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## A forgotten issue: distributional effects of day care subsidies in Germany

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# **DIW** Diskussionspapiere Discussion Papers

Discussion Paper No. 226

## **A Forgotten Issue: Distributional Effects of Day Care Subsidies in Germany**

by  
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**A Forgotten Issue:**  
**Distributional Effects of Day Care Subsidies in Germany**

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## ***Abstract***

In general child care subsidies are widely accepted as a means to create equal chances for mothers in the labour market as well as for children. Although there is a general consensus that the use of child care should be publicly supported, there is no consensus on how this should be done. Moreover, there is little knowledge on the distributional effects of child care subsidies. In order to assess whether public expenditures are targeted efficiently, it is, however, vital to know which social groups profit most from the public expenditures on children's day care and if tax-payers money is spent effectively. In Germany, as in other European countries, child care subsidies are mainly provided 'in-kind'. Local communities and NPOs provide child care slots for children, which are – except for a small fee - free of charge. In this study we estimate the distributional effects of state funded child day care in Germany using microdata of households and data on the expenditure of public funded child care. Major results are that child care subsidies only carry modest redistributional effects. In the first place, it is the middle income range that profits from the public provision of children's day care. This contradicts common public policy recommendations, which state that low income families should be the first target of child care subsidies.

## ***Zusammenfassung***

In westlichen Industrienationen besteht heute im allgemeinen ein Konsens darüber, dass die Betreuung in Kindertageseinrichtungen öffentlich subventioniert werden sollte. Weniger Klarheit besteht jedoch über die verteilungspolitischen Effekte der öffentlichen Förderung von Kinderbetreuung. Eine solche Unkenntnis über die Verteilungseffekte der öffentlichen Förderung von Kinderbetreuung kann jedoch dazu führen, dass Einkommensgruppen öffentliche Mittel in Anspruch nehmen, die dieser Gelder nicht bedürfen. Wie in einigen anderen europäischen Staaten werden auch in Deutschland bestimmte Anbieter von Kindertageseinrichtungen öffentlich gefördert bzw. die Kommunen betreiben selbst Kindertageseinrichtungen. Damit kommen den Eltern, deren Kinder Kindertageseinrichtungen besuchen, indirekt öffentliche Gelder zu, gleichwohl sie über Elternbeiträge einen geringen Teil der Kosten selbst abdecken. In dieser Studie untersuchen wir die distributiven Effekte der Förderung von Kindertageseinrichtungen in Deutschland, indem wir Mikrodaten auf Haushaltsebene mit Informationen über die öffentlichen Ausgaben im Bereich von Kindertageseinrichtungen kombinieren. Ein wichtiges Ergebnis der Analyse ist, dass über die gegenwärtige „Anbieter-Förderung“ nur sehr geringe Umverteilungswirkungen erzielt werden. Vorrangig kommen die Subventionen im Bereich der Kinderbetreuung mittleren Einkommensgruppen zugute, was dem politischen und gesellschaftlichen Ziel, im Kindertagesstättenbereich insbesondere Kinder aus unteren Einkommensgruppen zu fördern, widerspricht.

## **Introduction**

In Germany, public funding for the provision of day care for children dates back to the beginning of this century. The Industrial Revolution made it necessary for working class mothers to seek employment in factories, where they were no longer able to take care of their children during working hours (which was possible on farms and other forms of rural production). Many children were left unattended in harmful conditions. While the first nursery homes for the children of the poor families were funded by private donors, from the beginning of the 1920s onwards, local communities started to become engaged in funding day care for the working class (DAMANN/PRÜSER 1987).

In the 1960s, public funding of day care in West Germany got a new direction. Then, it was regarded as a means to create equality. This new perspective was induced in particular by research work conducted in the USA. Several empirical studies show that a good education from an early age could lead to more equality of opportunities (for an overview, see e.g., CONSORTIUM FOR LONGITUDINAL STUDIES 1983). During this time, the West German government significantly expanded its subsidies to increase the supply of high quality day care for pre-schoolers. In East Germany, the provision of children's day care became even more important. In the former German Democratic Republic (GDR) children's day care was seen as a means to educate children (and to socialise them in line with communist ideals). Moreover, children's day care became a tool to support female employment.

In the reunited Germany, public funding of day care is back on the current political agenda again as a means to create equal chances for women in the labour market (It

should, however, be noted that “equal opportunities for children” is still a high priority on the policy agenda).

Although there is a general consensus that child care should be provided by public means, there is no consensus on how this should be done. In Germany, child care subsidies are used, in the first place, to provide slots in public day care centers or, to a smaller degree, in day care centers run by non-profit providers. However, slots in public funded day care centers are scarce, and thus in general rationed.

Up until now there have been few empirical studies done on the distributional effects of this public provision of day care. The question “who gets the biggest share”, i.e. who profits most from the public provision of day care is rarely investigated. In the German context, there is (to our knowledge) only the study by BINDER (1995) and KAUFMANN et. al. (1982). We consider our study as a contribution towards learning more about the distributional effects of day care subsidies, taking Germany, as an example.

In the first section of this paper, we summarize general findings of some public policy studies on subsidising children’s day care. In section 2, we describe public day care in Germany. Section 3 comprises the empirical analysis, i.e. we describe the data set and the methodology, and we present our empirical findings on the distributional effects in the provision of day care in Germany. We conclude with general public policy recommendations.

## **1 Public Policy of Child Care Subsidies**

In most western countries, there is a consensus that children’s day care should be subsidised (see, e.g., BLAU 2000, DUNCAN/GILES 1996, DUNCAN/GILES/WEGG

1995, PAUL/PERCIVAL 1995 and SCHOFIELD/POLETTE/HARDIN 1996a/b).

Three main reasons are put forward for this. First, children's day care is a means to create equal opportunities for children. Second, day care can support mother's employment. Third, children's day care is considered to be an investment into the human capital of children, which is expected to bring substantial returns to society as a whole. For our analysis, we will neglect the latter aspect, which is difficult to test, and focus on the two first issues, public funded day care as a means to create equal chances for children and to support female employment.

Several empirical studies show that high quality day care can contribute to the development of children (DONOVAN/WATTS 1990, YOSHIKAWA 1995, DOBBELSTEEN/GROOTMAASSEN VAN DEN BRINK 1999 and WALDVOGEL 1999). This in particular applies to children from deprived backgrounds. Providing day care can partly compensate for the disadvantages those children face. On these grounds, GOMBY et al. (1996: 18-19) give the following policy recommendations:

- “Although we believe that all families should be supported, we believe that low-income families should be first concern for public funding because the long-term child development benefits of child care most clearly accrue to children from low-income families.”

Taking for granted the traditional division of labour in the household, the provision of children's day care enables in particular mothers' employment. However, it is in the first place mothers who expect small salaries who will not work due to high child care costs. HOFFERTH and PHILIPPS therefore conclude (1991: 5):

- “Employed mothers, whose salaries are generally modest, need care that is low enough in cost to make their employment profitable.”



On these grounds, one could conclude that low income families should be the first target group of child care subsidies.

Up until now we have not addressed the issue whether children's day care should be privately or publicly provided. One group of studies, mostly the ones in the Anglo-American context (e.g., BLAU 2000 and DUNCAN/GILES 1996), take for granted that child care should be provided privately. In this case, low income families should receive subsidies to purchase high quality day care. Another group of scholars, mostly on the European continent, take it as given that child day care should be provided by the state. One main reason that is quite frequently put forward in this context is the following: Local communities or non-profit providers are believed to be able to provide better quality than private providers (e.g., KAUFMANN et. al. 1982).

Nevertheless, taking the public funded provision of day care as given, one could ask how day care slots are distributed most effectively, and how day care fees should be charged. One could contend that, following the arguments above, on the one hand low income families should be the first to obtain day care slots (if rationed) and on the other hand child care fees should take into account "the ability and willingness of parents to pay". These two arguments are the ones we are going to investigate in our study.

## **2 Children's Day Care in Germany**

### **Three modes of child day care**

Basically, there are three major kinds of public day care in Germany:

- Day care centers for infants age 0-3 (*Krippe*)

- Day care centers for pre-school children age 3-6 (*Kindergarten*)
- Day care centers for (primary) school-age children age 7-10 (*Hort*)

Infant day care centers usually offer care for children between 0-3 years old. Day care centers for pre-schoolers take children between 3 and school age. In Germany, primary school usually starts when children are between 6 and 7 years of age. Day care centers for school-age children usually offer care for children in primary school, which children normally attend until they are 10 or 11 years old. Apart from day care centers for infants, pre-schoolers, and school-age children, there are also day care centers which offer care for children of all age groups (for a brief overview of the German child care system, see SPIESS 1995 or ONDRICH /SPIESS 1998).

Since 1996, by a federal law, the so-called “Kinder- und Jugendhilfegesetz”, the local communities are required to offer day care for all children between 3 and school age for half of the day. In Western Germany, the supply of child care mainly concentrates on fulfilling this requirement, but not more. Hence, the supply of day care for infants or school-age children and the supply of day care for more than just the morning hours is still very restricted. It is obvious that this restricted supply of day care slots poses problems in particular for employed mothers (WAGNER 1989). In Eastern Germany, as an inheritance from the former GDR, day care for children is in general regarded as a means to help mothers to be employed (WAGNER/HANK/TILLMANN 1995). The provision of care has been cut down significantly since unification. Nevertheless, as can be seen from Table 1, there are still significantly more child care slots for infants, pre-schoolers and school-age children in Eastern Germany than in Western Germany.

**Table 1:** Provision of day care slots by 100 children of an age group in % in 1994\*

	Eastern Germany	Western Germany
Krippe (less than 3 years of age)	41	2
Kindergarten (3 to 6 years of age)	117	85
Including meal at lunchtime	97	17
Hort (7 to 10 years of age)	60	5

Note: \* Unfortunately, there is no more recent data than for the year 1994.

Source: DEUTSCHES JUGENDINSTITUT (1998) and STATISTISCHES BUNDESAMT (1996b).

In Eastern Germany, there are day care slots for 41 % of all infants. In Western Germany, only 2 out of 100 infants can get a slot in a day care center. For children at school age, the situation is similar. In Western Germany, there are day care slots for only 5 % of all school age children. In Eastern Germany, there are slots for 60 % of the children. At first glance, the percentage of day care slots for pre-school children does not differ that much for the two parts of Germany. This is mainly due to the federal law that requires a slot in day care for all pre-school children. However, in Western Germany day care for children in pre-school age is – as indicated above - in general for half of the day only. Not more than 17 % of the day care slots offer care throughout the day, including a meal at lunch time. In Eastern Germany, almost all day care slots for pre-school children (97 %) include a meal at lunch time and full-time care (in general care from 8 a.m. until 5 or 6 p.m.).

### **The public funded provision of day care**

In contrast to countries such as Great Britain or the US, there are basically no private day care centers in Germany. Day care centers are either owned by the local community or, this mainly applies to Western Germany, day care centers are run by

non-profit providers, which are heavily subsidised by the local community and the federal state. As it is shown in Table 2, 54 % of the overall provision refers to local communities, while 46 % of the day care slots are provided by non-profit organisations. The more detailed description by age groups demonstrates that the non-profit organisations are mainly providing part-time care in “Kindergartens”, while the local communities provide the majority of the slots in the “Krippe”- and “Hort-sector”. There are also some work place nurseries and nurseries in self-help. In particular the later usually become a member of a charity organisation, which allows them to receive continual public support. For-profit organisations do not receive any public support. Therefore it is not surprising that the percentage of slots they provide is not displayed in the official statistics.

**Table 2:** Provision of day care by provider in % in 1994

	Local community	NPO
Krippe (less than 3 years of age)	73	27
Kindergarten ( 3 to 6 years of age)		
Part-time	33	67
Full-time	65	35
Hort (7 to 11 years of age)	86	14
Total	54	46

Source: DEUTSCHES JUGENDINSTITUT (1998), STATISTISCHES BUNDESAMT (1996b) and own calculations.

### **Day Care Fees**

Although slots in day care are subsidised, parents have to pay an additional fee when they have a child in day care. This fee covers between 10 and 20 % of the operating costs (FLEHMIG/BINDER/WAGNER 1995). In general, the federal state or the local community specify the amount of these fees. There is no reliable statistical

information on the amount of fees paid per child or household. Data from the German Socio-Economic Panel (GSOEP, see next chapter), however, suggest, that in 1996, the monthly fee for a pre-schooler in day care for half the day is on average 48,7 Euro, for all day it is 76,9 Euro. This corresponds to 2 % of the average household income for part-time, and 4 % for full-time care. Nevertheless the variation across Germany is high. E.g. a part-time slot in East Berlin costs on average 25,6 Euro per month, while it costs 79,5 Euro in Northern states of Schleswig-Holstein, Bremen, and Hamburg.

### **3 Distributional Effects of Financing Day Care in Germany**

#### **3.1 Data and Methodology**

In the following, we estimate the distributional effects of the public funded provision of day care in Germany. To be more precise, we analyse how different income groups take advantage of the public provision of day care and how they are charged with day care fees. To do so, we utilise household level microdata and data on the expenditures of public funded child care.

##### **Micro household information**

The household level information comes from a representative microdata set for Germany, the German Socio Economic Panel (GSOEP). The GSOEP is a longitudinal data set providing information on individuals living in private households in Germany (BURKHAUSER/KREYENFELD/WAGNER 1997). As our analysis is cross-sectional we only use one year of data, which is the year 1996. In contrast to other data sets, the GSOEP provides detailed information on the mode of care and the child care fees for each single child in the household. In the GSOEP, parents were asked to report if their child is cared for all day, only during the morning hours, or only in the

afternoon or evening. As children in school age usually do not need full-time care (considering that they are cared for at school during the morning hours), we do not distinguish between full-time and part-time care for school age children. For infants, we do not distinguish either as the majority of slots (91 %) are full-time slots (DEUTSCHES JUGENDINSTITUT 1998). Altogether we therefore distinguish between (1) nursery for infants, (2) part-time “Kindergarten”, (3) full-time “Kindergarten”, and (4) day care for school-age children.

For our analysis of the GSOEP-sample, we omit all children with missing information on the key variables (child care fees and mode of care). We also omit children who are cared for by child minders, as we are unable to distinguish between money spend for child minders and child care fees for institutional care. Altogether, we only omit 27 cases from the data set, which leaves the sample with 3,966 households.

The information on the use of day care in the GSOEP and other household characteristics like income and the day care fee a household pays is linked with information on public day care expenditure given by Statistics Germany (STATISTISCHES BUNDESAMT 1996a).

### **Expenditures on public funded child care**

Statistics Germany gives information on the total annual public expenditure on day care. Moreover, information on the number of day care slots is available. Yet there is no representative information on the public expenditure per slot in day care. Therefore the costs per day care slot have to be estimated on the basis of the sparse information we have at our disposal (which is the number of children cared for and the total number of public day care slots provided for the year 1994). However, estimating

average public costs by simply dividing the total expenditure on day care by the number of slots is rather problematic. First, costs per slot are very likely to vary by the opening hours of the day care center, moreover, they are very likely to vary by the age of the children cared for. Second, non-profit providers of day care are supposed to contribute about 10 % of the operating costs and most of the investment costs out of their own budget. These costs do not appear in the official German statistical data. In particular, taking into account the sources non-profit providers receive money from ("church tax" and tax deductibles), one could regard their expenditure as public as well.

In order to obtain a reasonable estimate for the costs per day care slot, we therefore have to take into account the age of the children cared for, the opening hours and the expenditures by non-profit providers. In the following, we briefly sketch the way we proceeded in our estimation.

### **Estimation of public costs of a day care slot**

We assume for our estimations that the costs of a part time slot for infants is double as expensive as a slot for pre-schoolers or a slot for school age children. A full-time slot for pre-schoolers, we assume is 1.5 times as expensive as a part-time slot in "Kindergarten" (for a similar approach, see BUNDESMINISTERIUM FÜR FAMILIEN, SENIOREN, FRAUEN UND JUGEND 1992). Taking these assumptions, we yield the following expected costs per slot per year for local providers.

**Table 3:** Public expenditure on day care (in billion Euro in 1994) – local providers

Age of the child	Operating costs	Investment costs	Total
Less than 3	0.64	0.06	0.70
3 to 6 (part-time care)	3.44	0.61	4.05
3 to 6 (full-time care)	2.76	0.32	3.08
7 to 10	1.35	0.24	1.59
Total	8.18	1.23	9.42

Source: STATISTISCHES BUNDESAMT (1996a) and own estimations.

Subsidies to non-profit providers cover in general up to 90 % of the operating costs (FLEHMIG/BINDER/WAGNER 1995). In some cases, subsidies can even exceed this amount. In line with other studies, we assume that NPOs contribute 10 % of their operating costs out of their own budget (FLEHMIG/BINDER/WAGNER 1995). Comparing various regulations on subsidising investment costs by federal states, we assume that on average 50 % of the investment costs are paid by NPOs (DEUTSCHES JUGENDINSTITUT 1993). Taking these two assumptions, we yield the following average public costs for non-profit providers (Table 4). By definition the public expenditures on day care in the non-profit sector is with 0.66 billion Euro smaller than the expenditures on day care provided by the communities, which cover 9.42 billion Euro in total.

**Table 4:** Public expenditure on day care (in billion Euro in 1994) – non-profit providers

Age of the child	Operating costs	Investment costs	Total
Less than 3	0.02	0.01	0.03
3 to 6 (part-time care)	0.23	0.20	0.43
3 to 6 (full-time care)	0.10	0.06	0.16
7 to 10	0.02	0.02	0.04
Total	0.37	0.29	0.66

Source: STATISTISCHES BUNDESAMT (1996a) and own estimations.



In the next table (Table 5), we display the average costs per slot per year, as an average of slots provided by local providers and NPO's. As data from Statistics Germany refer to the year 1994, and we are using the year 1996 for our micro-level analysis, we take into account the inflation index. As day care for younger children is much more costly, the average costs per slot for children less than 3 years of age are the highest ones, namely almost 5,000 Euro. Part-time care for school children on average costs less, and therefore the average costs with around 2,500 Euro are much lower. Nevertheless, compared to other studies, e.g., BUNDESMINISTERIUM FÜR FAMILIEN, SENIOREN, FRAUEN UND JUGEND (1992), the average costs per slot for all four day care modes are quite low. This means that we might underestimate the costs per slot. Nevertheless, this is of secondary importance, considering that our focus is on the distribution effects of the public expenditures on day care.

**Table 5:** Estimated costs per slot for 1994 and 1996

Age of the child	No. of children in care 1994 <sup>1)</sup> (in million)	Costs per slot 1994 (Euro)	Costs per slot 1996 (Inflated, Euro)
Less than 3	0.15	4,821	4,974
3 to 6 (part-time care)	0.86	2,769	2,871
3 to 6 (full-time care)	1.61	3,744	3,846
7 to 10	0.63	2,564	2,667
Total	3.25	--	--

Note: (1) Inflation index used for 1994 to 1996 is 3.2 % (STATISTISCHES BUNDESAMT 1997 and 1998) (2) Numbers of children in day care refers to 31<sup>st</sup> of December, 1994.  
Source: <sup>1)</sup> DEUTSCHES JUGENDINSTITUT (1998) and own estimations.

As a next step we use this information on the average costs per slot to analyse how different income groups profit from the public expenditures on day care.

## **Distributional Effects by Household Equivalent Income**

As an indicator for the position of the household in the income distribution, we use the equivalent monthly household income after taxes, calculated on the current OECD scale (FAIK 1997). First, we investigate if there is a difference in the use of day care by household income. Second, we estimate if day care fees are correlated with the household income. Third, we combine both information, and estimate if the household income is correlated with “net subsidies”. By “net subsidies”, we define the amount of public expenditure each household takes advantage of. “Net subsidies” for each individual household in our GSOEP-sample are calculated by subtracting child care fees from the estimated average public expenditure per day care slot.

### **3.2 Results**

In Table 6 we display our main results, which show the use of care, the day care fees as a percentage of household income and the “net subsidies” per year. The results can be interpreted as follows:

- (1) The lowest and the highest income quintiles are the least likely to use day care, therefore the middle income quintiles are the most likely to use public day care: 47.5 % of the children in the 3<sup>rd</sup> quintile use day care.
- (2) With rising household income, the percentage of household income spent on day care fees decreases. Households in the lowest income quintile use the highest share of their income for day care. If they use care they spent 4 % of their income on child care, while the 5<sup>th</sup> income quintile only spent 2 % of their income on day care.

(3) Taking into account the use of care and the day care fees, the middle income range is the one that profits most from the public provision of day care. However, this effect can only be characterised as modest. The “net subsidies” which go to the second quintile is the highest with 1.185 Euro per year. Nevertheless it is remarkable that the subsidies which go to the 1<sup>st</sup> and 4<sup>th</sup> income quintile do not differ significantly.

**Table 6:** Use of care, day care fees as percentage of household income, and net subsidies by income quintile

Income Quintile	Children in day care as a percentage of all children	Day care fees as a percentage of household income	“Net subsidies” per year (in Euro)
1. quintile	34.0	4.1	944
2. quintile	44.1	3.3	1,185
3. quintile	47.5	3.3	1,077
4. quintile	42.4	3.0	1,010
5. quintile	33.6	2.3	744

Source: STATISTISCHES BUNDESAMT (1996a), GERMAN SOCIO-ECONOMIC PANEL 1996 and own estimations.

## 4 Conclusion

The German federal law, the so-called “Kinder- und Jugendhilfegesetz”, requires that the amount of day care fees charged should take into account the household income. Given the results of this study, there is some doubt whether this is put into political practice. Low income families spent the highest percentage of their income on child care, although day care fees increase with income. Against common policy recommendation, child care subsidies in Germany can hardly be linked to the

household income of the parents. If any, families with children in the middle income range are the ones that profit most from the public funded supply of day care. This contradicts common public policy research that states that low income families should be the first concern when subsidising day care.

Moreover one could assume that similar results would be obtained for other European countries, which have a similar system of (mostly) state-provided day care. However, we are unable to verify this hypothesis. To our knowledge, there have been no similar empirical studies for other European countries. We assume that, similar to the German situation, the data available for studying the distributional effects of the public provision of day care is rather weak. In order to perform such analysis in cross-national comparison, joint effort is required to improve the respective statistical infrastructure in Europe.

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