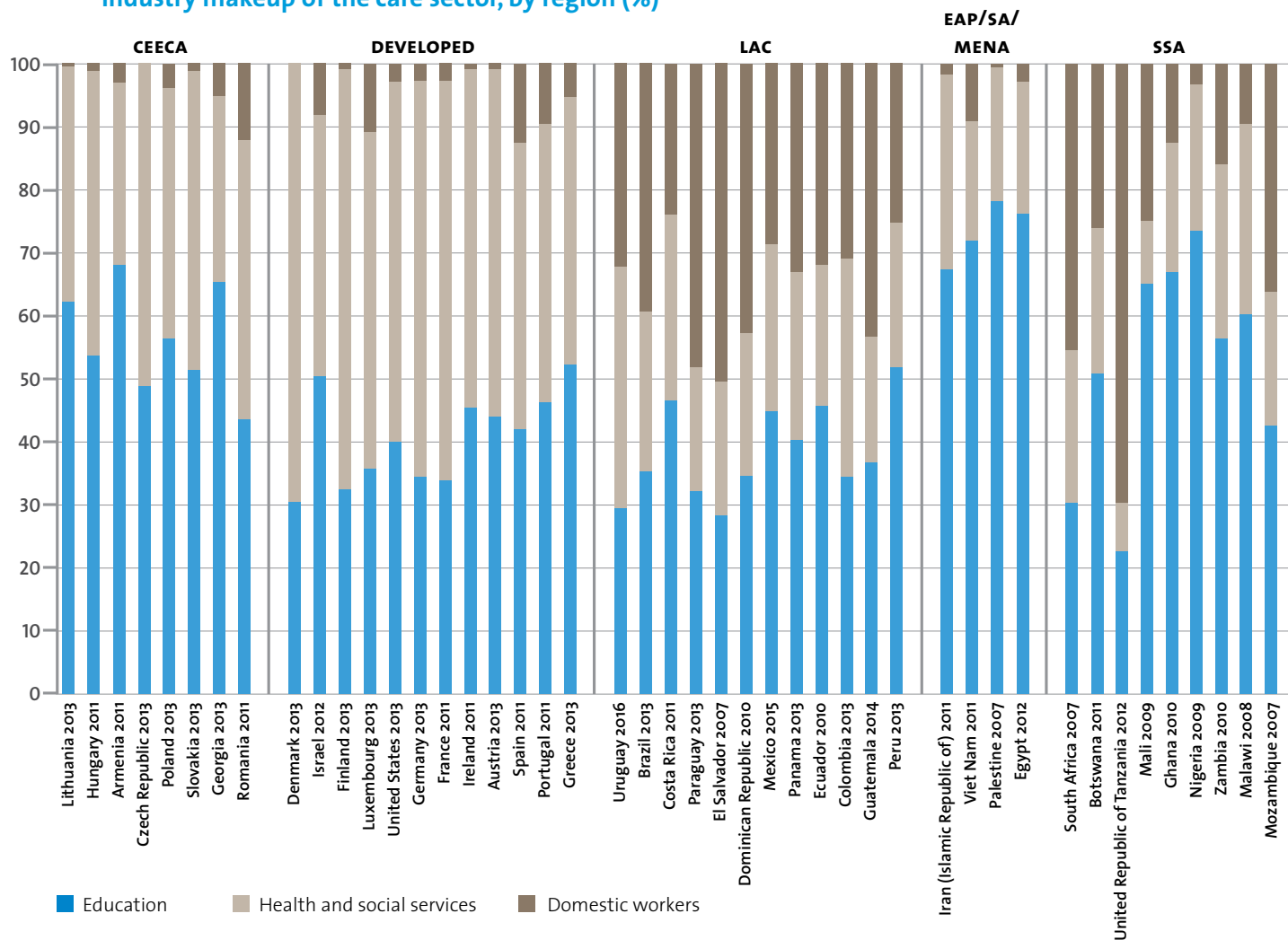
the workforce in education, health and social services and domestic work. Figure 9 displays the same data somewhat differently to remove the effect of overall sector size as a proportion of the care workforce (so each country's bar equals 100 per cent).

**FIGURE 8:**  
Size and industry makeup of the care sector of all employed, by region (%)



Notes: These regional designations are based on the UN Women regional groupings: CEECA (Central and Eastern Europe and Central Asia); LAC (Latin America and the Caribbean); EAP (East Asia and the Pacific); SA (South Asia); MENA (Middle East and North Africa); SSA (sub-Saharan Africa). Countries are in descending order of care sector size within region.

**FIGURE 9:**  
Industry makeup of the care sector, by region (%)



Notes: These regional designations are based on the UN Women regional groupings: CEECA (Central and Eastern Europe and Central Asia); LAC (Latin America and the Caribbean); EAP (East Asia and the Pacific); SA (South Asia); MENA (Middle East and North Africa); SSA (sub-Saharan Africa). Countries are in descending order of care sector size within region.

In the Developed countries, where the care sector tends to be largest, both the health-care and education sectors are quite sizable. Importantly, domestic workers, often associated with less developed countries, make up over 10 per cent of the care sector in Luxembourg, Portugal and Spain, and the numbers of domestic workers is non-negligible in a number of other Developed countries. Most countries in Central and Eastern Europe mirror the overall picture in Developed countries, but on a smaller scale overall and with less reliance on domestic workers. By contrast, domestic workers are a large presence in Latin America and

the Caribbean, making up between 30 and 50 per cent of the care sector across most of the region. Within the much smaller overall care sectors in sub-Saharan Africa, the health-care sector is dwarfed by education and, in some cases, domestic work.

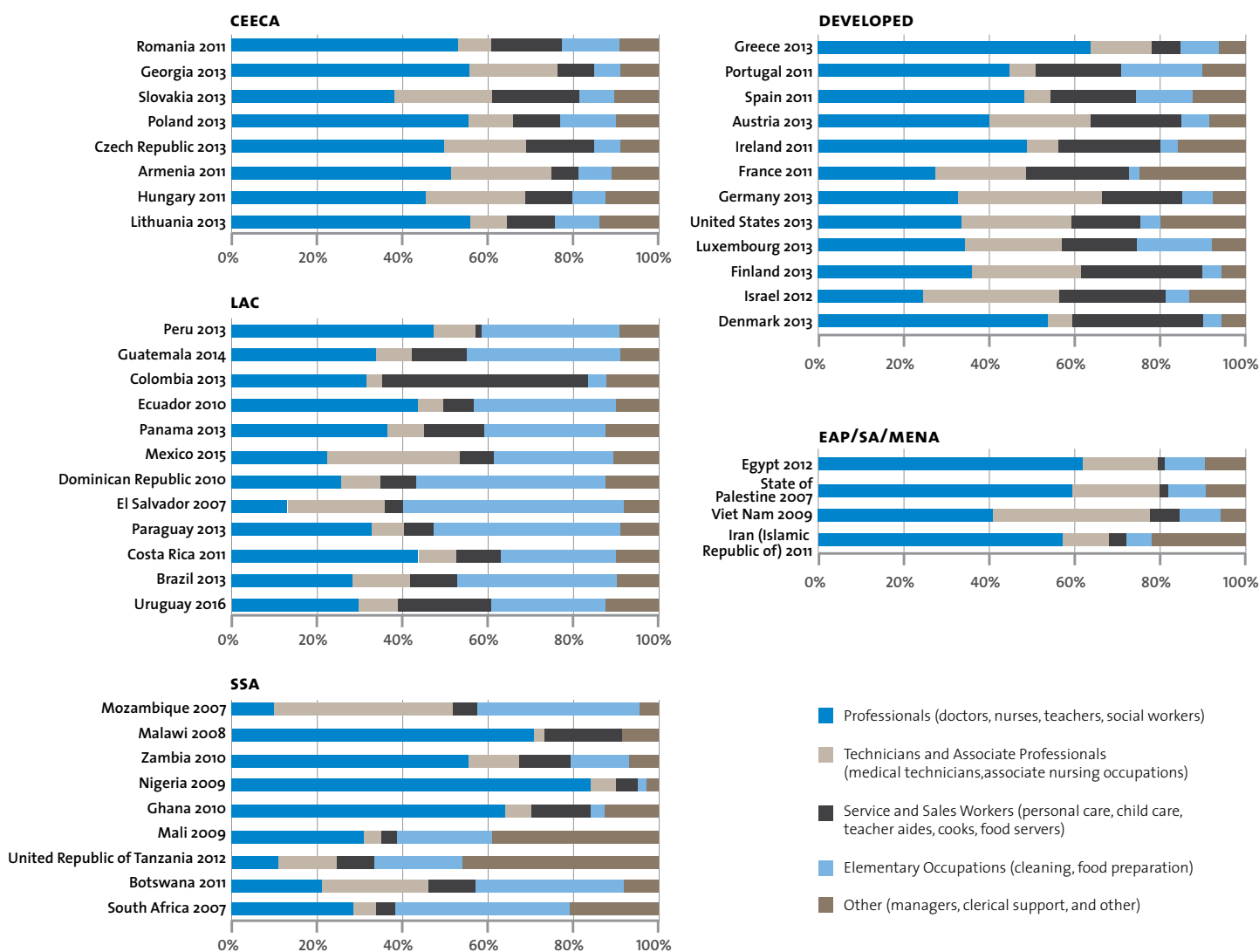
As will be discussed in more detail in section 5, in some of these contexts the size of the health-care sector and/or the education sector is not large enough to meet the basic needs of a population. A large domestic worker sector provides important care labour but cannot by itself close fundamental gaps in health-care and

education infrastructure. In addition, while health-care and education systems are usually at least partially publicly provided and regulated, paid domestic work represents a highly individualized and privatized solution to meeting the care needs of a population.

In terms of the care workforce, domestic workers are considered some of the most vulnerable in the

world—they are often excluded from legal and social protection systems and experience high rates of wage theft, exploitative treatment and abuse.<sup>18</sup> Research indicates that rates of paid private household work are tied to economic polarization,<sup>19</sup> and Merike Blofield has argued that the treatment of domestic worker rights in a given country is “an indicator of how the state balances the interests of the rich v. poor”.<sup>20</sup>

**FIGURE 10:**  
**Occupational breakdowns of care sector by region, level of professionalization**



Notes: These occupational groupings use harmonized variables from both LIS and IPUMS based on the 10-category ISCO-o8 occupational coding (International Standard Classification of Occupations). The regional designations are based on the UN Women regional groupings: CEECA (Central and Eastern Europe and Central Asia); LAC (Latin America and the Caribbean); EAP (East Asia and the Pacific); SA (South Asia); MENA (Middle East and North Africa); SSA (sub-Saharan Africa). Countries are in ascending order of care sector size within region.

18 ILO 2013.

19 Milkman et al. 1998; Jokela 2015.

20 Blofield 2009: 160.

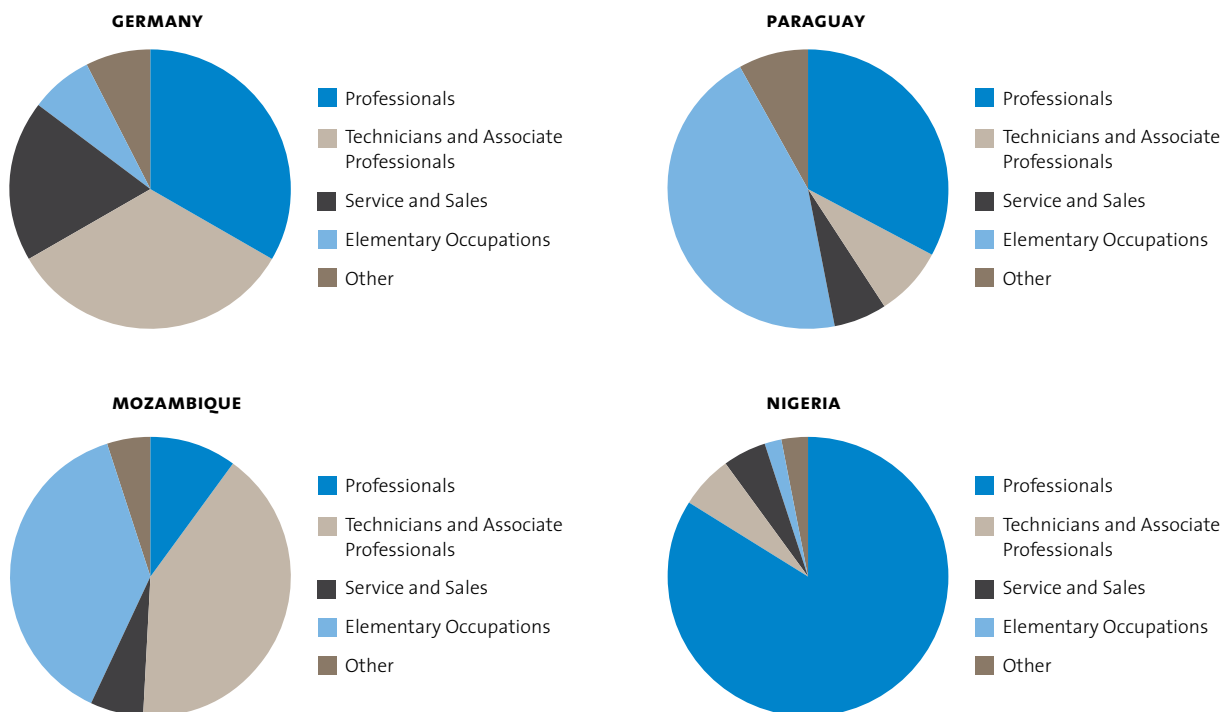
The balance among health, education and domestic work is therefore one important indicator of the strength of the paid care sector, both in terms of meeting population needs and in terms of the livelihoods and rights of workers. Another important lens is an examination of more detailed occupational breakdowns. This analysis allows us to see the levels of professionalization and division of labour within the paid care workforce.

## 4.2 Levels of professionalization in the care sector

Occupational breakdowns of the care sector for all countries where data were available are displayed in Figure 10. Taken together with what we know about the variations in overall size, these occupational breakdowns fall into four identifiable patterns. In Figure 11, we have chosen one country that is typical of each of these four patterns as illustrative examples.

First, the countries with the largest care sectors (>20 per cent of the labour force) have levels of professionalization that in general range between 25-40 per cent (in Figure 11, Germany is illustrative of this first pattern). Most of these countries are in the Developed group (Austria, Finland, France, Germany, Israel, Luxembourg, United States). It should be noted, however, that Uruguay also fits this pattern occupationally (the care sector is 20.8 per cent of the labour force and just under 30 per cent are professionals). Although the prevalence of domestic service in Uruguay parallels other Latin American countries, in its size and level of professionalization of the care sector it is more like the Developed countries. Also, Ireland stands out as having 50 per cent of its care sector professionalized. And Denmark is truly an outlier, with the largest care sector of all the countries we analysed (27 per cent of all employed) and the highest level of professionalization among the Developed countries (54 per cent). It is of note that among this group, those countries on the lower end in terms of proportion of professional workers have larger segments of associate professionals.

**FIGURE 11:**  
Examples, occupational breakdowns



Notes: These occupational groupings use harmonized variables from both LIS and IPUMS based on the 10-category ISCO-o8 occupational coding (International Standard Classification of Occupations).

With the exception of El Salvador, Mexico and Uruguay, all of the other countries analysed in Latin America and the Caribbean have smaller overall care sectors than the Developed countries but similar proportions of professional workers (this pattern is illustrated by Paraguay in Figure 11). This is particularly interesting given the much larger presence of domestic workers in Latin American care workforces, which can be seen here in the higher proportion of care workers who are identified as 'elementary occupations'. The Developed countries have higher proportions of associate professionals and service workers in the care sector rather than of domestic workers. South Africa follows a pattern more similar to Latin America and the Caribbean than to other countries in sub-Saharan Africa.

The group of countries with the highest proportion of professional workers is largely in sub-Saharan Africa—Ghana, Malawi, Nigeria (the illustrative example in Figure 11) and Zambia are the clearest examples—with levels of professionalization ranging from 56 to 84 per cent. It is important to remember that these countries have some of the smallest overall care sectors of those analysed. It appears that in these countries small numbers of professionals, especially in the education sector, are working largely in isolation without a substantial infrastructure of associate professionals and technicians to support them. Some countries in the Middle East (Egypt, State of Palestine) and Central and Eastern Europe (Armenia, Czech Republic, Georgia, Lithuania, Poland) follow a similar pattern, although not as extreme as the African countries. It should be noted that Greece follows a pattern more closely parallel to this group than to the other Developed countries.

Finally, there is a group of countries with very small care sectors as well as very low levels of professionalization (illustrated by Mozambique in Figure 11). Mozambique and United Republic of Tanzania are the most extreme cases of this pattern, with very little presence of care professionals. Botswana, El Salvador and Mexico also follow a similar pattern, although less extreme.

This analysis of the levels of professionalization in the care sector has several important implications. Taking the first two patterns first—where there are medium

to large care sectors—the robust number of professional care workers indicates that there is a base level of access to different kinds of expertise for the population.<sup>21</sup> The process of professionalization in care work across national contexts has meant that some occupations—such as physicians and nurses—have achieved a high level of social closure<sup>22</sup> through a combination of licensing and educational requirements. While most care workers are subject to a well-documented wage penalty,<sup>23</sup> social closure among these highly professionalized groups has largely eliminated the care penalty and in some cases has even led to a wage bonus.<sup>24</sup> It is important to keep in mind that the very processes of professionalization that have produced this protective social closure for some workers has in some cases simultaneously undermined and further devalued other groups of care workers.<sup>25</sup> So while some workers clearly benefit from high levels of professionalization, it is not clear that this benefit expands to all care sector workers—and in fact a high level of social closure in professional care jobs may be one of the mechanisms that links growth of the care sector to economic polarization.

It is also of note that the levels of professionalization are similar between these two cases and that the main difference is whether the rest of the care sector is dominated by associate professionals and service workers or elementary occupations (largely the domestic workforce in these countries). Further research should explore who in the countries with small associate professional workforces is doing the tasks assigned to the associate professionals where they exist. Are these tasks being done by care workers labelled as professional? Or

21 It is important to note here that professional care workers are not the only ones in the care diamond with expertise. Family members, direct care workers in nursing homes and childcare workers all have a set of skills and expert knowledge. Our focus here is not the exclusive access to expertise of these workers but the uniqueness of the type of expertise each group of workers brings to the care enterprise.

22 The tendency of groups to monopolize resources and restrict entry to outsiders in order to maximize their own rewards.

23 England 1992; England et al. 2002; Budig and Misra 2010; Barron and West 2013; Hirsch and Manzella 2015; Lightman 2017; Dong et al. 2017; Budig et al. forthcoming.

24 Barron and West 2013; Lightman 2017; Budig et al. 2018. For a general discussion of the role of social closure in raising wages, see Weeden 2002.

25 Duffy 2011.

are they being done by workers in ‘elementary occupations’? That is: How have tasks been reclassified in the social organization of the workforce? And which organization has the best outcomes for the population receiving care and for workers?

In the last two cases—the two different illustrations from sub-Saharan Africa—we see two very distinct patterns in those countries with the smallest overall care sectors. In one case the small numbers of care workers are almost exclusively professionals, while in the other there is almost a complete absence of professionals. Again there is fertile ground for further

research here. Are some of these differences explained by differences in access to institutions of higher education to obtain professional credentials? Is the practice of care itself dramatically different in these countries or is it a more socially constructed classification of workers? What is the role of international aid organizations such as Doctors Without Borders in creating these different patterns? And—although the size of the care sector is clearly currently inadequate to meet population needs in both cases—does starting out with one pattern or another predict growth in a direction that better meets the needs of care recipients and care workers?



## 5.

# THE RELATIONSHIP BETWEEN CARE SECTOR SIZE AND CARE NEED

The paid care sector provides jobs for many workers but is also fundamentally about meeting the care needs of a population. In this last section of our analysis, we ask to what extent the size of the care sector is a match or mismatch with care needs. Here we explicitly examine the adequacy of the size of the care sector across countries and regions and the responsiveness of the size of the sector to the magnitude of care needs. We acknowledge that many care needs are, in fact, met with unpaid care but also recognize paid care as an important resource that allows families (and women especially) to make choices about paid and unpaid work. In addition, we use these analyses to question assumptions about the relationship between care needs and the relative sizes of care sectors across nations. In other words, can we expect nations with more elders or more children to have larger care sectors? To answer these questions, we examine the varied care needs of countries using different types of measures: care dependency ratios, age distributions, female employment rates and overall population size.

### 5.1

#### The care dependency ratio

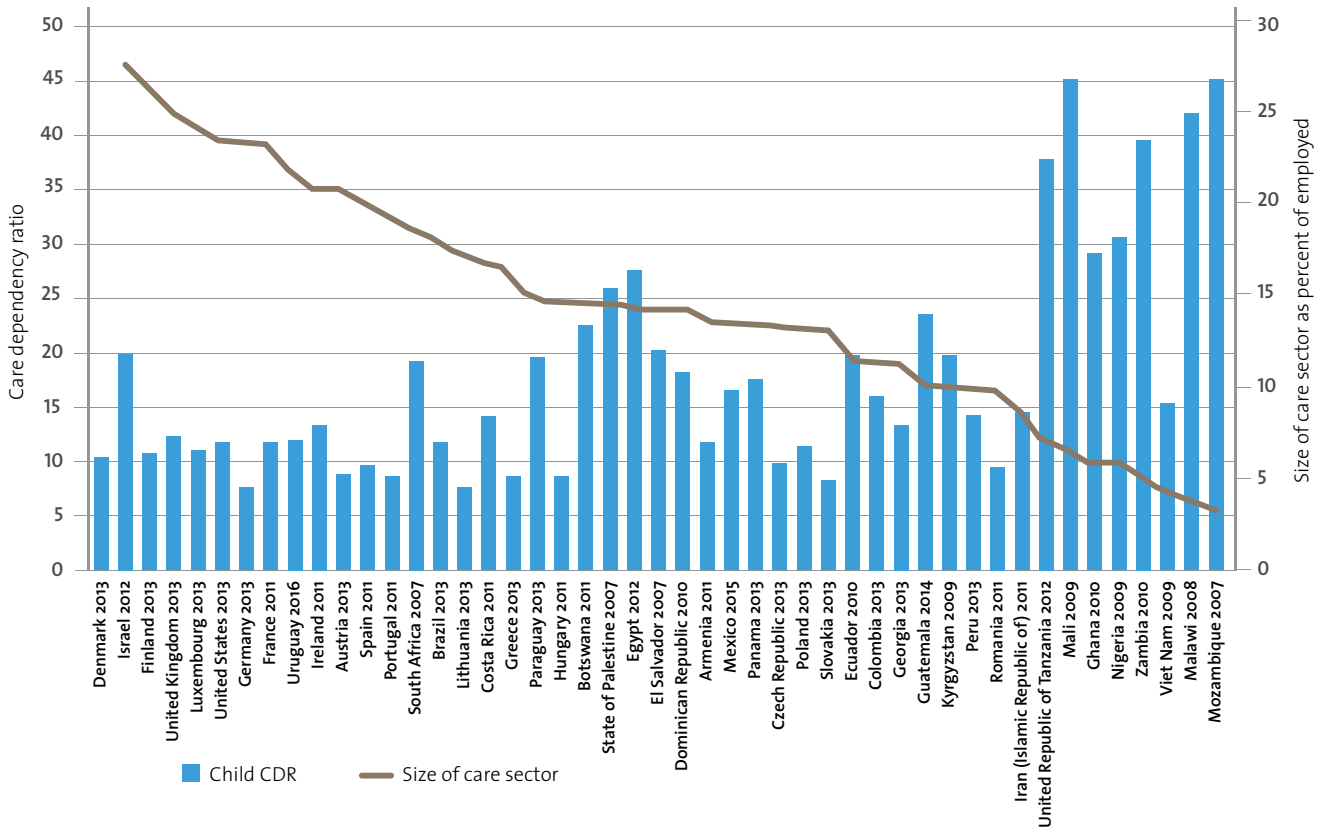
The care dependency ratio (CDR) measures the relationship between the number of people who are most likely to need care and the number of those who are most likely to provide care.<sup>26</sup> For our purposes, we use two different dependency ratios, one focusing on the young population and one focusing on the elderly population. The child CDR is a ratio of the number of children aged 0-5 in a given country to the number of individuals aged 15-64 multiplied by 100. A CDR of 20 means that for every 100 people aged 15-64, there are 20 children aged 5 and under. On the other hand, the elder CDR is the ratio of the number of individuals aged 75 and older in a given country to the number of individuals aged 15-64 (multiplied by 100).

We employ CDRs as an indicator of care needs but also recognize their limitations. Not all of those whom we define as 'dependents' are in need of care, and many of them may actually provide care to others. In addition, illness and disability can occur at any age, including those we have broadly characterized as potential caregivers.

Figure 12 shows the size of the care sector superimposed with representations of the child CDR. For the child CDR, higher numbers indicate that there are more children (aged 0-5) relative to the likely caregiving population ages (aged 15-64), indicating a potentially higher need for paid care. However, those countries with the highest child CDRs are those with the smallest care sectors. Bivariate tests for correlation confirm this (Pearson's  $r = -0.64$ ). In the poorest countries, high fertility rates and the lack of an institutionalized care infrastructure come together in unexpected ways.

26 UNRISD 2010, Chapter 7.

**FIGURE 12:**  
**Child care dependency ratio (CDR) and size of care sector**



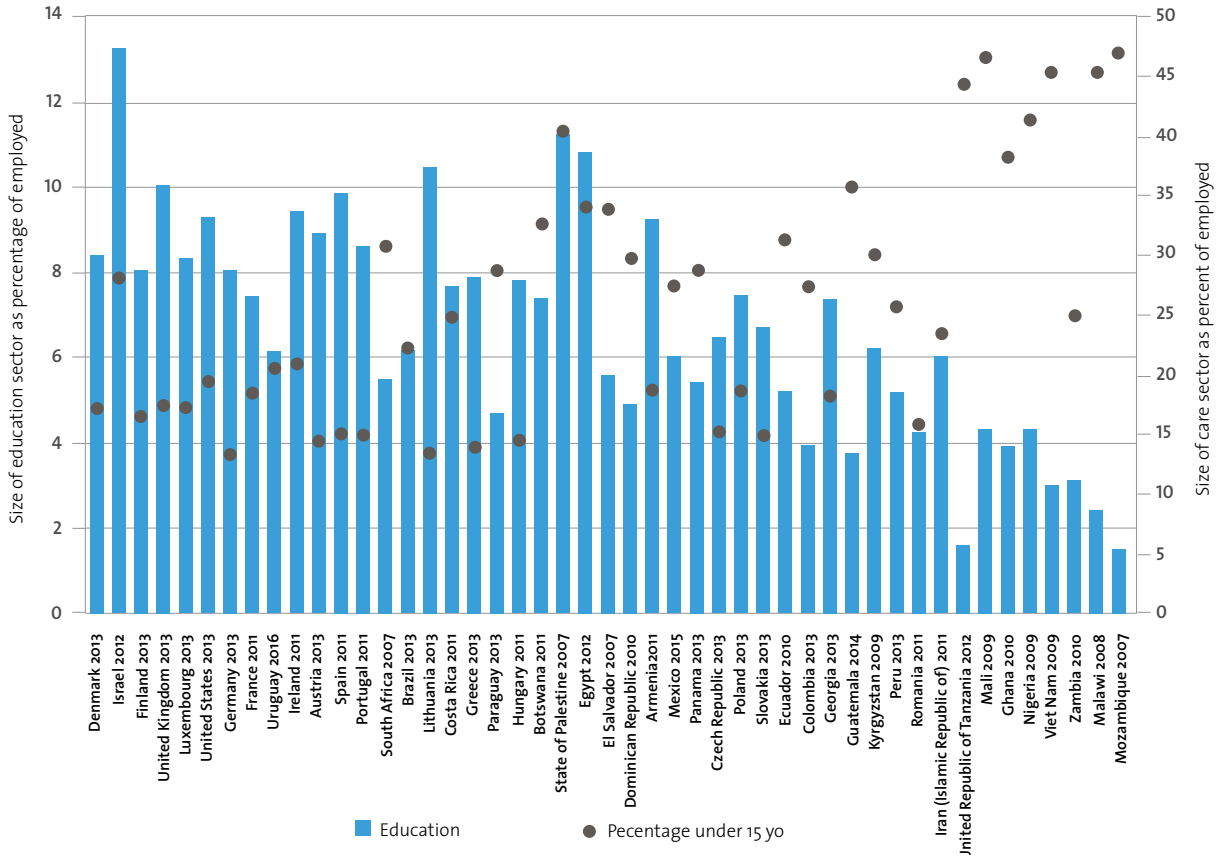
Notes: Child CDR is a ratio of the number of individuals aged 0-5 in a given country to the number of individuals aged 15-64 multiplied by 100. A CDR of 20 means that for every 100 individuals aged 15-64, there are 20 children aged 5 and under. Countries are in descending order of care sector size.

Interestingly, this pattern holds true even when we examine education and childcare—those services most directly targeted at children—separately

(Pearson’s  $r = -0.56$ ).<sup>27</sup> Again, the poorest countries have the highest number of children and the smallest education sectors (see Figure 13).

27 We chose to use children under 15 as the comparison group for two reasons. First, in many parts of the world, children aged 15-17 are the least likely to go to school. Second, we used 15 as the lower bound in the calculation of the CDR denominator, indicating persons more likely to be providing care than to be recipients of care in many parts of the world.

**FIGURE 13:**  
**Size of education sector and percentage of population under 15 years old**



Notes: Countries are in descending order of care sector size.

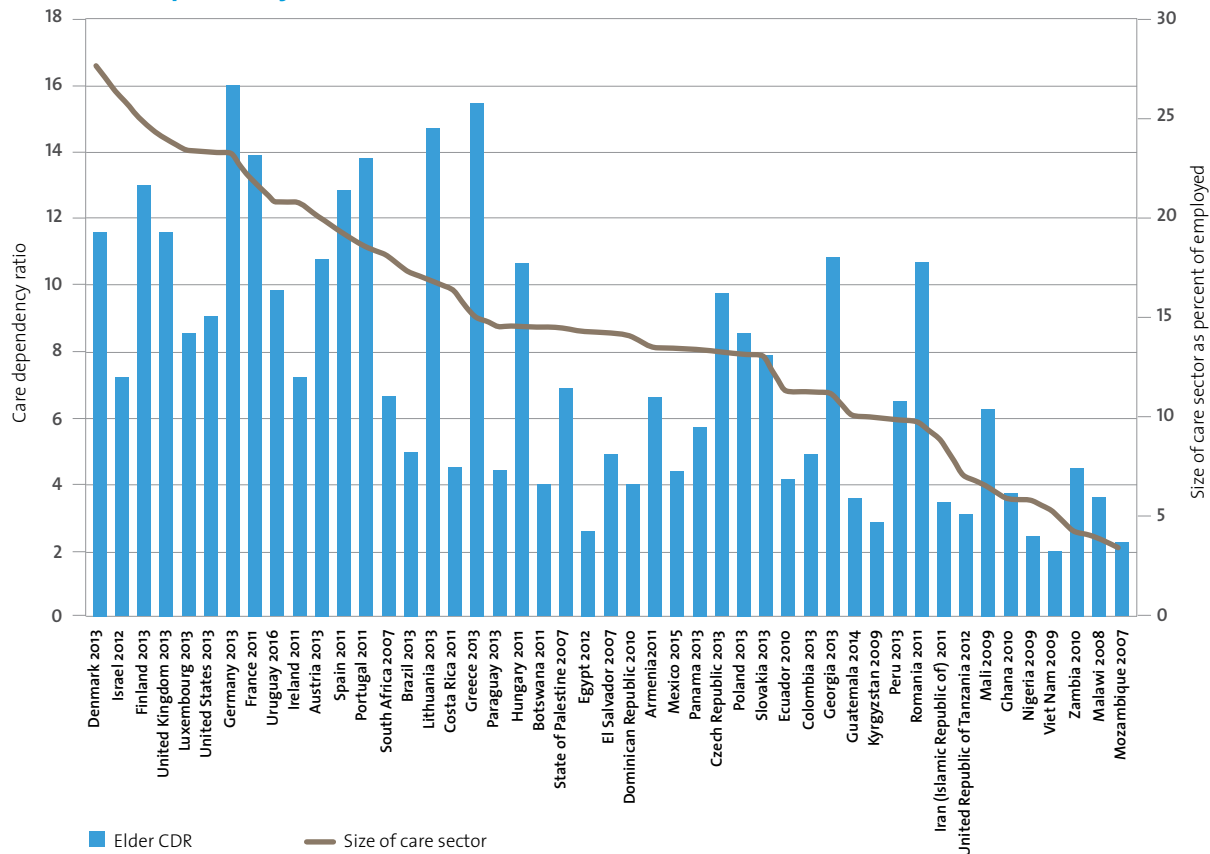
In contrast to the child CDR, the elder CDR does show a consistent pattern of relationship with the size of the paid care sector (see Figure 14). Bivariate tests for correlation confirm a positive relationship (Pearson’s  $r = 0.63$ ), indicating that larger measures of need for elder care are associated with larger care sectors.

The direction of causality here is difficult to untangle, as a higher proportion of elder residents may be the result of larger and more institutionalized health-care sectors in the Developed countries, leading to longer life expectancies. But it is notable that populations of elders and large paid care sectors go together in a way that is not true for children.

Egypt, Israel and South Africa seem to be the exceptions here—they all have relatively large care sectors, corresponding with a high child CDR and despite lower elder CDRs. As seen in Figure 3, a large portion of the Egyptian and Israeli care sectors are in education. In South Africa, the election of the African National Congress (ANC) government in 1994 resulted in a dramatic expansion of health and social services and accessibility to those services.<sup>28</sup> However, these cases of correspondence between child CDR and care sector size are the exception rather than the rule. High child dependency ratios are generally correlated with less development and lower GDP, which seem to forestall any related increase in the availability of paid care.

<sup>28</sup> Lund 2010.

**FIGURE 14:**  
**Elder care dependency ratio (CDR) and size of care sector**



Notes: Elder care dependency ratio (CDR) is a ratio of the number of individuals aged 75 and older in a given country to the number of individuals aged 15-64 (multiplied by 100). An elder CDR of 20 means that for every 100 individuals aged 15-64, there are 20 elders aged 75 and over. Countries are in descending order of care sector size.

Perhaps ideally we would compare the child CDR to only childcare services, but childcare workers are in multiple places in the data and can only be separately identified in a few countries. Similarly, we cannot separately identify elder care workers who may be domestic workers, health-care workers or social services workers. We do believe that the overall size of the sector is the best measure, given the data limitations.

## 5.2 Age distributions, national wealth and care needs

In trying to understand the positive relationship between elder care needs and care sector size, but the negative relationship between childcare and education needs and sector size, we examined the relationship between age distributions, national wealth and care needs.

Figure 15 provides an alternative visual representation of the relationships among the size of the care sector, the age distribution of a population and the wealth of a country. Here it becomes clear that among those

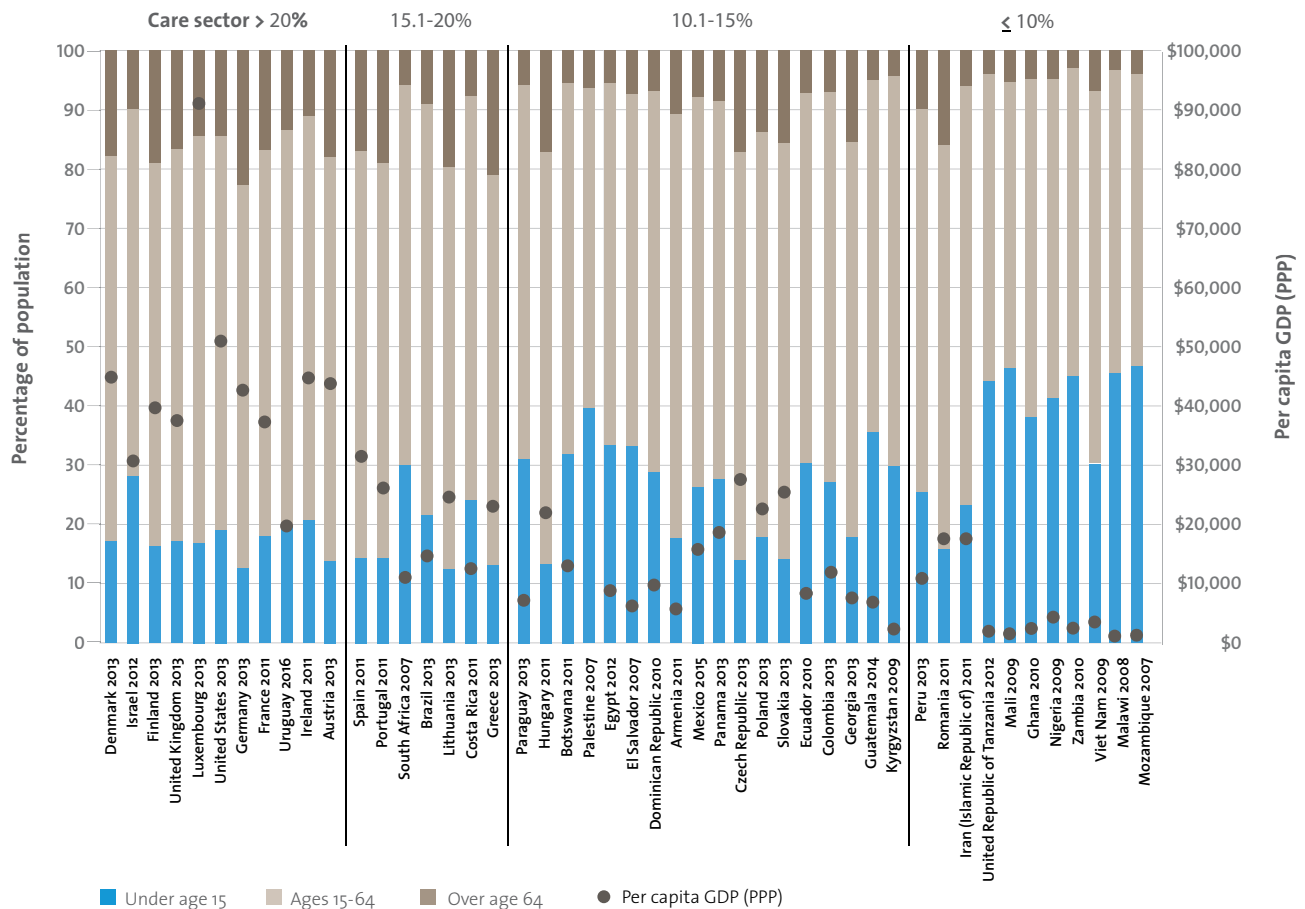
countries with the largest care sectors (on the left of the chart), there are generally smaller proportions of children and larger proportions of elders (again, with the exception of Israel). On the right side of the chart, among countries with the smallest care sectors, there are very high proportions of children and lower proportions of elders (with the exception of Romania). Where there is more variability in the middle, among countries whose care sectors range from 10 to 20 per cent of the labour force. The role of GDP in life expectancy (and a top-heavy age distribution) is well known, but we still see a great amount of variability in care sector size within groups of countries with similar levels of

development. This variability, especially in nations with mid-sized care sectors, suggests a need to more carefully explore the relationship between wealth, need and care as well as the impact of policy.

### 5.3 The female employment rate and the size of the paid care sector

Of course, we know that many care needs are met by women family members and friends as unpaid labour. To explore the question of whether paid care is in some ways a substitute when that unpaid labour is less

**FIGURE 15:**  
Care needs, GDP and the size of the care sector

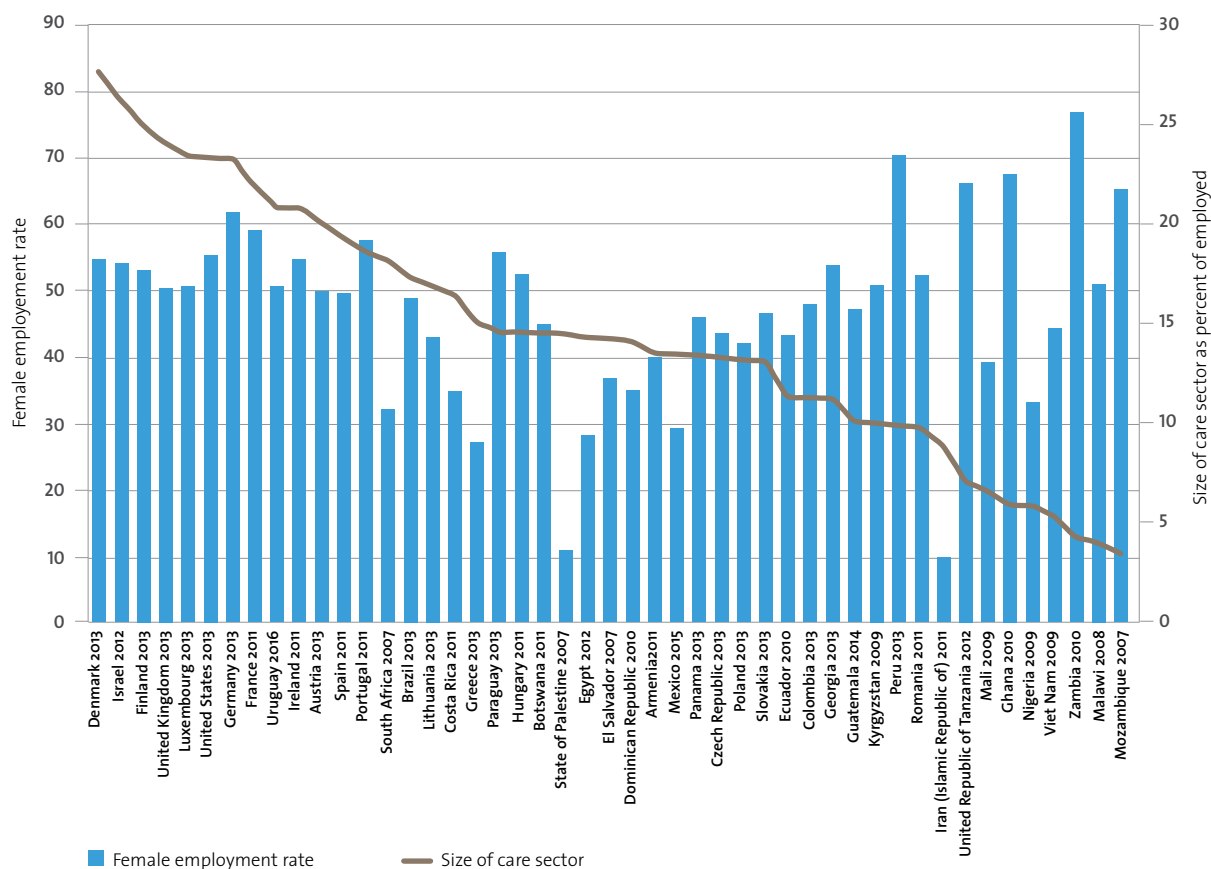


Notes: Per capita GDP from the World Bank, accessed June 2018. Per capita GDP is valued in 2011 constant international dollars using purchasing power parity (PPP) exchange rates. Countries are in descending order of care sector size.

available, we examine the relationship between the female employment rate and the size of the paid care sector. Based on Figure 16, paid care and unpaid caring labour do not appear to be direct substitutes for each other as there is no relationship between the size of the

paid care sector and the rate of female employment (bivariate tests for correlation show no significant relationship). Furthermore, we find no significant interaction between CDRs and the female employment rate that predicts care sector size (data not shown).

**FIGURE 16:**  
**Female employment rate and size of care sector**



Note: Female employment rate is the percentage of females aged 15-64 who are employed. Countries are in descending order of care sector size.

## 5.4 The ratio of care workers to the size of the population potentially needing care

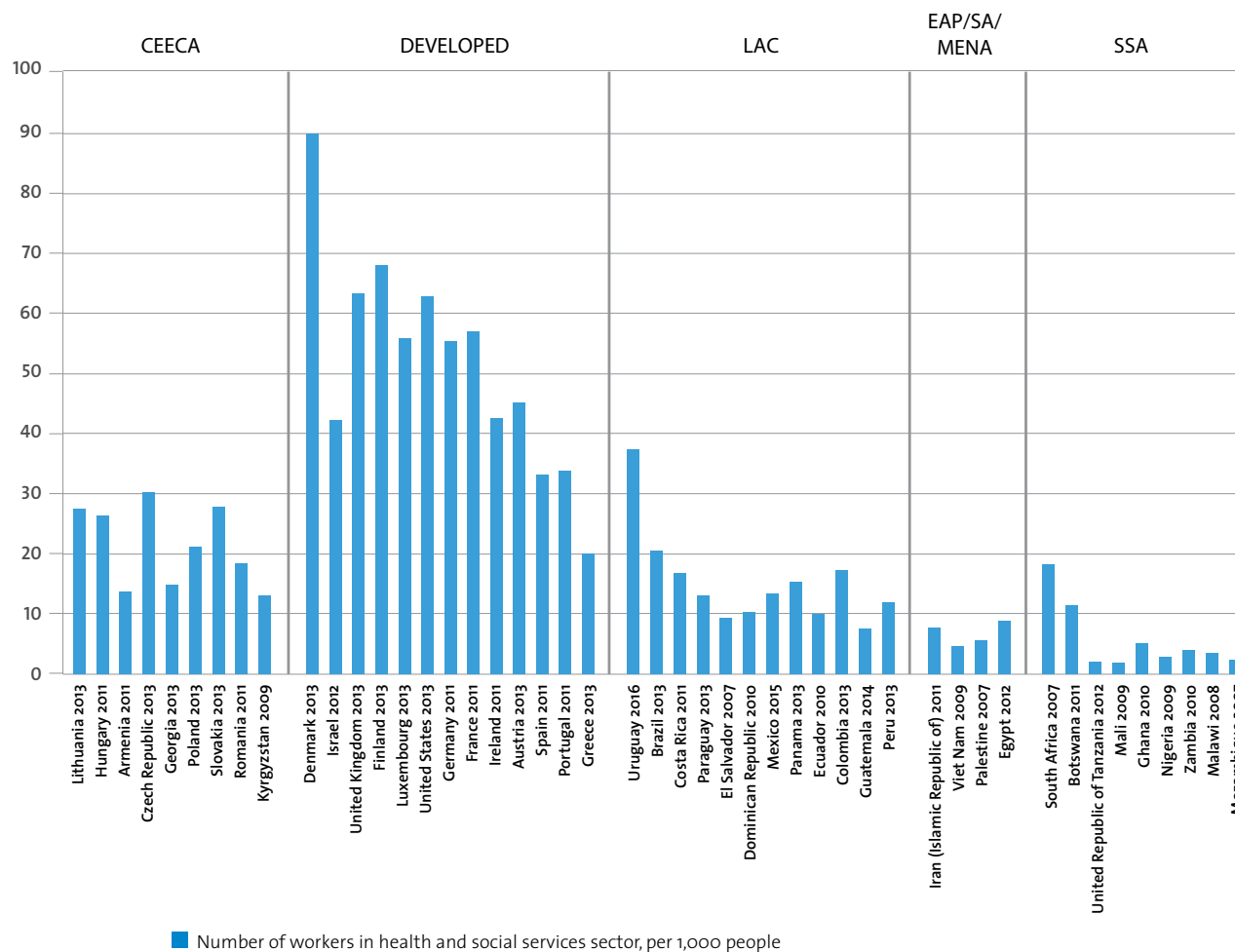
As a final measure of the relationship between care needs and the size of the paid care workforce, we examine the ratio of the absolute number of care workers to the size of the population potentially needing care.

Figures 17 and 18 measure the ratios of care workers to people needing or potentially needing care and show a range of inequalities in terms of access to care as well as some certain inadequacies. Most of the Developed countries have between 35 and 70 health-care workers per 1,000 people in the population, with Denmark reaching 90 health-care workers per 1,000 (see Figure 17). By contrast, most of the countries in sub-Saharan Africa have fewer than five health-care workers per 1,000. With the exception of Uruguay, countries in Latin

America and the Caribbean and the few countries we have data for in Asia and the Middle East also have limited access to health care for their populations, with between five and 20 health-care workers per 1,000 people. The World Health Organization (WHO) standard is that 2.3 health professionals per 1,000 people

in the population is the minimum required to provide a basic standard of care.<sup>29</sup> Our measure includes a wider range of health-care workers beyond this group, but it is clear that in those countries with small sectors and low levels of professionalization, the health-care sector falls below even this basic standard of care.

**FIGURE 17:**  
Size of health and social services sector, relative to population



Notes: The regional designations are based on the UN Women regional groupings: CEECA (Central and Eastern Europe and Central Asia); LAC (Latin America and the Caribbean); EAP (East Asia and the Pacific); SA (South Asia); MENA (Middle East and North Africa); SSA (sub-Saharan Africa). Countries are in descending order of care sector size within region.

There are equally vast disparities in the provision of education—and equally dismaying indicators of unmet need (see Figure 18). In the Developed countries, there are between 150 and 250 education

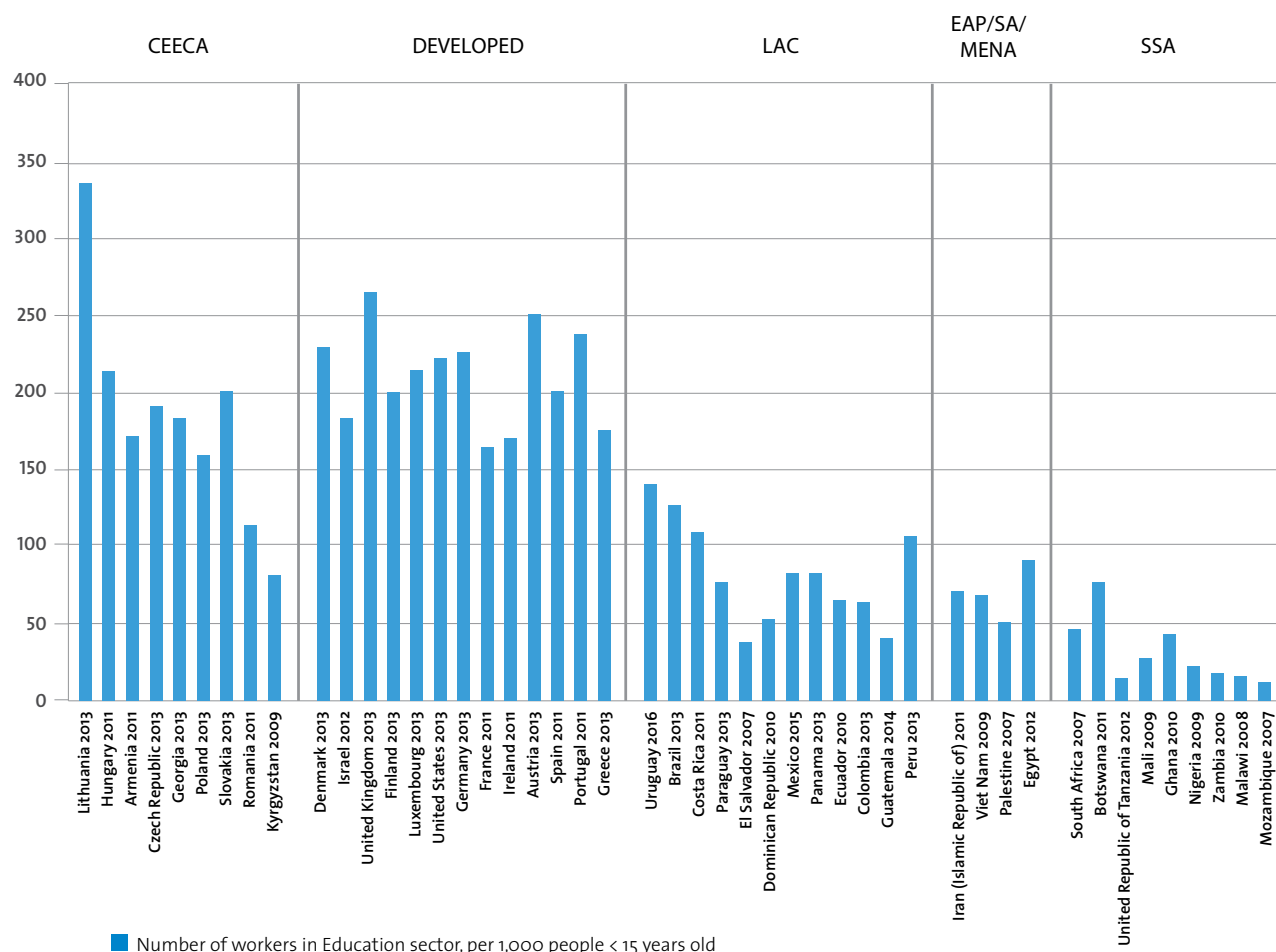
workers for each 1,000 children under 15. With a couple of exceptions, countries in Central and Eastern Europe are in the same range, albeit towards the

29 World Health Organization 2006.

lower end. By contrast, in sub-Saharan Africa and parts of Latin America and the Caribbean that ratio is under 50 education workers per 1,000 children under 15, reaching as low as 11 in Mozambique. The standard set by the United Nations Educational, Scientific and

Cultural Organization (UNESCO) for adequate provision of education is a pupil-teacher ratio of 40:1 or less<sup>30</sup>—again, considering that our data include a wider range of workers than teachers, there are many countries that fall below this basic benchmark.

**FIGURE 18:**  
Size of education sector, relative to size of population under 15 years old



Notes: Countries are in descending order of care sector size within region.

30 UNESCO Institute for Statistics 2006.



## 6.

# CONCLUSION

As is often true of a large-scale analysis, these findings may raise more questions than they answer. We understand this project as part of an ongoing effort to engage in comparative research that explores the organization of the care economy around the globe, and here we will point to some of the implications of this study for future research.

First, the clear relationship between the size of the paid care sector and national wealth, while not surprising, does highlight the lack of access to care as an important cost of global economic inequality. A care lens provides an important angle on the costs of poverty and global stratification for populations. Additionally, the places where we see variation in countries with similar levels of wealth point to the need for additional research to explore the role of policy in the development of a strong paid care sector. That is, while wealth is clearly one driving factor, policy structures also have an impact on the strength of the care sector in countries at all wealth levels.

Second, in terms of the demographics of paid care, this analysis also reinforces the importance of the sector for women's employment, particularly in countries where many other sectors are closed to them. Outside of the economies that are still dominated by agriculture, women are employed in the paid care sector at levels that are highly disproportionate to their representation in other parts of the labour force. While this finding is not surprising, it is striking in its consistency and its magnitude, and creating a paid care sector that provides a living wage, safe and healthy working conditions and opportunities for upward mobility should be at the top of an agenda to promote gender equity. The findings related to migration are a little surprising, given the scholarly focus on migrant care workers in recent decades. Immigrant workers are not over-represented in the paid care sector as a whole but rather are represented at levels that are fairly consistent with their representation in the overall labour force. And while immigrant workers are certainly over-represented in particular occupations,

in some cases they are most concentrated among professional care workers rather than low-wage workers. Future comparative research should explore patterns of immigrant representation within the care sector to identify some of the causal factors behind the wide range of variation we see here. Additionally, longitudinal historical analysis could help unravel whether high levels of immigration precede or are a result of the development of a larger paid care sector.

Third, the analysis of the occupational composition of the care sector shows in a general way where there is access to certain kinds of care expertise. Another important area for future research will be to directly explore the relationship between the specific makeup of the paid care labour force and care outcomes to identify the most promising ways to organize paid care from the perspective of providing the best care to the population. The other dimension that is illuminated by the occupational breakdown is the impact on care workers, and our findings here highlight some important directions for future research from this perspective. For example, the differing levels of professionalization raise the question of whether it is possible to combat the care wage penalty in ways that do not exacerbate polarization within the sector. The growing body of scholarship about the care wage penalty—and in particular the role of occupational closure in mitigating it—needs to be combined with a sector-wide analysis that traces the impacts of occupational closure on workers across paid care. Additionally, qualitative or longitudinal analysis of occupational mobility will also reveal the extent to which workers have opportunities to move up

through the occupational structure, which also mitigates concerns about polarization.

Fourth, this analysis makes visible the high rates of domestic work in the labour force. In Latin America and the Caribbean and parts of sub-Saharan Africa, the rates are very high and represent historical continuities. However, the analysis shows that there are also meaningful numbers of domestic workers across much of the developed world. This is important for two reasons: these workers are uniquely vulnerable to exploitation, and so care scholars and policymakers need to pay particular attention to how these workers' rights are protected; and domestic work represents a highly individualized and family-centred approach to meeting care needs in contrast to a public responsibility for education and health care.

Finally, our findings highlight the inadequacy of the paid care sector in many parts of the world at this historical moment and the urgency of investing in building care infrastructure, both physical and human, around the globe. Understanding the patterns in countries with more highly developed sectors will help us know what kind of investment to support, that is, what kind of investment will result in a strong paid care sector that provides quality care for

a population and quality jobs for paid care workers. While it can largely be explained by economic development levels, the finding that the size of the care sector is not responsive to the magnitude of the care needs of children—and in fact is inversely related—is an important indicator that multinational organizations need to step up their commitment to building a strong paid care sector as part of any development strategies.

The finding of no relationship between the size of the care sector and the level of female employment is somewhat surprising. One would expect that these would be related positively through at least two mechanisms. First, if women are entering the labour force in large numbers, the assumption is that the supply of unpaid care would be decreased, thereby increasing the demand for paid care work. And second, having a more developed paid care sector provides employment options for women as well as choices for those women who want to work in the paid labour force. And yet, the data do not show a relationship. High rates of female employment may explain the disconnect in poor countries, but there is clearly more to explore here about the relationship between paid and unpaid care and to what extent one is substitutable for the other.

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# APPENDIX: DATA SOURCES

Country	Year	Data source	Country	Year	Data source
Armenia	2011	IPUMS	Lithuania	2013	LIS
Austria	2013	LIS	Luxembourg	2013	LIS
Botswana	2011	IPUMS	Malawi	2008	IPUMS
Brazil	2013	LIS	Mali	2009	IPUMS
Colombia	2013	LIS	Mexico	2015	IPUMS
Costa Rica	2011	IPUMS	Mozambique	2007	IPUMS
Czech Republic	2013	LIS	Nigeria	2009	IPUMS
Denmark	2013	LIS	Panama	2013	LIS
Dominican Republic	2010	IPUMS	Paraguay	2013	LIS
Ecuador	2010	IPUMS	Peru	2013	LIS
Egypt	2012	LIS	Poland	2013	LIS
El Salvador	2007	IPUMS	Portugal	2011	IPUMS
Finland	2013	LIS	Romania	2011	IPUMS
France	2011	IPUMS	Slovakia	2013	LIS
Georgia	2013	LIS	South Africa	2007	IPUMS
Germany	2013	LIS	Spain	2011	IPUMS
Ghana	2010	IPUMS	State of Palestine	2007	IPUMS
Greece	2013	LIS	United Kingdom	2013	LIS
Guatemala	2014	LIS	United Republic of Tanzania	2012	IPUMS
Hungary	2011	IPUMS	United States	2013	LIS
Iran (Islamic Republic of)	2011	IPUMS	Uruguay	2016	LIS
Ireland	2011	IPUMS	Viet Nam	2009	IPUMS
Israel	2012	LIS	Zambia	2010	IPUMS
Kyrgyz Republic	2009	IPUMS			

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