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Maternal Labour Supply and All-Day Primary Schools in Germany

Jan Marcus and Frauke Peter

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Jan Marcus | jmarcus@diw.de | Department Education and Family at DIW Berlin and CIDER Fellow
Frauke Peter | fpeter@diw.de | Department Education and Family at DIW Berlin and CIDER Fellow

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The economic literature provides vast evidence of how public provision of day care for children below school age increases the labour force participation of mothers. The causal effect of all-day schooling in primary school on maternal supply has been examined less since morning-only schooling is less common in developed countries. The present article summarises the findings of (mostly) economic studies on the impact of all-day schooling (*Ganztagsschulen*) on maternal employment, with a special focus on Germany.

In Germany maternal labour supply has been increasing over the last decades ([Knittel et al. \(2014\)](#)). Yet, the labour force participation of mothers differs compared to that of fathers, as mothers are still the main caregiver, thus interrupting their careers and reducing their working hours with childbirth (for an in depth discussion see [Drahs et al. \(2015\)](#)). In general, maternal labour supply is of interest to economic research because greater female labour force participation is not only seen as desirable for gender equality but it is also a means to cope with the decreasing share of labour market aged individuals in aging societies ([Börsch-Supan et al. \(2014\)](#)). In addition to these beneficial effects for society, an increase or continuation of female labour supply can positively affect individuals through extra income, non-pecuniary benefits, and the avoidance of wage cuts due to longer interruptions or to reduction of working hours (see [Boll \(2011\)](#) for a discussion of wage cuts due to career breaks). For these reasons, the public provision of child care in order to encourage maternal labour force participation has gained interest from politicians and researchers.

There is a broad literature in economics examining the effect of day care provision on maternal employment. This literature generally finds that the public provision of day care for children below school age increases the number of mothers who work – although results differ (for overviews of recent studies see, e.g., [Del Boca \(2015\)](#), [Müller et al. \(2013\)](#); [Bauernschuster & Schlotter \(2015\)](#) deal with Germany). However, some studies find no effects of public day care provision on maternal labour force participation. These are mainly studies on Scandinavian countries that already have high maternal labour force participation rates (e.g. [Havnes and Mogstad \(2011\)](#), [Lundin et al. \(2008\)](#)).

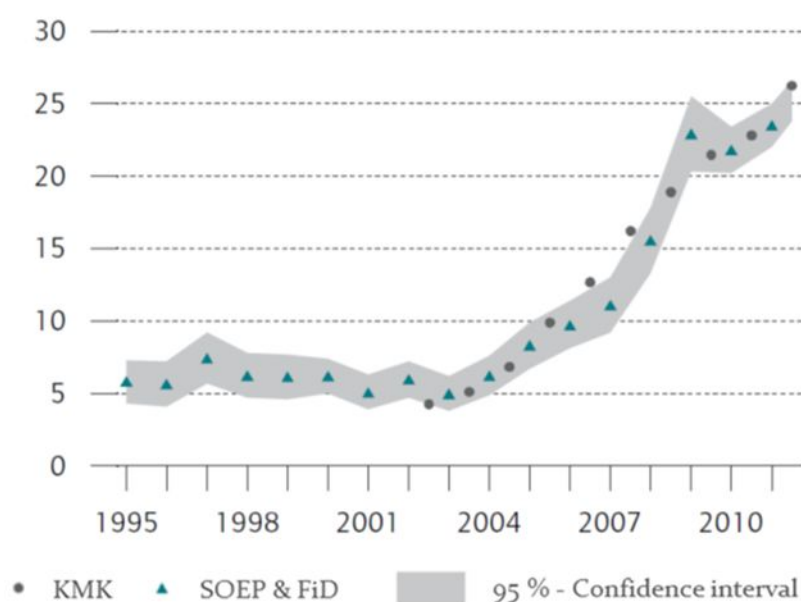
The need for day care does not end when the children enter school. For example mothers who return to work within the first five years after childbirth may want to continue working after their children enter primary school. Although morning-only schooling might allow part-time work, some mothers work more hours and thus are in need of lunch time or after school care for their children. Studies examining the effect of public provision of all-day schooling on maternal labour supply are,

however, scarce, as most countries have a system with solely all-day schooling and, hence, no variation in all-day schooling. Only Germany and a few other European countries (e.g., Austria, Switzerland, Greece, Portugal; see [Allemann-Ghionda \(2009\)](#)) traditionally provide morning-only schooling, but consider implementing all-day schooling.

Need for care not restricted to pre-school aged children

In the last decade, all-day schooling in Germany rapidly expanded – facilitated by the federal public investment program “*Zukunft Bildung und Betreuung*” (IZBB). Between 2003 and 2011 the number of primary school aged children participating in all-day schooling soared from only about 5% to 25% (see Figure 1). In general, the share of primary school aged children in all-day schooling is markedly higher in East Germany (about 50%) than in West Germany (about 20%; see [Marcus et al. \(2013\)](#)). In the German context all-day schooling means at least seven hours per day.

Figure 1: Share of primary school children attending all-day schools in Germany (in %)

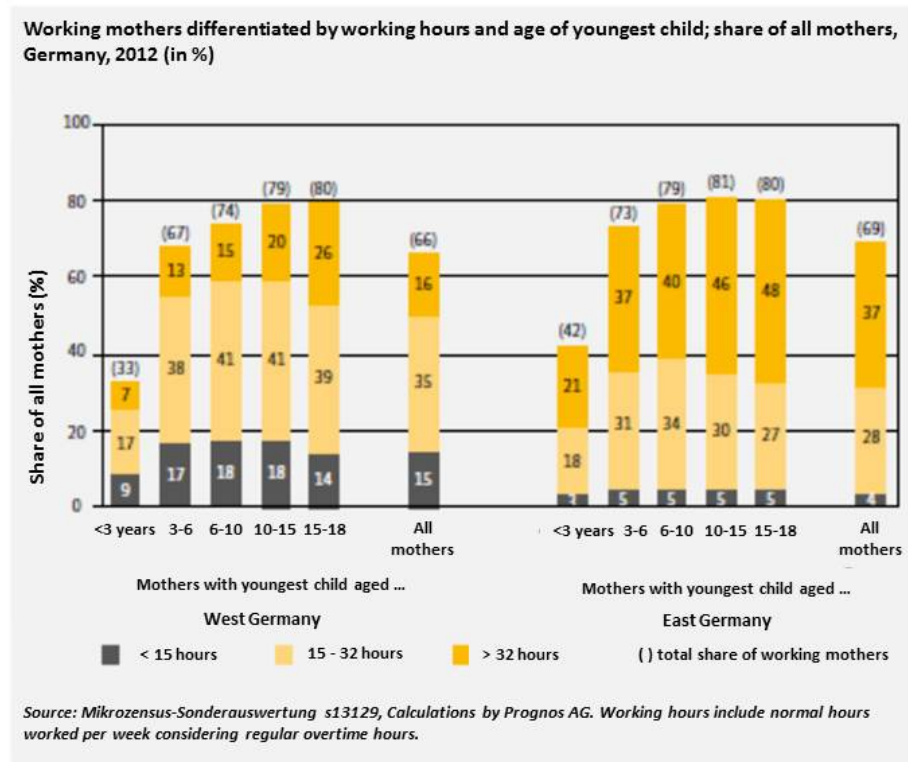


Source: [Marcus et al. \(2013\)](#).

One reason behind expanding all-day schooling was the expectation that it fosters and supports maternal labour force participation. The logic behind the idea why all-day schooling should increase maternal labour force participation is as follows: If the schools take care of the children for more hours during the day, mothers could start/continue to work (extensive margin), or expand their working hours (intensive margin). While there is evidence that the public provision of day care encourages mothers *start* to work (e.g., [Bauernschuster & Schlotter \(2015\)](#), [Bonin et al. \(2013\)](#), [Müller et al. \(2013\)](#)), it might be that mothers with primary school children *extend* their working time due to the public provision of all-day schooling. Thus, the potential effect of expanding all-day schooling might more likely affect the intensive margin. Findings in a study by [Sommerfeld \(2009\)](#) also support this expectation as she shows that German mothers adapt their labour supply to children’s age by altering their working hours.

For Germany [Knittel et al. \(2014\)](#) show that many mothers with school-aged children (6 to 10-year olds) in West German states work between 15 and 32 hours per week (Figure 2), while a large share of mothers with school-aged children in East German states works more than 32 hours per week.

Figure 2: Share of mothers with different working hours differentiated by child age in 2012 (in %)

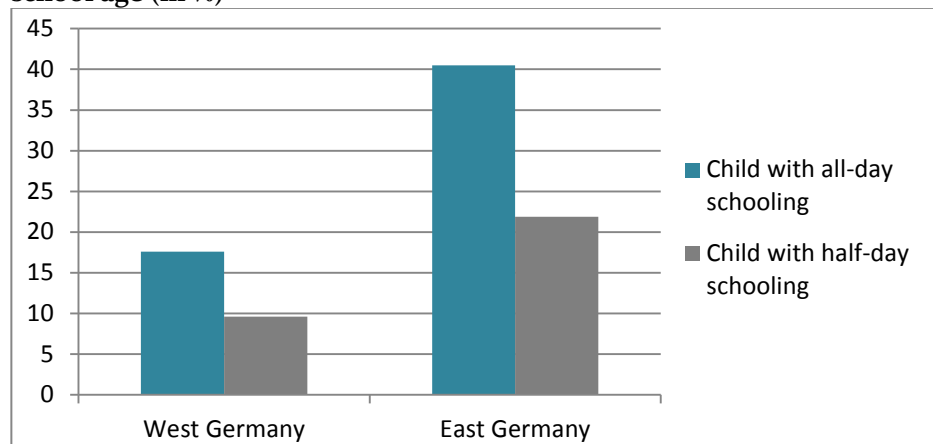


Source: [Knittel et al. \(2014\)](#) – Figure 5-4, p. 42. Note: We translated all notes of the original figure.

Do all-day schools necessarily increase maternal labour supply?

Figure 3 depicts the difference in the share of full-time working mothers in Germany according to whether their primary school aged child participates in all-day schooling or not. The share of working mothers is much higher among children who participate in all-day schooling. This observed correlation is in line with several other German studies (e.g. [Marcus et al. 2013](#), [Steiner & Fischer 2011](#), [Tobsch 2013](#), [Züchner et al. 2008](#)).

Figure 3: Share of full-time working mothers among children in primary school age (in %)



Source: Own calculations based on numbers for 9771 children in West Germany and 2017 children in East Germany in [Marcus et al. \(2013\)](#) for 2004-2011 SOEP/FiD data. The numbers refer to shares of mothers with children in primary school.

However, this correlation does not necessarily imply that the public provision of all-day schools increases maternal labour supply. It might simply be that the public provision of all-day schooling crowds out other sources of day care (e.g., care by grandparents, spouses, siblings, friends, or even paid after-school care). Transferring the reasoning in [Havnes and Mogstad \(2011\)](#) for the public day care provision, this argument might hold if, in particular, the newly provided all-day school slots are still rationed after the expansion and primarily given to mothers who are already working: In this case mothers are just substituting private child care with public child care by all-day schools. Furthermore, the expansion of all-day schooling could have no impact on maternal labour supply because families send their children to all-day schools and yet mothers do not work more than if their child attended a half-day school. Yet, it is expected that the public provision of all-day schools increases maternal labour supply: For instance, in an *ex ante* micro-simulation study, [Beblo et al. \(2005\)](#) predict the effects of an all-day school expansion on maternal employment. According to their simulation, lifting the share of all-day school slots by about 25 percentage points results in an increase of employed mothers by 1 percentage point (extensive margin) and an increase in the working hours of mothers by about 4 percentage points (intensive margin).

Evaluating the effect of all-day primary schools on maternal labour supply

However, in the end, it remains an empirical question of whether all-day school provision positively affects maternal employment. The answer to this question depends on the construction of the counterfactual situation: Would the mother have worked if the child was not in all-day schooling? If they had worked, how much would the mother have worked?

Some studies try to construct this counterfactual situation by comparing similar mothers in a cross-sectional design, where mothers with children in all-day schooling are compared to similar mothers whose children go to school only half-day. For instance, [Tobsch \(2013\)](#) concludes that while for West Germany all-day schooling increases the share of working mothers by 5%-points and the hours worked by mothers by 10 %, the effects for East Germany are much lower. However, cross-sectional studies face the challenge that the compared mothers might be

similar in observed characteristics but might still be very different in unobserved characteristics (e.g., with respect to attitudes on child rearing). Hence, more advanced study designs rely on longitudinal data.

Using longitudinal German data, [Rainer et al. \(2013\)](#) find that mothers extended their weekly working hours by 3.8 hours when their youngest child starts all-day schooling. Hence, the all-day schooling of the youngest child increases maternal labour force participation, particularly at the intensive margin. The effect is particularly strong in single-child-families and for mothers with a partner with rather low earnings. However, studies using longitudinal data are also constrained, in this case assuming that mothers who send their children to all-day schooling are comparable on relevant unobserved variables to mothers who do not. One way to circumvent these assumptions is to exploit “natural experiments”. [Felfe et al. \(2013\)](#) look at such a natural experiment by using the fact that after-school care provision regulations vary between Swiss cantons. They find that after-school care provision increases maternal full-time employment. However, these authors also find evidence that the increase in maternal full-time employment is offset by a decrease in paternal full-time employment. For Germany, we are unaware of studies that exploit such natural experiments.

Conclusion

All-day schooling has expanded rapidly in Germany in the last decade. While mothers of primary school aged children in all-day schooling work more often full-time than mothers of half-day school children, this correlation does not necessarily imply a causal effect of the public provision of all-day schools on maternal employment. However, initial studies suggest that expanding all-day schools may indeed increase the number of hours worked by mothers. It seems that this effect is most likely driven by working mothers who extend their labour supply rather than by the take up of non-working mothers. However, more research using different data sets and, in particular, more robust empirical strategies is needed to better identify the size of the effect of children participating in all-day schooling in primary school on maternal employment.

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DIW Berlin – Deutsches Institut
für Wirtschaftsforschung
Mohrenstraße 58, 10117 Berlin

Tel. +49 (30) 897 89-0
Fax +49 (30) 897 89-200
<http://www.diw.de>

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