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Stimulating OECD economies post-Covid by investing in care

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Abstract

As the COVID-19 pandemic has laid bare both the weakness of many countries' care systems and their vital importance to social reproduction, this paper argues for a care-led recovery with public investment in high-quality care services and better conditions for care workers. Using input-output analysis, across selected EU countries and the US, the superior employment outcomes of investment in care over investment in construction are shown not to depend on care's lower pay and shorter hours. Further, the fiscal returns from investing in care are higher, allowing greater investment for the same net cost. In particular, equalizing care spending and wage levels to those of Sweden, the most generous country in the study, would double employment in care, raise employment rates by 4 and 6 percentage points and reduce gender employment gaps by 4 and 6 percentage points, respectively, across the EU overall and in the US.

Introduction

The failure of many high-income countries to protect vulnerable care home residents from infection and death has been one of the most shocking outcomes of the coronavirus pandemic (Comas-Herrera et al., 2020). Cross infections between care workers' clients are likely to have led to many deaths among those receiving home care too (Dawson et al., 2020). In England and Wales, both residential and domiciliary care workers have experienced significantly higher deaths rate from COVID-19 than other occupations; and women, particularly badly paid women, are far more likely to work in highly exposed occupations (ONS, 2020a, b).

Although children's health seems to be somewhat resistant to the virus, the large-scale closure of childcare facilities and schools has caused difficulties for working parents, especially mothers (Cattan et al., 2020; Jessen & Waights, 2020; UNESCO, 2020). Whether informal care by vulnerable grandparents will ever be possible again and the different staff ratios that childcare facilities may have to adopt to carry out social distancing has added to the uncertainty (Scarpetta et al, 2020).

After a decade of austerity, the care systems of many countries were already in crisis before the pandemic. The coronavirus pandemic has tragically illustrated the insight of feminist economics that economies depend on their paid and unpaid care infrastructure and they neglect them at their peril. This suggests investing in that infrastructure to repair those child and adult care systems could be a route to recovery.

Many workers lost their jobs during the initial lockdowns imposed in many countries and many more are expected to become unemployed before the pandemic is over. While in previous recessions men tended to lose their jobs faster than women, jobs in which women predominate have been the first to go as emerging data tend to show (Alon et al., 2020; Fana et al., 2020). Further government spending, beyond that to cope with the immediate effects of the pandemic, will be needed over many years to stimulate economies, tackle unemployment and restore previous reductions in the gender employment gap.

While many proposals have been made, including a range of Green New Deals that mention investing in health and social care, none proposes a specifically care-led economic stimulus program, based on investment in care. Such a program would generate jobs not only in care, but also in the

industries supplying care and stimulate the economy by the spending of newly employed workers. To create a higher quality care infrastructure and to make such an expansion of the industry possible, a revaluing of the profession, through better pay, training and an improved career structure would be required to encourage people to become care workers who may not have considered care as a potential profession in the past. This would go some way to rebalancing the economy towards care.

This paper investigates the employment generating aspects of a care-led recovery program by extending the argument of an earlier cross-national study (De Henau et al., 2016) that showed that spending on care generates far more jobs than equivalent spending on construction, the usual focus of economic stimulus programs, even green ones. However, neither that report nor other similar empirical analyses (Antonopoulos and Kim, 2011; Kim, Ilkkaraçan, and Kaya, 2019) have modelled improving the conditions under which care workers were employed, as would be vital if the investment were to result in a system delivering better quality care.

Allowing for improved working conditions, we show for selected OECD countries that the greater additional employment generated by investment in the care industry cannot be explained by its lower wages and working hours. Although removing differences in hours and wages reduces the difference in employment generated, that investment in care generates greater employment than investment in construction remains a robust result.

We also allow for how much of the costs of government investment in either sector is recouped through increased tax revenue from newly employed workers; more will be recouped the greater the employment created, reducing the net cost of the investment. We therefore also compare the level of employment creation by investment in the two industries for the same net cost.

Finally, for the main results of this paper, we look at the level of gross and net investment that would be required in each country to have a well-functioning care system in which workers are appropriately paid and examine the resulting employment creation for both women and men.

Investing in Care

Our comparative analysis examines eight OECD countries, Denmark, Sweden, Germany, France, Italy, Spain, the UK, and the USA, (plus the EU-28 as a whole), chosen, among countries that have experienced a severe impact of Covid-19, to cover a variety of welfare systems and differences in the level, quality and type of care provisioning. While governments in Sweden and Denmark spend a high proportion of GDP on care services, countries like the UK and the US spend less and favor market and quasi-market solutions; Italy and Spain have traditionally relied more on family care and France and Germany on a more complex mix of social assistance and social insurance provision (OECD, 2011; De Henau et al., 2016).

Table 1 shows how public spending on care services and the consequent relative importance of care sector employment varies across these economies. Here by care we mean both child daycare and adult long-term care, provided both in residential settings and at home.[1] The headcount (HC) percentage employed in the care sector translates into different percentages of full-time equivalent (FTE) employees, because the countries vary in the average hours worked in their care sectors. Wage costs per FTE in care relative to each country's average earnings also vary, but in all countries remain below those of construction. All countries have a preponderance of women employees in the care sector and a significant but varying gender employment gap.

An economic stimulus investment in an industry will generate three types of employment effects. *Direct* employment effects capture the employment immediately created in that industry. Investment in any industry will also generate additional employment as demand is increased for the products of its suppliers. Such demand will ripple down the supply chain, generating *indirect* employment effects. There are also *induced* employment effects as a result of the additional household income generated by the additional employment. Some of this additional household income will be spent and become a further source of increased demand within the economy, generating jobs in the sectors in which households spend their income.

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[1] The care sector is represented by the two industries of the NACE-2digit classification 87 (Residential care) and 88 (Social work without accommodation) for EU countries, and for the US, the two industries of its NAICS classification 623 (Nursing and residential care) and 624 (Social assistance)

Table 1 Public spending, employment, relative wages and gender in care services and the gender employment gap (2015*)

	Public spending on care services (% GDP)	Care as % of total HC employees	Care as % of total FTE employees	Wage cost in care per FTE (relative to national average)	Wage cost in care per FTE (relative to construction)	% women in care (FTE)	Overall gender FTE employment gap (ppt)
Sweden	4.81%	10.4%	9.9%	86%	87%	79%	11.4
Denmark	3.75%	11.4%	11.2%	81%	88%	83%	13.1
France	3.20%	8.0%	7.5%	69%	70%	86%	12.6
UK	2.10%	5.7%	5.4%	51%	42%	76%	19.1
Germany	1.86%	6.0%	5.7%	62%	67%	74%	20.7
Italy	1.25%	2.5%	2.5%	56%	70%	82%	23.4
Spain	1.24%	3.0%	3.0%	72%	72%	86%	14.4
US†	0.93%	4.6%	4.6%	50%	44%	81%	8.7
EU-28	2.13%	5.1%	4.7%	81%	91%	81%	17.0

* 2013 for US

† HC only for US, FTE data not available

Source: Authors' calculations based on OECD (2020), Eurostat (2020) and Bureau of Economic Analysis (2015). Wage cost is measured by the total compensation of employees (= gross earnings + employers' social security contributions) per FTE employee.

There are a number of structural factors that might explain why total employment creation from investing the same amount in the two industries might differ:

i) Labor and import intensity: the industries and their suppliers might differ in their labor intensity and/or the extent to which they use imported inputs;

ii) Working hours: the industries and their suppliers may differ in their typical hours of employment, so that the same number of working hours results in different number of jobs being created;

iii) Wages: the industries and their suppliers may pay different wages.

Which factor lies behind any differences in employment effects matters. If greater employment effects are found because wages are lower in an industry that already has recruitment problems, then expanding it may not be possible without raising wages. If greater headcount employment effects are found simply because average hours in one industry are shorter than another, a better picture would be gained by measuring all employment effects in full-time equivalents (FTEs). It is therefore important to know whether the greater employment effects of investing in a particular industry would remain if wages were raised in that industry and employment in both industries were measured in FTEs.

Our first estimations compare the total and gendered headcount employment effects of investing in the two industries, in which the contributions of factors (i) – (iii) are not distinguished. Subsequent estimations show how far equalizing working hours and wage costs across the two industries (so that factors (ii) and (iii) would not apply) would change these comparisons. This leaves structural differences in labor and import intensity as the explanation of any remaining differences in employment effects. If these are still substantial, then the employment stimulus case for investing in care remains the stronger one, even after improving working conditions in care, a necessary condition for recruiting enough workers and improving care systems.

Having shown that investment in care remains the better stimulus, we then go on to consider the effects of matching the public spending and relative wages of the country that spends relatively the most on care, Sweden. (Like all other countries in this study, Sweden pays its care workers less than its average wage, but at 86% a higher proportion of it than elsewhere).

Methods and data

This paper uses standard input-output multiplier methods to investigate the effect of increasing the demand and thus output of a single industry. Input-output tables show (in price terms) how much each industry's production process uses the output of every industry (including its own) as inputs. To investigate the total employment effects of increasing the demand in a single industry, we assume that in volume terms the input and employment requirements per unit of each industry's output remain unchanged, as do all prices and wages in all industries (until we purposely decide to change them for care).

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The direct employment effect of an increase in the output of an industry is calculated from that industry's labor input per unit of its output. I-O tables can then be used to calculate total input requirements for each industry down the supply chain and thus the industry's *Type I employment multiplier* (directly and indirectly generated employment per additional worker directly employed). The vector of directly and indirectly generated employment effects is the product of the matrix of total input requirements, the Leontief inverse of the direct requirement matrix, and the vector of the total number of jobs by industry per unit of output. The employment multiplier for an industry is calculated by multiplying the amount of investment needed to create one directly generated job in that industry by this vector.[2]

We use a similar process to calculate the *Type II employment multiplier* that also includes the induced employment effect of the increased earnings of the newly employed. To do this, households are effectively treated as another industry, whose inputs are given by the spending of households on the outputs of every other industry. Augmented I-O tables can then be used to calculate total employment generated including induced employment. Doing so assumes additionally that the proportions in which households spend their total resources (both earned and unearned income) are unchanged (Scottish Government, 2015).

That increasing demand for an industry does not change its production methods and the wages that it pays, is a strong but usual assumption in such analysis. However, the additional assumption required for calculating induced employment effects, that a policy that increases demand in one industry does not change the pattern of household spending, needs justification. For construction, it is not unreasonable; public construction projects are typically different from those on which households spend their income.[3] However, in the absence of public provision, some households spend money buying care that they may not need to once provision is publicly subsidized. So, to justify assuming unchanged household spending patterns, we should see the investment being modelled as providing publicly funded care services, but with a financial contribution required from households equal to the household sector's current spending on care, and that this holds even if the price of care rises.

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[2] See Scottish Government (2015) for more details on the standard method of calculating multipliers using input-output tables.

[3] Spending might change as a result of the construction, but typically not while the investment in construction is being made, which is what matters here.

Because the income of self-employed is indistinguishable from profits in input-output tables, induced effects can only be measured for employees; therefore, for consistency, this study shows results for employees only. However, as there is relatively more self-employment in construction than care, ignoring any increased self-employment generated is likely to reduce estimated employment effects more for construction than for care.

As Table 1 shows, in all countries care is paid below average wages and below construction wages. Working out the effect of improving wages in care on employment generation requires calculating anew:

(i)   direct employment effects, because higher wages will affect the price of care and hence how much can be purchased by a given sum of money; direct employment will be reduced by a factor that is less than proportional to the rise in wages.

(ii)   employment multipliers; the same inputs will be needed per worker in care, so the Type I multiplier will not change, but the rise in the earnings of care workers will change the Type II multiplier.

Doing this involves more than standard input-output methods, and the procedure for doing so is explained in the Appendix of De Henau and Himmelweit (2020).

We estimate gendered employment effects by assuming that current gender employment ratios by industry do not change as a result of such investments, again a strong assumption, but plausible given that with more refined job-matching methods, Antonopoulos and Kim (2011) and Kim, Ilkkaraçan, and Kaya (2019) found gender employment ratios changed little as industries expanded.

For European countries, data for (augmented) input-output tables (64 industries) are derived from the national accounts and data for employment by industry, gender and working time are taken from official national labor force surveys, both produced and harmonized across EU countries by Eurostat. Data for the US is provided by the US Bureau of Economic Analysis which produces symmetric input-output tables for 70 industries. The reference year is 2015 for European countries and 2013 for the US.

Results

To compare the employment effects of investing the same amount in the care and construction industries, Table 2 shows ratios of: the increase in employment *within* the industry directly targeted (which may include some indirect effects if that industry's output is used as an input); the total increase in employment; and the increases in total employment for men and women. Panel A shows those ratios for the numbers of jobs (headcount). Panel B shows what those ratios would be if wages and working hours were equalized in the two industries, by matching care workers' wages to those of construction workers and translating those jobs into FTEs - for every country except the US where data on FTEs is not available.

Table 2 Ratios of employment effects: investment in care vs investment in construction

| | A) Headcount employees at current wages | | | | B) FTE employees* matching wages in the two industries | | | |
	Within-industry effects (all)	Total effects (all)	Total effects (women)	Total effects (men)	Within-industry effects (all)	Total effects (all)	Total effects (women)	Total effects (men)
Sweden	3.0	1.9	6.0	0.7	2.4	1.6	5.4	0.6
Denmark	3.5	2.2	6.6	0.8	2.9	1.9	6.5	0.7
France	3.9	2.3	6.6	0.6	2.6	1.7	5.0	0.5
UK	5.1	2.7	6.3	1.1	2.4	1.6	3.9	0.8
Germany	4.0	2.6	6.1	1.0	2.5	1.8	4.9	0.8
Italy	3.7	2.4	7.0	0.8	2.7	1.9	6.1	0.7
Spain	3.1	2.0	5.2	0.7	2.2	1.6	4.5	0.6
US	3.5	2.0	4.0	0.9	2.0	1.4	2.7	0.7
EU-28	3.3	1.8	4.2	0.8	2.6	1.6	4.0	0.7

Source: authors' calculations. *Headcount employees for the US

Across all countries, the within-industry employment effect of investing in care is consistently considerably larger, by a factor of three or more, at current wages and hours than that of investing in construction, as would be expected since care is the more labor-intensive industry. Taking account of

different working hours in the two industries and then matching their wages decreases these ratios but the within-industry employment effects are still at least twice as large.

One standard economic argument given for using construction to stimulate the economy is that it has a high employment multiplier, the ratio of indirectly to directly generated jobs. Consistent with this, Table 2 shows that the ratio of total employment generated does not favor care as much as the ratio of within-industry employment generated. But, summing the direct, indirect and induced employment effects (not shown separately) gives a much greater total employment creation by investment in care, even when hours and wages are matched in the two industries[4]. The greater indirect employment effects of investing in construction do not outweigh the greater within-industry effects. The induced effects are larger for investment in care, especially when wages are increased[5].

In all countries, direct and indirect jobs created are reduced (and so therefore is the quantity of care provided) by paying higher wages, and by counting them in FTEs, but this is partly compensated by the higher wages generating additional induced employment. So, investment in care continues to outperform investment in construction in total employment creation by at least 60% in all European countries and by 40% in the US.

Table 2 also shows that investing in care produces far larger employment increases for women than investing in construction. Because of its larger total employment effects, investment care still produces employment gains for men not far below those for construction: roughly equal (at going wages) in the UK and Germany, 90% in the US, and across the EU-28 overall 80% (and 70% when equating wages).

So the additional employment effects of investing in care over those of construction are not simply the result of poorer wages and different hours worked in the two industries and those that supply them. Even when wages are equalized and FTEs counted, care outperforms construction in job

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[4] Although we had to exclude self-employment from our analysis because of not being able to estimate induced effects, we can surmise that the bias is not large because for direct and indirect employment effects, the ratio care/construction is reduced by between 8% and 30% (measured on headcount employment) and remains well above 1.6 in all countries.

[5] This is because households are treated as a single sector, so any induced effects are simply proportional to the additional earnings generated by direct and indirect employment effects.

creation. Investing in a reformed care sector with good pay and conditions is therefore an excellent candidate to lead the recovery from Covid-19 and redress gender imbalances in employment losses.

Effects on fiscal revenue

Public investment in any country's care infrastructure has long-term benefits, which may through prevention diminish the need for expenditure on care, and through increased tax receipts reduce its net fiscal costs (Elson, 2017). Even in the short-term, for any economy operating at less than full employment, any government stimulus to the economy will partially pay for itself by generating increased revenues. Tax and benefit systems are highly country-specific, so net revenue effects are hard to simulate cross-nationally, but a rough estimate of average wages and thus average tax due for each country can be calculated. For each country, Table 3 shows the *tax wedge*, the income tax and social security contributions paid by an average wage employee and their employer, divided by the total wage cost (gross earnings + employer's social security contributions). This can be used roughly to estimate total income tax and social security contributions from the new jobs created (assuming they are net gains to employment, as they would be expected to be for a stimulus program).

The tax wedge reduces the net cost of investment in any industry. Table 3 shows that the net cost of an investment in care is consistently a smaller proportion of its gross cost than is the case for construction. This is because more of the investment in care goes to pay wages on which the tax wedge applies. These relatively lower net costs mean that between a quarter and a half of any gross spending in care is recouped in revenue from income tax and social security contributions.

This comparative 'fiscal advantage' of care over construction means equalizing *net* spending gives investing in care a further advantage in total employment creation over investing in construction. As Table 3 shows (last column), equalizing net spending in this way raises substantially the ratio of total FTE jobs created.

Table 3 Short-term fiscal effects of investing in care and construction (FTE employees at matched wages)

	Tax wedge at average wages	Net cost as percentage of gross cost		Ratio (Care/Construction) of increase in total FTE employees†, when:	
		construction	care	gross spending is matched	net spending is matched
Sweden	41%	77%	63%	1.6	2.0
Denmark	34%	82%	66%	1.9	2.3
France	46%	71%	52%	1.7	2.3
UK	30%	84%	73%	1.6	1.8
Germany	47%	73%	52%	1.8	2.5
Italy	47%	79%	63%	1.9	2.4
Spain	39%	78%	65%	1.6	1.9
US	30%	73%	62%	1.4	1.7
EU-28	40%	71%	55%	1.6	2.1

Source: authors' calculations and OECD (2020). Tax wedge at average wages is the average of that of childless single and two-earner couples with two children. † Headcount employees for the US.

How much care is needed?

We have not yet considered how large the stimulus investment in such a care-led recovery should be, nor what wages it should actually pay. The aim of the stimulus is not just to generate employment but to help restructure the economy to have a well-functioning care system that rewards its staff fairly. One way to gauge how much of an investment would be needed is to estimate by how much public spending as a percentage of GDP would have to be increased to match that of the highest spending country in our study, Sweden (Table 1).

To ensure that this spending leads to improved conditions and high-quality care, we must also match Swedish care wages as a percentage of average earnings and simulate the employment effects within the care industry and for the whole economy. To do this we need to take account of the employment effects of both the increased wages for existing care workers and the additional investment in care

made at those increased wages. These effects were calculated, with the size of each country's new investment in care set to make its spending on care match Sweden's as a proportion of its GDP, and each country's care wage set to equal Sweden's as a proportion of its average wage after the investment produced its full effects (Table 4).

Table 4 Matching Sweden's spending and wages in care

	Additional gross spending needed (% GDP)	% rise in care wages	% pt rise in overall empl. rate	% pt rise in women's empl. rate	% pt fall in gender empl. gap	% additional care empl. generated (FTEs)	Care as % of total FTEs (after invest.)	Additional net spending (% GDP)
Sweden	0.0%	0%	0.0	0.0	0.0	0.0%	9.9%	0.0%
Denmark	1.1%	6%	1.1	1.6	-1.3	12.1%	12.3%	0.7%
France	1.7%	26%	1.2	1.8	-1.5	21.7%	8.9%	0.9%
UK	2.9%	72%	2.2	2.7	-1.8	42.1%	7.4%	2.0%
Germany	3.1%	39%	3.5	4.7	-3.5	69.8%	9.1%	1.6%
Italy	3.8%	53%	3.2	4.6	-3.7	234.0%	7.7%	2.3%
Spain	3.8%	18%	3.4	5.0	-4.0	167.0%	7.4%	2.4%
US	4.3%	73%	6.4	8.4	-6.2	102.3%	8.5%	2.4%
EU-28	3.0%	6%	3.9	5.2	-4.0	98.1%	8.7%	1.5%

Source: authors' calculations

Table 4 shows that two countries, Denmark and France, need to increase spending by less than 2% points of GDP to match Sweden, while the remainder must raise gross spending by 3% points or more (including the EU-28 as a whole). Among the latter group, matching the spending and wages of Sweden, although costing less than 2.4% of GDP in net terms, would transform their economies, so that all would have 7.4% or more of their workforce employed in care, paid considerably better than currently. This implies a doubling of the care workforce in the US and for the EU as a whole, and more than a threefold increase in Italy. Furthermore, there would be an increase of at least 2% points in the overall employment rate of these economies, while women's employment rate would rise by around 5% points in the European economies of that group and 8% points in the US. The gender employment gap in all these economies would also fall significantly. For Denmark and France, the

additional expenditure needed to match Sweden's on care is lower; as a result so is the gain in employment, both overall and in care, with a smaller effect on women's employment and on the gender employment gap effect in care, while care's share of employment is already similar to Sweden's.

However, within the low-spending group there is considerable variation in the growth of care employment, reflecting differences in their care wage rates in relation to their average wage. Those currently paying particularly low relative wages in care, such as Germany, the UK and the US, would have to spend much of their increased care spending on raising the wages of existing care workers, leaving less to be spent on employing new workers. This is not the case in Italy, simply because its current care workforce, although badly paid, is much smaller.

Conclusion

Economic recovery from Covid-19 will require stimulus through public expenditure. This paper has shown that a greater employment stimulus could be made in any recovery plan by investing in care than in construction, the conventional object of stimulus programs. Even accounting for the shorter hours and lower wages paid in the care industry, investment in it still produces more jobs overall. Investment in care also yields far more employment for women, whose jobs are more likely to be the ones to go, and not substantially less for men. The gender employment gap would fall, whereas investment in construction would increase it, while creating very few jobs for women. Further, the fiscal returns from investing in care are higher, allowing greater investment for the same net cost.

The case for investing public funds in high quality care services does not rely solely on the employment it creates, or even its beneficial effects on gender employment gaps. Post Covid-19 public investment will be required to reform care systems shown to be inadequate and to support those who rely on them, children, adults with disabilities and the frail elderly, and to alleviate the unpaid work of their parents and carers. The paper has shown how much it might cost and how employment might be restructured if countries were to invest in having care systems equal to the best, providing a significant care-led component to any recovery plan in countries that currently invest far less.

But it has also shown that just spending more on care is not enough, that the poor wages care workers are paid in some countries will cost a great deal to fix. Ways will have to be found to improve training, working conditions and career structures to enable care systems to support better quality jobs and deliver higher quality care.

Covid-19 has exposed inadequacies well known to feminists in care systems throughout the world. In many parts of the world, a recognition that care systems have failed to protect the most vulnerable, and a new valuing of care and care-workers, has created a political climate in which arguments for investing in a care-led recovery to create a better care system might well get a hearing.

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