

ECONtribute

Policy Brief

The short-run macro implications of school and childcare closures

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The COVID-19 crisis has hit women's employment particularly hard, partly because the worst-hit sectors have high female employment shares, but also because schools and daycare closures have forced more mothers to leave their jobs. This column looks at Germany, where 26% of the workforce has children aged 14 or younger, and quantifies the macroeconomic importance of working parents. If schools and daycare centres remain closed as the economy slowly reopens, 11% of workers and 8% of all working hours will be lost to the labour market. Policies to restart the economy must accommodate the concerns of these families.

Economies around the world are facing massive job losses – numbers in many countries are approaching those of the Great Depression in the 1930s. The unemployment rate in the US already reached 14.7% in April 2020, and real-time surveys put it as high as 24% during the week of 10–16 May (Bick and Blandin 2020).

Unlike in normal business cycles, where fluctuations in hours are driven largely by men (Doepke and Tertilt 2016), the COVID-19 recession has hit the employment of women particularly hard – partly because sectors with high female-employment shares (such as retail and tourism) have been strongly affected, but also because schools and daycare closures forced some mothers to leave their jobs (Alon et al. 2020, Torrejón et al. 2020).

Germany has been impressively sheltered so far. The unemployment rate in April 2020 stands at only 5.8%, but employers rely massively on short-term work. Among workers employed in January, 13% are either on short-term work or employed but not working, as of 24 May (Blom et al. 2020), while 28% of the workforce is working fully or partly from home.

We explore the labour market consequences of slowly 'reopening' the economy and increasing the demand for physical presence at the workplace, assuming schools and childcare centres remain at least partly closed. We first report what fraction of the workforce live with children in the household and then estimate what fraction of workers have to provide childcare if schools and childcare centres do not reopen to the extent the economy does. We also estimate what fraction of total hours will be lost in the labour market and find that the macroeconomic impact due to parents' inability to work is likely large.

Data

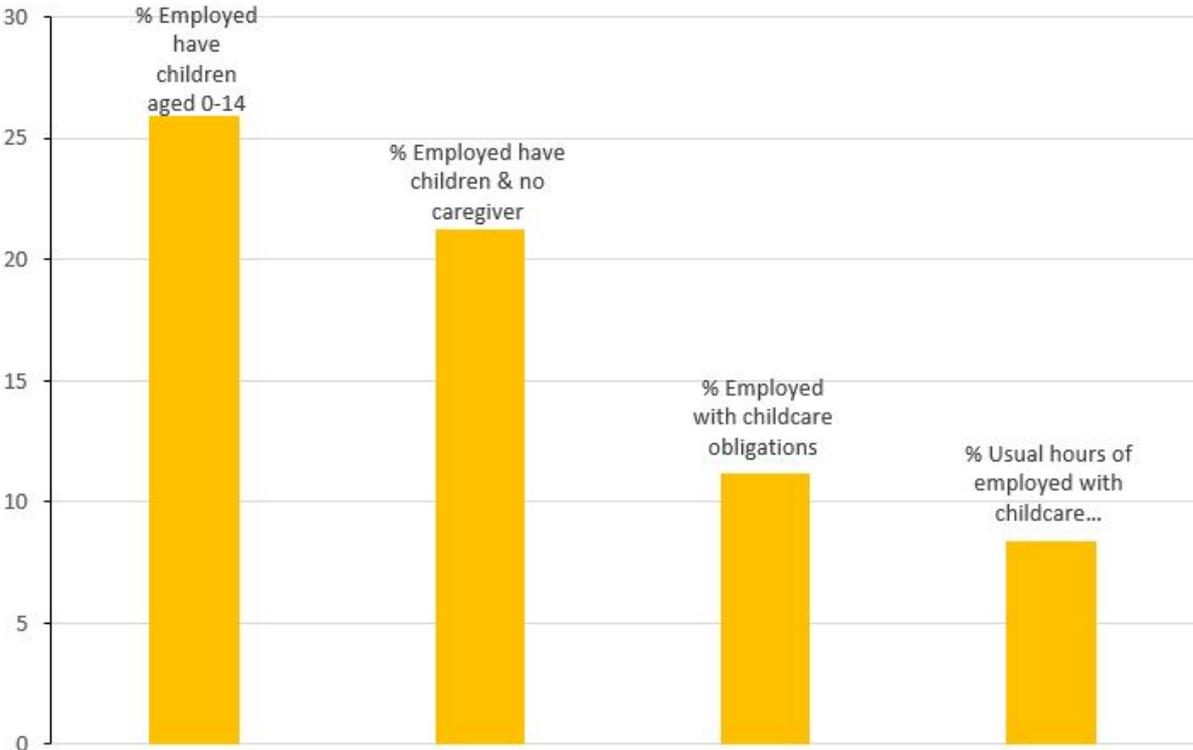
We use data from the 2018 European Labour Force Survey and consider all individuals aged 20 and older for the labour force. Rather than relying on detailed microdata on childcare arrangements, we follow Dingel et al. (2020) and estimate what percent of the workforce is affected by school and childcare closings based on pre-crisis data on employment, hours, and children across households. We assume that children aged 14 or younger cannot be left unsupervised alone at home.

While many behavioural responses can be expected after a large shock, adjusting the presence of children in the household seems near impossible in the short-run. Further, most margins that working parents use in normal times (such as hiring babysitters, sharing childcare duties with neighbours and friends, or relying on grandparents) are currently either explicitly banned by state law or at least highly discouraged. Thus, the most likely margin of adjustment to the closures is that one adult per household will stop working.

Results

We start by looking at the share of employed workers with children aged 14 or younger in their households. Figure 1 shows that a notable proportion of the German workforce have children: one out of four employed workers (25.9%) have children at home. This number of workers is larger than the combined share of all workers in the German manufacturing and construction sector in 2019 (22.8%).¹

Figure 1 Childcare obligations of the employed in Germany



Comparing the first two bars in Figure 1, we see that 4% of households with children also include a non-working adult (such as a non-working mother, an older sibling, or grandparents). Assuming that these non-working adults could take over childcare and home-schooling obligations, we still find that one in five employees (21.2%) are without childcare if school and childcare centres remain closed.

Next, we estimate the share of workers who will be unable to work due to childcare obligations, assuming that one adult will stay home in each household. This share of employed workers therefore corresponds roughly to half of the couple households plus the share of single households.²

In total, we estimate that about 11% of workers would have to stay at home, with 9% of these workers living in couple households and 2% being single parents. To put this number into perspective, we compare it to the unemployment rate of 5.8% in April 2020.³ Even if all unemployed workers in Germany found work immediately, this would just fill half the jobs potentially left vacant due to parents' inability to work.

Couples can, and likely will, optimise when choosing who will stay at home. Within each household with childcare obligations, we identify the household member with the lowest regular hours of work and assume that this person will stay at home. This results in a total 8.4% reduction of work hours, of which 6.8% stem from workers in couple households and 1.6% from single parents. Within couple households, we find that in 82% of households, mothers work fewer hours than fathers.⁴ Thus the majority of hours lost to the labour market will likely be in female-dominated occupations.

Table 1 reports the same numbers separately for children above and below the school-entry age of 6, allowing us to separately assess work hours lost due to school closures and to daycare closures. For example, if schools reopen but daycare centres stay closed, still 9.8% (=6.3%+3.5%) of the employed are affected in that they have no caregiver in the household. If instead daycare centres reopen but schools stay closed, 15% (=11.5%+3.5%) of the employed have a childcare problem.

Table 1 Work hours lost in households with children

	Children under 15	All kids under 6	All kids age 6-14	Kids of both ages
% Employed with children	25.9	8.1	13.3	4.5
% Employed with children & no caregiver	21.2	6.3	11.5	3.5
% Employed with childcare obligations	11.2	3.3	6.1	1.8
% Usual hours of employed with child-care obligations	8.4	2.6	4.6	1.2

To gauge the macroeconomic effects, we compare the 8.4% lost hours to a popular policy instrument to deal with labour underutilisation, namely, short-time work. Short-time work programmes were prevalent during the Global Financial Crisis and are also heavily used now. In 2009, more than 1.1 million workers were on short-time work with an hours' reduction of about one-third of their working time (28.1%). In other words, during the Global Financial Crisis, 3.1% of all employed workers were on short-time work and their hours' reduction accounted for 1% of total hours worked in 2009.⁵

While these were massive programmes, the numbers are dwarfed by parents' likely reduction in work hours during the current crisis. Based on the numbers in Table 1, we estimate that close to four times as many workers and more than eight times the share of hours would be lost due to parents' inability to work due to childcare obligations.

Even if we overestimate the share of affected hours – because some children can stay alone for some time, some parents can work from home while simultaneously taking care of their children, or some other childcare arrangements like sharing between families or involving grandparents are used – it is clear that the impact of the childcare and school closings on hours worked is large. Most of the reduction of hours will likely come from women.

Conclusions and outlook

From a macroeconomic perspective, the labour supply of parents who would have to stay home if economic activity fully resumes but schools and childcare facilities remain closed is massive. We estimate the share of affected employed workers to be close to twice the number of all unemployed workers in Germany, and their share in hours worked is eight times the work reduction due to short-time work during the Global Financial Crisis.

While we acknowledge that workers might find creative solutions to organise childcare to best deal with this situation, the macroeconomic labour-supply effects are still so large that policy seems well advised to take parents' labour-market situation into account when developing plans for restarting the economy.

While this column focuses on the current labour supply of parents, it is important to emphasise the potential long-run distributional and growth consequences that missing school and childcare has for society – consequences of less education, a decrease in intergenerational mobility, and the hurdles they put in the way of women forced to deal with career interruptions (von Gaudecker et al. 2020, Furceri et al. 2020, Burgess and Sievertsen 2020).

We find that in 82% of couples, the mother is working fewer hours and will likely step in to handle additional childcare needs (see also Jessen and Waights 2020). First numbers from real-time surveys in Germany confirm this assumption (Adams-Prassl et al. 2020, Möhring et al. 2020). Bayer and Kuhn (2020) demonstrate that starting at age 30, when children are young and need childcare, the gender-career gap opens up and contributes 50% to the gender pay gap 20 years later. School and childcare closures today will thus likely negatively affect intergenerational mobility and gender equality in the workplace.

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Endnotes

¹ See [employees by sector](#) by the German statistical office.

² The shares do not exactly add up as households can have more than two employed workers.

³ See [labor market report for April 2020](#) of the German employment office.

⁴ In 8% of households, mothers work more hours than fathers; in the remainder, both work the same hours.

⁵ See [working time data](#) by the IAB.