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Arbeitsberichte aus dem Projekt

LEBENSVERLAUFE UND HISTORISCHER WANDEL  
IN DER EHEMALIGEN DDR

**Life Course Convergence and  
Gender Inequality in the  
German Democratic Republic**

Annemette Sørensen and Heike Trappe

Arbeitsbericht 6/1994



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DAS FORSCHUNGSPROJEKT  
"LEBENSVERLÄUFE UND HISTORISCHER WANDEL IN DER EHEMALIGEN DDR"

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**Inhaltliche Schwerpunkte:**

- die (vergleichende) Sozialstrukturanalyse individueller Lebensverläufe in der DDR und in der BRD
- die Analyse individueller Handlungsstrategien in einem autoritär organisierten Staat und der nicht-beabsichtigten Folgen individuellen und staatlichen Handelns
- die Analyse der gesellschaftlichen Transformation in Ostdeutschland und ihrer Auswirkungen auf individuelle Lebensverläufe

**Datenbasis**

**Grundgesamtheit:**

Die deutsche Wohnbevölkerung der Geburtsjahrgänge 1929-31, 1939-41, 1951-53 und 1959-61 in den Neuen Bundesländern im Oktober 1990

**Stichprobe:**

Personenstichprobe aus dem infas-Master-Sample, das im Oktober 1990 aus dem zentralen Einwohnermelderegister der ehemaligen DDR gezogen wurde

**Erhebungszeiträume:**

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**Erhebungsmethode:**

Persönliche (mündliche) Interviews auf der Basis eines standardisierten Lebensverlaufsfragebogens; Aufzeichnungen der Interviews auf Tonband  
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**Realisierte Fälle:**

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## **Introduction**

It is well documented that women and men in East Germany, the German Democratic Republic (GDR), had achieved virtual equality in terms of years of schooling, training and labor force participation (Winkler 1990; Brinkmann & Engelbrech 1991; Lane 1983; Lötsch 1985; Meier 1989). By the time the GDR dissolved, employment rates were exceedingly high for both men and women, and for the younger cohorts sex differences in educational attainment were minimal. There was in other words an almost complete convergence in the life course patterns of women and men. This convergence did not, however, translate into gender equality in the labor market. Women in the GDR continued to be disadvantaged with respect to pay and access to powerful positions. In this paper we examine some of the reasons for the continuing disadvantage of women in the GDR. We analyze life histories of four birth cohorts of men and women born between 1929 and 1961 and living in East Germany in 1990. The life histories span the complete history of the GDR, and they thus present us with a unique opportunity to examine how the state socialist system and the planned economy affected the life course of the women and men who remained in the country, and why equality in schooling and labor force participation were not translated into equality in employment rewards.

## **Gender Equality in the GDR**

The major causes of the convergence in women's and men's roles in the GDR were educational expansion and the extension of educational opportunities to women, as has also been the case in capitalist societies (Buchman 1989). The educational system underwent radical changes between 1950 and 1965. Coeducation of boys and girls was instituted early on, in 1950 compulsory education was extended to the 8th grade, and by 1965 to the 10th grade. Vocational training was regulated by the state and both boys and girls were not only guaranteed some kind of vocational training, they were also obligated to take one. This no doubt increased the speed with which women caught up with men in terms of schooling and occupational training.

A number of other factors propelled change in women's roles and the consequent strong convergence in men and women's life course patterns. Important among these factors was the demand for labor to rebuild a society destroyed by war and saddled with war debts to the Soviet Union, as well as the need to replace the dwindling labor force lost to extensive migration to West Germany. The strong need for women's labor meant not only that women's educational opportunities were vastly improved, but also that in the early years women were recruited into

industries that were traditionally male dominated. Public policies followed, developed with the intention of enabling as many women as possible to work full-time throughout the life course.

In addition to the real need for qualified women workers and the economic, the official ideology was that men and women were equal in the socialist society,<sup>1</sup> and there was a strong belief, as in the social democratic movements in the West (Myrdal 1946; Friedan 1963), that employment was the key to the eradication of inequality between women and men (Maleck-Lewy 1990; Penrose 1990). It followed that an emphasis on education and training as preparation for employment would be a necessary way to create the conditions that were thought to produce equality between the sexes. Another part of the ideology (Arendt 1982; Kuhrig 1976) was a strong expectation of women to be employed, even if they had children and families to care for, thus the development of public policies oriented towards facilitating the combination of family and work for women.

Hence, the demand for women's labor and the political goal of equality between the sexes created the foundation for the emphasis placed on education and training of women and for the pressure on women to be in the labor force throughout most of their adult lives; the results were the virtual disappearance of gender differences in schooling and labor force participation rates documented in other studies (Brinkmann & Engelbrech 1991; Schoer & Grünheid 1992; Winkler 1990).

In market economies, the level of education and training is seen as an important determinant of wages and occupational attainment. Education and training may increase productivity (Mincer 1974), or at least be good signals about the productivity of a given worker (Spence 1974; Thurow 1975), and for this reason higher wages are paid to well-educated workers. Similarly, prior labor force experience may be seen as a direct measure of productivity or as a signal to employers about a worker's future attachment to the labor market. A large body of research has shown that improvements in women's educational qualifications and increases in their labor force experience have contributed to improvement in the wages paid to women and to a closing of the gender gap in wages (e.g. Goldin 1990; O'Neill 1985). However, it is equally well established that part of the gender gap in wages must be attributed to discrimination either in the labor market or outside it (e.g. Cain 1985). Research on occupational attainment in the

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<sup>1</sup> The principle of equal pay for equal work (Recht auf gleichen Lohn für gleiche Arbeit) was made part of the first constitution for the GDR in 1949.

form of socio-economic status or prestige has reached similar conclusions: gender differences in occupational achievement cannot be fully accounted for by differences in educational qualifications (e.g. Bielby and Baron 1986; Sewell, Hauser and Wolf 1980).

In centrally controlled economies, such as in the GDR, it was also to be expected that an equalization of women's and men's level of qualification and labor force experience would reduce the gender gap in wages and occupational careers: jobs requiring more qualifications carried higher wages and increases in salary, as well as promotions, were tied to tenure in the firm and labor market (Röblier, Schmidt and Seidl 1986; Szydlik 1992; Vortman 1985). Furthermore, it was in principle in the power of the government to remove discriminatory barriers, for example by setting wages, (Manz 1992; Roloff and Assenmacher 1991:37), so that political goals such as equality between the sexes could be reached.

This combination of a centrally controlled economy with the equalization of educational qualifications and labor force experience could lead to the expectation that gender equality in wages and occupational careers might have been realized in a country such as the GDR. There is, however, as already noted, considerable evidence that this is not what happened (Nickel 1992). Women in East Germany continued to earn less than men (Roloff 1991), and the better jobs and careers in the East German system were difficult for women to get access to (Berthoin-Antal & Krebsbach-Gnath 1991, Weigandt 1989). Among the most often mentioned reasons for women's continuing disadvantage in the GDR are the maintenance of a sexual division of labor where mainly women were responsible for the care of children and family (Nickel 1992), and the segregation of women into low-paying industries (Roloff 1991).

The traditional division of labor between the sexes was strongly supported by the family policies introduced in order to achieve the very high labor force participation of women. These policies in various ways helped women combine family responsibilities with many hours of gainful employment, and they were directed exclusively towards women. In addition to providing inexpensive or free child care, their central characteristic was that in various ways they made it possible for women (but not men) to take paid leaves after childbirth and during children's sickness and to reduce working hours while the children were small. The opportunity for working part time or for leaving the labor force in connection with childbirth was only open

to women.<sup>2</sup> This in turn meant that it continued to be women who adjusted their employment situation during the child bearing phase, and this is thought to have had serious consequences for women's increase in earnings and their access to the better jobs and careers (Nickel 1993).

The other factor that has been seen as a source of the gender gap in pay is the sex segregation of the labor force, in particular the high concentration of women in low paying industries (Nickel 1992; Roloff 1991; Winkler 1990). Throughout the history of the GDR, women were more likely to work in light industries and the service industries, while men were concentrated in manufacturing industries, which were deemed particularly important for the economic development of the GDR and therefore commanded higher pay.

In sum, the factors that would lead us to expect a reduction of gender inequality in employment rewards during the history of the GDR were two, namely the improvement in women's educational qualifications compared to men's and their very high labor force participation rates throughout the life course. Forces that would impede changes towards gender equality were women's continuing responsibility for children and family, and the segregation of women and men in the labor market. In the analyses presented below, we examine the relative importance of these two sets of factors for the gender gap in earnings, and for women's access to top level positions in the occupational hierarchy of the GDR. Specifically we test two hypotheses; the first of these compares the experiences of the four birth cohorts that we have data for, while the second examines change over the life course within birth cohorts.

Our first hypothesis is that there was a decrease over historical time in the gender gap in earnings at the time of entry into the labor force and that women's chances of gaining access to

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<sup>2</sup> Family policies aimed at helping women be both workers, mothers and housewives began to appear in the early 1960's when it became apparent that women's family responsibilities represented a serious obstacle to women's full participation in the labor force. Later it became clear that women's employment played an important role in the decrease in fertility which began in the late 1960's. The public child care system increased its capacity gradually from the beginning of the 1950's. Families with many children, single mothers, and mothers enrolled in school received special support, both in terms of children's allowances, paid leaves during children's sickness, and preferential treatment in the allotment of child care. Young couples received financial support when they married and had their first child, and full time employed mothers had the possibility of working somewhat reduced hours (40 instead of 43.75). Paid maternity leave was instituted in 1976 after the birth of the second child (1 year), and since 1984 also after the third child (18 months). First time mothers did not qualify for the paid one year maternity leave until 1986. Almost none of these family policies remained in effect after the unification of the two Germanies.



top level positions increased in comparison with men's. We expect that these changes can be attributed largely to the upgrading of women's qualifications. We expect that the remaining differences between women's and men's earnings and access to top level positions in part can be attributed to women's family responsibilities and to their segregation into low paying industries.

Our second hypothesis is that there was an increase in the gender gap in earnings over the life course, and that this increase was attributable to women's family responsibilities and to industry segregation.

We now turn to an examination of these hypotheses. We proceed as follows. We begin with a description of the East German Life History Study and a discussion of the measurement of the variables used in the multi-variate analyses. This is followed by a description of the convergence in women's and men's life course patterns, and of the continuing differences between the sexes in family responsibilities and in the types of industries women and men work in. The analysis then moves on to an examination of gender differences in pay in the first job. In the last part of the analysis, we examine the determinants of earnings in the job held at the end of 1989, and of the probability of ever gaining access to top-level positions.

## **Data**

We employ data from the East German Life History Study<sup>3</sup> which consists of retrospective life-history data for 2323 men and women living in the former GDR in October 1990. Face to face interviews were conducted with representative samples of men and women from four birth cohorts: 1929-31, 1939-41, 1951-53, and 1959-61. The oldest cohort was coming into adulthood at the time the GDR was founded, the 1940 cohort made the transition to adulthood during the early, economically difficult years, and the two youngest cohorts were born during the formative years of the GDR. Since there was a great deal of out-migration before 1961 as well as during 1989-91, the sample is only representative of the population who remained living in East Germany. The data provide a truly unique opportunity for examining how the state socialist society and planned economy affected the family and work histories of its citizens.

The data consist of a detailed month to month accounting of education, employment,

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<sup>3</sup> Principal investigators were Johannes Huinink and Karl Ulrich Mayer, Max-Planck-Institut für Bildungsforschung, Berlin.

family and geographic mobility history, as well as cross-sectional data on informal networks, attitudes towards work and family, and attitudes towards the changes brought with the fall of the socialist regime (for more detail see Huinink 1992). The data we are using here are all from the schooling, family and work histories which we have followed up until the end of 1989, when the first social and economic changes resulting from the collapse of the regime began to be felt.

The limitation of the sample to people who remained residents of the GDR until 1990 means, of course, that the data cannot say anything about the (often traumatic) effects the socialist system had on the people who left the country. More importantly for the analyses presented here, the extensive out-migration prior to the building of the Wall means that the data are not representative of the population living in the GDR prior to 1961.

This may present problems for some types of analyses, while others are unaffected. Examples of the latter include all comparisons within cohorts, that is, analyses that are concerned with changes over the life course for members of a given birth cohort. Thus, we can safely compare the effect of sex on earnings in the first job with the effect in subsequent jobs, and make inferences about changes over time in women's position compared to men's in a given cohort (as will be done in testing hypothesis number 2). It may be more problematic if we want to compare cohorts at given stages in their life course, because such comparisons often will be attempts to say something about society at given points in time. For example, when we test the hypothesis that the effect of sex on earnings in the first job has decreased from the oldest to the youngest of the four cohorts, we are asking whether women were more disadvantaged when the oldest cohort entered the work force than when the youngest did so. If there is non-random attrition from the population at these points in time, then our sample will reflect this attrition, and it is possible that the estimated sex effects are biased for the cohorts where the attrition is highest. The seriousness of this problem depends on who it is in the population that our sample does not represent. There is evidence that the emigration from the GDR prior to 1961 was highly selective of well-educated people, the self-employed and farmers. If this selectivity was strong enough to result in a bias in our estimates of a sex effect on earnings, and we do not know that for a fact, it would only affect estimates for the two oldest cohorts. If highly qualified men and their families were somewhat more likely to leave the country, then it is possible that we underestimate any improvement in women's situation which may have taken place over time, because we would underestimate the sex effect for the oldest cohorts. This in turn means that our data provide a conservative test of the hypothesis regarding historical change; this should be

taken into consideration when evaluating the results of the analyses below.

### **Measurement of variables.**

Indicators of life course convergence. We use four indicators of the extent to which men's and women's life course patterns converged during the history of the GDR, namely time use during young adulthood, labor force experience, employment patterns during the years around the birth of the first child, and educational qualifications. We measure time use during young adulthood by cumulating the number of months between age 15 and age 30 spent in schooling, occupational training, employment, and employment interruptions. Labor force experience is the total number of months spent in employment from the time of entry into the labor force until the end of 1989. We use the employment pattern two years before until four years after the birth of the first child as an indicator of the extent to which the sexual division of labor has changed across the four cohorts. The employment history is characterized by two measures, namely the incidence of part-time work and of employment interruptions.

The level of educational qualification is measured by what in Germany is called occupational training (berufliche Ausbildung). This includes all forms of vocational training, apprenticeships, technical colleges, trade schools, as well as higher education, such as a university degree. In the GDR (as in West Germany) occupational training determined to a large extent the type of occupation one was qualified to enter. We distinguish here between training as an apprentice to become a skilled worker (included in this category is training to become 'Meister'), training at the so-called 'Fachschule', which we here have translated as 'technical college', and training at institutions of higher education. The Fachschule became a very important part of the occupational training system in East Germany. It provided a three-year education that required graduation from the tenth grade. It offered programs in engineering, economics, nursing and other medical specialties and many other types of schooling which provided students with very specific skills and qualifications needed in narrowly defined occupations which to a large degree were located in the service sector. Kindergarten and primary school teachers got their degrees here.

Measuring Employment Outcomes. We use two different measures of employment outcomes, net earnings and whether or not the respondent had ever held a top-level position in

the occupational hierarchy. Earnings probably was a less powerful indicator of access to scarce resources in the GDR than it is in capitalist societies, since there was less need for monetary income to cover the basic necessities of life. Prices on housing, food, and children's clothing were kept low by high government subsidies, and education and health care were free. Nonetheless, it was necessary to earn money, and one's standard of living did depend on the amount earned. More important for the issues that concern us here, the earnings of women relative to men is a measure of women's economic independence of men. The gender gap in earnings therefore must be considered an important indicator of the degree to which gender equality has been achieved in a society.

Respondents were asked for their net monthly earnings at the beginning and end of each job in their work history. Net earnings refers to earnings after taxes, that is the take-home pay.<sup>4</sup> We shall analyze the net earnings at the time of entry into the labor force and at the end of 1989. All analyses were done separately for each cohort. In the analyses reported here earnings in the first job have not been adjusted for inflation, since entry into the labor force for members of the same birth cohort fall within roughly the same historical period.<sup>5</sup> The net earnings at the time of entry into the labor force is simply the earnings reported for the beginning of the first job lasting at least 6 months. It was more complicated to arrive at an estimate of net earnings at the end of 1989, since all the information available pertained to earnings at the start of the job held at that time and earnings at the time of interview (between 1990 and 1991). After January 1990, and with accelerating pace after July 1990 when the currency union between the two Germanies went into effect, salaries increased a great deal. In our data jobs ending during the last six months of 1989 had average net earnings of 1054 DM. Jobs ending during the first six months of 1990 had average earnings that were 3% higher at 1088 DM, for jobs ending (or censored by

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<sup>4</sup> Tax rates were low (about 15% throughout the history of the GDR) and the progression was not very steep. Net earnings, therefore, probably is a reasonably good indicator of gross earnings in the GDR.

<sup>5</sup> We did all analyses of earnings in the first job with an earnings measure adjusted for inflation and secular increases in earnings. Since there was no such thing as a price index in the GDR, we made an adjustment to the reported earnings based on five-year earnings averages (Staatliche Zentralverwaltung für Statistik 1989). The period 1984-89 was taken as the reference point. These analyses produced estimates of the sex differences in earnings that were almost identical to those based on unadjusted earnings.

the interview) during the first six months of 1991 and the first six months of 1992 earnings were 17% and 42% higher, respectively. These are very large increases over a short period of time, and therefore it was necessary to adjust the earnings data in some manner, since we were interested in obtaining an estimate of net earnings at the end of 1989, just before the increase in earnings induced by the breakdown of the GDR set in. In the absence of better data, we used our own earnings data to make this adjustment. We identified the job each respondent occupied in December 1989. The net earnings reported for the end of this job were then adjusted according to how much the average earnings for jobs ending at that time had increased over the last six months of 1989. Thus if a job ended during the first six months of 1990, the adjustment factor was 1.03, since earnings reported for these six months were 3% higher than they were for the previous three months. This adjustment is admittedly crude, but it is probably the best estimate that our data can provide for net earnings at the end of 1989.<sup>6</sup>

The proportion of missing values on earnings is somewhat higher than for other data in the job history. Earnings is missing for 9% of first jobs, and 10% of last jobs.<sup>7</sup> Women are somewhat over-represented among those with missing values, and respondents from the oldest cohort are more likely to have missing data on earnings for the first job. It is probably reasonable to assume that missing values are more likely among those with low pay and/or weak attachment to the labor force, hence the over-representation of women. This in turn means that our estimates of gender differences in earnings may be somewhat low.

Leading positions are identified with the help of the occupational codes used by the statistical office of the GDR. We defined three categories of jobs that were top positions: The first consists of high level jobs in the party and political system, the second of high level professional jobs outside the political system proper, and the third of medium or lower level positions of authority. We consider the first two groups to belong to the elite in the GDR. The third group occupies leading positions within their fields, but they should not be considered part

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<sup>6</sup> It is important to note that the results are very robust with respect to various ways of constructing a measure for earnings in the last job. We have estimated models using the reported earnings at the end of the job occupied in 1989, i.e., without the adjustment for post-socialism increases in earnings, as well as models using the average of the beginning and end earnings for the job occupied in 1989. The results with respect to the sex differences are very similar regardless of the operationalization of the dependent variable.

<sup>7</sup> In addition, 12% were not in the labor force in 1989.

of the elite. Table 1 provides more details about this variable.

Table 1. Examples of Leadership Positions in the GDR.

Categories of leading positions	Examples
Positions of power in politics and government	High-level managers in the party or labor union apparatus, Principals of the courts, Mayors, Officers
Positions of power in business	Manager of enterprises, Directors of scientific institutes, Professors, Principals of schools
Lower-level manager	Heads of nursery schools, Heads of vacation homes or restaurants

The independent variables in the multi-variate analyses of earnings include in addition to sex (coded 1 for men and 2 for women), measures of educational qualifications, full-time labor force experience, parental obligations, whether or not the job was a full-time job, and which industry the job was in. Full-time employment is defined as working 40 hours or more, and parental responsibilities are measured by a dummy variable taking the value 1 if the respondent was a parent at the time of entry into the labor force, or by the number of children born at the beginning of the job held in 1989. In the GDR, it was very difficult to work part time or to leave the labor force, unless one had responsibility for small children and unless one was a woman. For that reason, we see labor force experience and part-time work as measures of the extent to which the demands of the family has influenced a person's employment history. Finally, the industry in which a job is located is based on a detailed industrial classification collapsed into six categories: Primary industries, energy and steel, Chemicals, electronics and construction, textiles and commerce, and the service industry.

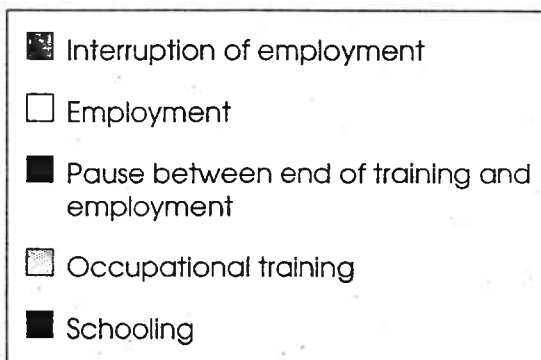
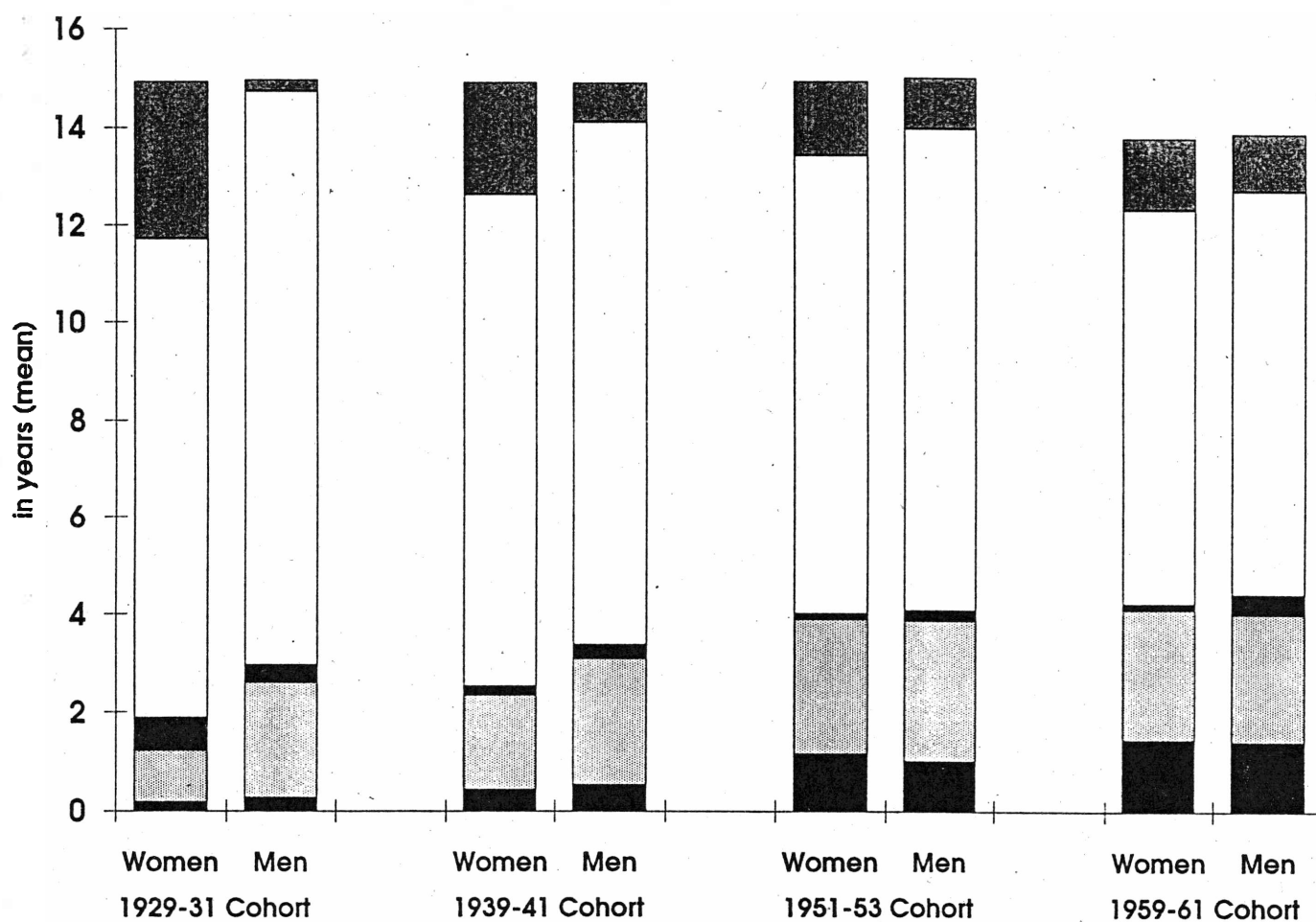
### **Convergence in Education and Labor Force Experience**

The convergence in men and women's participation in education and employment can be demonstrated in many different ways. We focus here on convergence in time use, in labor force experience and in educational qualifications.

We turn first to a comparison across cohorts of the average amount of time allocated to schooling and employment between age 15 and 30 (Fig. 1). The convergence in time use is very

clear. Women in the two older cohorts spent less time in school and being employed, and more time as housewives, i.e., between employment spells. For women and men in the younger cohorts there are negligible differences in time use during young adulthood. The convergence is almost complete.

Figure 1. Average duration of schooling, occupational training, employment and interruption of employment between the ages of 15 and 30.



Another piece of evidence of the striking convergence of life course patterns in the GDR is presented in Table 2, where men's and women's total number of years in employment, and in full-time employment, is compared.

Table 2. Labor force experience in months until the end of 1989 by sex and cohort.

	1929-31 Cohort		1939-41 Cohort		1951-53 Cohort		1959-61 Cohort	
	W	M	W	M	W	M	W	M
Number of months in the labor force	405	478	330	354	188	201	97	99
Ratio of women to men	.85		.93		.96		.98	
Number of months in the full-time labor force	334	461	272	346	158	194	84	97
Ratio of women to men	.72		.78		.81		.86	

LV-DDR 1993, MPIB

We see here that between the time of entry into the labor force and the end of 1989, women in the oldest cohort were employed for 407 months (or 34 years) and men for 479 months (40 years), or men had worked 15% longer than women in this cohort. For the younger cohorts an even smaller difference is observed. Most of the labor force experience was in full-time work, but women clearly are over represented among part-time workers, so that their full-time work experience is 19% lower than men's in the 1929-31 cohort, 15% and 12% lower for the two middle cohorts, and 7% lower for the youngest cohort.

The improvement in women's opportunities for getting some kind of occupational training is very clear from the figures presented in Table 3.



Table 3. Occupational training or higher education attained at beginning of first job by sex and cohort

	1929-31 Cohort		1939-41 Cohort		1951-53 Cohort		1959-61 Cohort	
	W	M	W	M	W	M	W	M
No training (including partial)	75.1	32.1	24.4	14.2	9.8	8.3	10.6	9.4
Skilled worker (including "Meister")	20.3	62.3	60.1	73.9	59.2	72.4	56.2	75.4
Technical college degree	2.3	2.1	9.6	6.1	20.4	5.2	23.0	3.8
University of other higher degree	1.3	3.5	5.5	5.8	12.6	14.1	10.2	11.4
Index of dissimilarity	43.7		13.9		16.7		20.4	

LV-DDR 1993, MPIB

First, there was a remarkable decrease in the percentage of women who did not receive any occupational training. At the time of entry into the labor force, 75% of women and 32% of men in the oldest cohort had no formal training; for the two youngest cohorts these figures had declined to 11% for women and 9% for men. A convergence is also observed in the percentage of men and women entering the labor force with a degree from a university or other institutions of higher education; in the oldest cohort men were about three times as likely as women to enter the labor force with a degree from a university (3.5% compared to 1.3%). In the three younger cohorts women were about as likely as men to do so, and higher education remained rather uncommon.

The upgrading of educational qualifications largely took place at the middle level with

skilled workers or graduates from a technical college. The percentage of men entering the labor force as skilled workers increased from a quite high level of 62% in the oldest cohort to more than 75% in the youngest. Women also were likely to enter the labor force as skilled workers. In the oldest cohort only 20% belonged to this category; for the 1939-41 cohort fully 60% were trained as skilled workers, and this declined somewhat to 56-57% for the two younger cohorts of women. The reason for this decline was the increasing importance of technical college for women. More than twenty percent of the women in the two younger cohorts entered the labor force with a degree from one of these schools.

These data show that there was a remarkable equalization in the level of qualification, but that there was a rather high degree of sex segregation at the middle level of qualification. Since there was a fairly strong correspondence between type of qualification and the type of job one could get, these sex differences in occupational training were also reflected in the occupational positions that people had when they first entered the labor market. Men in all cohorts overwhelmingly entered the labor force as skilled blue-collar workers, women in the oldest cohort began their working life as unskilled-or semi-skilled workers, and the majority of women in later cohorts as skilled blue-collar workers, skilled white-collar employees, and as semi-professionals. For both men and women there was an increase in the proportion entering the labor force as white-collar workers and semi-professionals, but this was much more pronounced for women than for men, largely because many more women received training at the technical colleges.

### **Continuing Differences.**

The convergence in men's and women's life course patterns with respect to time use, labor force participation, and level of educational qualifications took place in the context of continuing differences in men's and women's lives, especially with respect to where they worked in the labor market, and with respect to the division of labor at home. We shall here first examine trends in the industry segregation by sex at the time of entry into the labor force, and then demonstrate the continuation of women's child care obligations.

### Industry segregation

Industry segregation remained relatively high throughout the history of the GDR with men being more likely to work in heavy manufacturing, chemicals, electronics and construction, and women more likely to work in services, textiles and commerce industries. The figures in Table 4 show

this quite clearly.

Table 4. Industry of first job by sex and cohort.

	1929-31 Cohort		1939-41 Cohort		1951-53 Cohort		1959-61 Cohort	
	W	M	W	M	W	M	W	M
Agriculture	35.2	24.6	16.2	13.9	8.1	7.2	6.6	10.6
Energy, Steel, Machine manufacturing	3.3	24.6	10.7	24.7	8.8	25.9	8.9	23.5
Chemicals, Electronics, Construction	11.6	24.6	14.8	35.9	18.6	40.7	18.4	37.9
Textiles, Commerce	19.3	10.0	26.8	3.7	24.2	3.1	19.1	2.3
Services	22.3	15.2	30.9	20.0	38.6	21.7	47.0	24.2
Missing	8.3	4.2	0.7	1.7	1.8	1.4	0.0	1.5
Index of dissimilarity	33.2		23.4		39.2		39.6	

LV-DDR 1993, MPIB

About a quarter of the men in all cohorts entered the labor force in the heavy manufacturing industries, while it remained rare that women worked here. Agriculture was an important industry only for the oldest cohort where more than a third of the women and one out of every four men began their working lives. The growth industry in the GDR, as in other industrial societies, was the service industry. Among women in the oldest cohort, 22% entered the labor force here, and this percentage increased steadily across cohorts so that almost half of all women

in the youngest cohort started to work in the service industry. For men, the service industry also became more important over time; fifteen percent of men in the oldest cohort started out here, and by the time the youngest group of men entered the labor force one out of four did so by getting a job in the service industry.

The level of sex segregation by industry was at its lowest at 23.4 for the cohort born 1939-41, whereas it was higher for both the older and younger cohorts. The decrease from the 1930 to 1940 cohort was due to the declining importance of agriculture especially among women, and to the fact that women's odds relative to men's of entering the labor force in the manufacturing industries were at their highest in this cohort. This in part reflects the emphasis placed on providing women training so that they had the qualifications to enter the labor force as skilled workers (see Table 3), in part the great demand for labor in general the manufacturing industries during the period when this birth cohort entered the labor force. The increase in industry segregation for the two younger cohorts was largely due to the increasing percentage of women entering the service industry, a reflection of the number of women graduating from the technical colleges (Fachschule).

The main reason for attaching importance to the continuation of a fairly high level of sex segregation by industry is that wages varied from industry to industry. The best pay was to be found in heavy manufacturing and chemicals, electronics and construction, the industries that were most important for men, while the lowest pay was found in textiles and commerce as well as in the services, the industries most important for women (see e.g. Schenk 1990).<sup>8</sup>

### Parenthood and Employment

The vast majority of men and women in our four cohorts became parents and were married at least once. Between 90 and 94% of the women had at least one child, and about 90% of men in the three older cohorts were fathers, while 'only' 78% of the youngest men had children at the time of the interview.

In contrast to Western European societies couples continued also in the younger cohorts to form families at an early age. For the 1960's cohort the median age for the birth of the first

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<sup>8</sup> In our data, the mean beginning net earnings in the five broad industry groups were as follows (all cohorts combined): agriculture 324 Marks, heavy manufacturing 517 Marks, chemicals etc. 499 Marks, textiles and commerce 373 Marks, and services 467 Marks.

child for women was 22 years and for men 25 years. So nearly all women and men had to achieve the difficult task of combining family and work at a time in their working life when they did not have much labor force experience. From other studies we know that the birth of children had a strong influence on the career development of women (Nickel 1990), but we have only circumstantial evidence that parenthood had little or no influence on men's work lives.

We therefore compared how mothers and fathers adjusted their employment to the birth of the first child. We did so by examining women's and men's labor force participation or participation in occupational training, and the incidence of part-time employment during the period two years before to four years after the birth of the first child. The results are presented in Figure 2 and 3.

Two years before the birth, nearly all women and men were in employment or in training. Shortly before the birth, the labor force participation of women in all cohorts went down rapidly. This was because of the obligatory maternity leave, which required all women to go on paid leave for some time (the duration increased gradually over the years from 11 weeks to 26 weeks). Women of the two older cohorts who interrupted their labor force participation were likely to have a longer interruption period during which additional children often were born. In this connection it is important to know that the availability of child care facilities was still inadequate in that time period.

For the women of the two younger cohorts a new pattern became common<sup>9</sup>. There was strong political pressure for women in these cohorts to return to the labor force as soon as possible after childbirth. As we can see, it seems that this political pressure succeeded (although it should be noted that women in other countries began to do the same). Women interrupted their labor force participation in connection with the birth of each child for a shorter time period. Instead of one longer period out of the labor force, women in these cohorts had an unstable employment phase in their lives with several short interruptions in connection with the birth of each child (Trappe 1993). This was widely recognized by the firms (Winkler 1990). What remained stable across the cohorts was the labor force participation of men. No adjustment to the new father role can be seen.

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<sup>9</sup> The so called 'Babyjahr' (one year paid maternity leave) after the birth of the first child was not available yet for these women.

Figure 2. Change in labor force participation or participation in occupational training around the time of the birth of the first child.

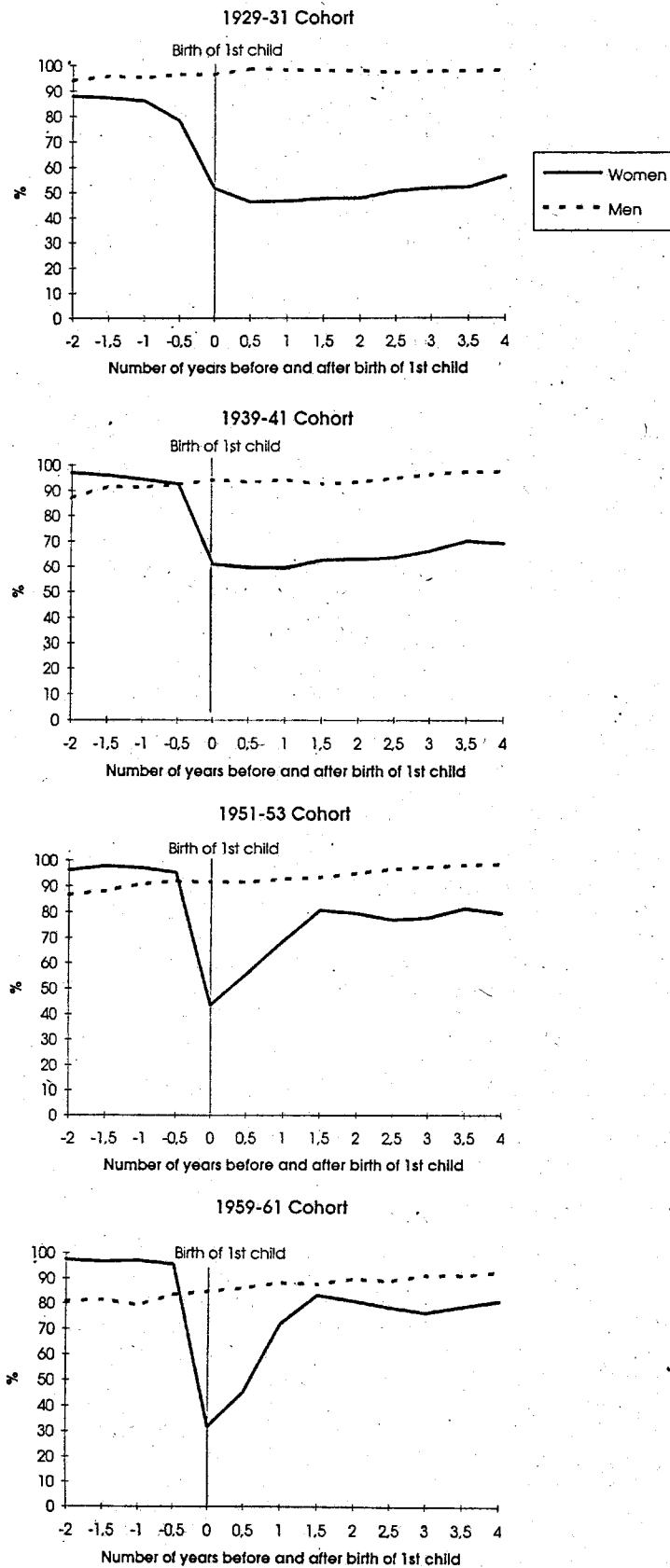
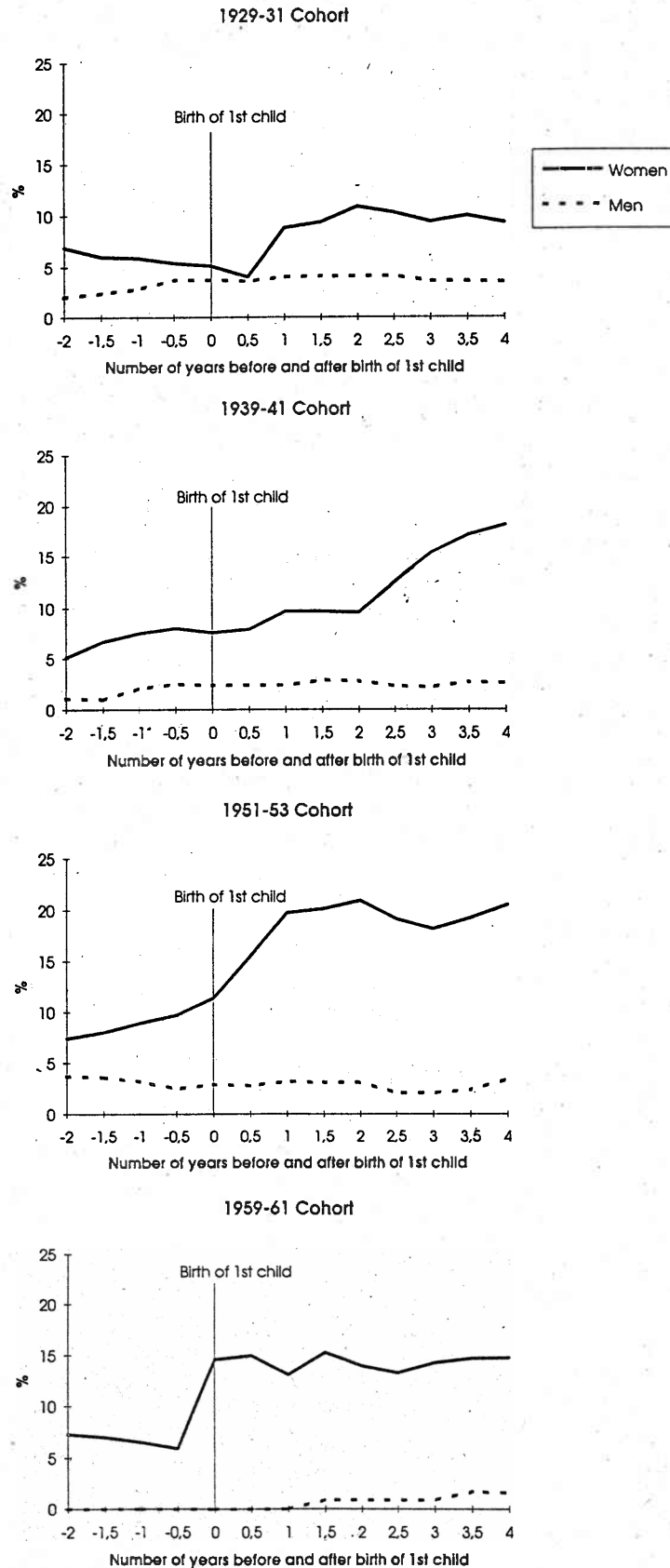


Figure 3. Change in percentage of parents with part-time employment around the time of the birth of the first child.



Part-time work is one way to combine employment with the care of small children. It was not a very common form of employment in the GDR, but it was important in certain phases of the life course (Trappe 1993), and it was used much more widely by women than by men (Winkler 1990). Here it is important to note that the GDR belonged to the European countries with the highest daily, yearly and life-time working hours<sup>10</sup>. It is also important to note that men did not have the opportunity to choose part-time work, should they have wanted to do so. This was an option available only to women. Figure 4 shows the proportion of part-time working women and men among all working women and men during the period two years before and four years after the birth of the first child. Again we see a stable pattern for men across all cohorts and no evidence of any effect of becoming a parent.

For the two older cohorts the proportion of part-time working women was relatively small, although public child care facilities for children under 3 years old were in short supply and part-time work to some extent was encouraged by the government in order to get as many women as possible into the labor force. When the women of the younger cohorts started their family formation, part-time work was not politically favored anymore, and from the beginning of the 1970's it became very difficult to acquire such jobs. Nevertheless, it became more common at least for women born in the 1950's.

Another way to adjust employment to the needs of the family was to change jobs and sometimes also occupational fields to one that was easier to combine with caring for children. Women were often looking for more flexible jobs, for example in terms of time arrangements. This possibility was far less under the control of the state than leaving the labor force or working part-time. In the time period of one year before and two years after the birth of the first child more women than men of all cohorts changed their jobs (figures not shown). Among these women, nearly one third changed to a job that required a lower level of qualification than the one they previously had. This was especially true for the women of the younger cohorts. It is likely that this development took place because these women were prevented from making the "traditional adjustments" consisting of leaving the labor force or going into part time work.

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<sup>10</sup> Since 1967 the regular amount of working time was 43.75 hours per week. For full-time working women with two or more children under the age of 16 it became reduced to 40 hours. All people who worked less than this amount of time were considered to be 'part-time working'. In our sample most of them worked between 25 and 34 hours per week.



In contrast to women, almost every third man who changed jobs, changed to a better job. It seems that the family formation period which for women entailed several types of adjustments in relation to employment, meant for men the time to start a career.

It is evident that there was a great deal of change in women's employment response to the birth of the first child, but also that many women in all four cohorts made some kind of adjustment in their employment when they first became mothers. It is also evident that men's employment history continued to be quite unaffected by their transition to parenthood.

### **Occupational Careers**

We now turn to an examination of the determinants of earnings in the first job and access to top level occupational positions. Our main hypothesis is that the increase in women's educational qualifications compared to men's should have resulted in a decrease in the gender gap in earnings at the time of entry into the labor force and in an improvement in women's chances of gaining access to top-level positions. Remaining differences in the pay women and men receive when they start working are expected to be due to sex segregation by industry and to women's child care responsibilities.

#### Earnings in the first job.

The main purpose of the analyses of earnings in the first job is to estimate how large the sex effect is and to determine whether it can be accounted for by sex differences in educational qualifications, in part-time work, and in the industry in which the first job was located. We therefore estimated four semi-logarithmic models of the logged net earnings at the time of entry into the labor force for each of the four cohorts. The first model included only sex as a regressor, the second included educational qualifications, the third model added controls for whether or not the first job was a full-time job, and whether the respondent was a parent. The fourth and last model added a control for industry. The results of these calculations with respect to the effect of sex on the logged net earnings in the first job are reported in Table 5.<sup>11</sup>

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<sup>11</sup> The coefficients in the full model are given in Appendix Table A as are the mean and standard deviation of all variables.

Table 5. The effect of sex on logged net monthly earnings at the beginning of the first job under four different models by cohort.

Effect of Sex	1929-31 Cohort	1939-41 Cohort	1951-53 Cohort	1959-61 Cohort
Gross effect	-.26 (.08)	-.36 (.04)	-.24 (.03)	-.23 (.02)
Net of occupational training	.01 (.09)	-.33 (.04)	-.25 (.03)	-.23 (.03)
Net of occupational training, full-time work, and parent status	.01 (.09)	-.33 (.04)	-.24 (.03)	-.22 (.03)
Net of occupational training, full-time work, parent status, and industry	-.03 (.09)	-.28 (.08)	-.22 (.03)	-.19 (.03)

LV-DDR 1993, MPIB

The hypothesis that the gender gap in income has declined across cohorts is not supported by these data. At the time of entry into the labor market, women in the oldest cohort were paid 26% less than men, women in the 1939-41 cohort were paid 36% less, and the gender gap in net earnings for the two younger cohorts was 23-24%; none of these differences between cohorts are statistically significant. These figures are of a magnitude that is quite similar to that found for West Germany (e.g. Hannan, Blossfeld and Schomann 1990). We must conclude then that the gender gap in net earnings at the time of entry into the labor force was substantial in the GDR and that there is no indication of a decline over time, as we had expected. A major reason for this is that the closing of the gender gap in the level of educational qualifications did not appear to have had any impact on the differences between women's and men's earnings. This can be seen from the results of the model that controls for occupational training.

We see here that it is only for the oldest cohort that this in any way affects the sex effect; for all other cohorts, it remains virtually the same as the gross effect. For the 1929-31 cohort, the gender gap in earnings at the time of entry into the labor force can be fully attributed to the fact that so many women of this cohort began their working life with no occupational training (see Table 3). This large group of women worked overwhelmingly as unskilled workers and this explains why their earnings were so much lower than the average man's who was more likely to work in skilled jobs commanding higher wages.

For the three younger cohorts differences between women and men in the level of educational qualifications were narrowed, but there remained fairly substantial differences in the type of training. These differences do not, however, account for any part of the gender gap in earnings. Net of occupational training, women continued to be paid between 23 and 33% less than men when they entered the labor force. The figure was a little higher for the 1939-41 cohort, but the difference between cohorts is not statistically significant. There is then only limited support for the hypothesis that the gender gap in earnings is due to differences in educational qualifications, and there is no support for the hypothesis that the improvement in women's qualifications compared to men's resulted in a narrowing of women's pay disadvantage at the time of entry into the labor market.<sup>12</sup>

Two additional earnings models were estimated, one including controls for occupational training, full-time work (almost all worked full time in the first job), and whether or not the respondent was a parent at the time of entry into the labor force, and another adding a control for industry. As can be seen from the figures presented in the last two panels of Table 5, none of these additional variables affected the size of the sex effect. Most surprising is the fact that industry accounts for so little of the gender gap in earnings, reducing it by only 2-3% for the three younger cohorts. This suggests that industrial sex segregation was *not* a major reason for women's lower pay in the GDR, as suggested by many researchers.

There are three main results of this analysis of women's and men's earnings in their first job. First, women were paid substantially less than men at the time of entry into the labor force

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<sup>12</sup> We also estimated models that included dummy variables for occupational position (berufliche Stellung) instead of the dummy variables for occupational training. The results of this analysis were almost identical to those reported in Table 5. It was not possible to estimate models that included measures of both occupational training and occupational position. This is because of the very close correspondance between the two variables.

and their disadvantage remained unchanged over time. Second, for the oldest cohort the gender gap in earnings could be attributed to differences in educational qualifications, but this was not the case for the three younger cohorts. This is strong evidence that educational qualifications should be considered a superficial and not a basic cause of women's pay disadvantage. (Lieberson 1985:194). Third, the gender gap in earnings could not at all be attributed to the fact that men and women often worked in different industries with different average levels of pay. The persistence of the sex effect on earnings after controlling for educational qualifications and industry must mean that women were paid less than men within each educational category and within each industry. This suggests that segregation of men and women into different occupations might have been an important source of women's pay disadvantage.<sup>13</sup>

### **Access to leadership positions**

Women's access to powerful positions is another measure of the achievement of gender equality in a society. We defined three types of leadership positions (see Table 2). The first two types consist of positions with a great deal of power in politics or government or in business, and the third consists of lower level positions with leadership responsibilities; included in this group are positions such as manager of a store, and director of a kindergarten. In the following, we shall combine the first two groups into one.

As Table 6 shows, being in a leadership position was something that most men and women did not experience. Men in the oldest cohort were ten times as likely as women to get a top job, and in the two middle cohorts they were twice as likely to do so. In the youngest cohort men and women were equally likely to be in one of those jobs. Hence there was a dramatic, and statistically significant improvement in women's chances to get into elite positions. With respect to the lower-level positions of leadership, women (except for women in the oldest cohort) were *more* likely to have been in one of those than men; the relative odds increased from 1.12 for the 1939-41 cohort to 4.6 for the youngest cohort.

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<sup>13</sup> We are currently in the process of testing this hypothesis directly.

Table 6a. Women and men in leadership positions in politics, government or business (Percentage who have ever held such a position)

	1929-31 Cohort	1939-41 Cohort	1951-53 Cohort	1959-61 Cohort
Women	3.3	6.9	6.3	3.3
Men	27.9	15.5	11.0	3.4
Women's relative odds	.09	.40	.54	.95

LV-DDR 1993, MPIB

Table 6b. Women and men in lower-level management positions in politics, government or business (Percentage who have ever held such a position)

	1929-31 Cohort	1939-41 Cohort	1951-53 Cohort	1959-61 Cohort
Women	7.0	14.1	9.1	4.9
Men	10.7	12.8	7.2	1.1
Women's relative odds	.68	1.12	1.29	4.6

LV-DDR 1993, MPIB

The probability of getting into a leadership position was strongly related to educational qualifications, and the improvement in women's chances of getting into elite positions is almost solely due to the improvement in their chances of getting a higher education. This is in stark contrast to the results with respect to earnings in the first job, where we found that the upgrading of women's educational qualifications had not reduced the gender gap in earnings. Our hypothesis that women's lower chance of getting into the top jobs could be attributed to family

responsibilities, or to adaptations made by women during the early phase of parenthood was not supported in any way by the data. These things turned out to have had no effect at all. The number of children had no effect, whether or not one had children had no effect; and it did not matter if there had been a change to a worse job, or to a better job during the early work history.

### **Earnings at the end of 1989**

In the last part of the analysis we shall examine differences in pay of women and men at the end of 1989, just before the social and economic system collapsed in the GDR. The main concerns are as before: how large the gender differences in net earnings were at this point in time, and whether they had increased over the working lives of the four birth cohorts. Table 7 presents the sex effects in four different models regressing the logged net earnings at the end of 1989 on various sets of independent variables.<sup>14</sup>

Women in the oldest cohort were paid on average 51% less than men at the end of 1989, while the gender gap in earnings for the other cohorts were 25-27% at this time. If we compare these figures with those for the time of entry into the labor force, it is clear that the gender gap in earnings increased over the working lives of the oldest cohort, but that it remained rather stable for the other three cohorts.<sup>15</sup> This means that our second hypothesis is supported by data only for the oldest cohort. For cohorts born after 1939, the gender gap in earnings did not increase over the life course, in contrast to what is typically the case in market economies.

The gender gap in earnings in 1989 is equally resistant to explanation as is the difference in pay at the time of entry into the labor force. Controlling for differences between women and men's educational qualifications did reduce the sex effect for the oldest cohort from 51% to 37%, but it had no effect for the other cohorts. The sex effect was reduced somewhat once differences in labor force experience, number of children, and part-time work in the job held at the end of

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<sup>14</sup> The coefficients in the full model are given in Appendix table B as are the mean and standard deviation of all variables.

<sup>15</sup> Cohort differences in the coefficients may, of course, be due to differences in labor force experience. Cohort comparisons for model 1 and 2, which do not control for labor force experience, are therefore not appropriate.

1989 were taken into account. By far the most important among these variables is part-time work; neither labor force experience nor number of children had a significant effect on earnings (nor was there an interaction between sex and number of children). Finally, as shown in the last panel of Table 7, controlling for industry again does not help us understand how the gender gap in earnings came about.

Table 7. The effect of sex on logged net monthly earnings at the end of 1989 under four different models by cohort.

<u>Effect of Sex</u>	<u>1929-31 Cohort</u>	<u>1939-41 Cohort</u>	<u>1951-53 Cohort</u>	<u>1959-61 Cohort</u>
Gross effect	-.51 (.05)	-.27 (.03)	-.26 (.03)	-.25 (.03)
Net of occupational training	-.37 (.05)	-.27 (.03)	-.30 (.03)	-.28 (.03)
Net of occupational training, full-time work, labor force experience and number of children	-.31 (.05)	-.23 (.03)	-.24 (.03)	-.24 (.03)
Net of occupational training, full-time work, labor force experience, number of children and industry	-.31 (.05)	-.23 (.03)	-.24 (.03)	-.25 (.03)

LV-DDR 1993, MPIB

There are two important results from this analysis. The first is that with the exception of the oldest cohort, there did not seem to have been a marked increase in women's pay disadvantage over time, and the second is that there was no effect of two of the variables measuring differences between women and men in time and effort spent on children and families, namely full-time labor force experience and number of children. The only family-related variable that contributed to the sex effect was part-time work in the job held in 1989, while no effect of

past part-time work or time out of the labor force was evident. One interpretation of this finding is that the policies aimed at creating conditions that made it possible for women to combine employment and childbearing were successful in the sense that women's actual behavior with respect to labor force interruptions and part-time work did not seem to help us understand why women were paid less than men. This fits well with the finding that family effects on earnings also are weak in Norway and Sweden, two countries with family policies quite similar to those of the GDR (Rosenfeld and Kalleberg 1990).

### **Conclusions**

By now it should be evident that our data add to the evidence of the continuation of gender inequality in employment outcomes in the GDR, despite a quite remarkable convergence in men's and women's educational qualifications and in their labor force participation over the life course. Women continued throughout the forty year history of the GDR to begin their working lives at a considerable pay disadvantage, and this changed little over the worklife, except for women in the oldest cohort who were at a greater disadvantage at the end of their working life than they had been at the beginning. The fact that the gender gap in earnings remained pretty stable over the life course for the three younger birth cohorts suggests that the extraordinarily strong labor force attachment of women in these cohorts may have paid off. The labor force interruptions and periods of part-time work that many women continued to have during the child bearing phase did not in any way influence their earnings at the end of 1989.

Women's chance of gaining entry into top level positions improved over time, largely as a result of the increase in the proportion of women graduating from university. This improvement in women's chance of moving into elite positions was not reflected in their earnings, however. A comparison of the earnings of women and men in top level positions (results not shown), showed that women in top level position were paid less than their male counterparts both at the time they entered the job and when they left it, and that the difference was about the same as it was overall.

The persistence of sex differences in earnings within industries, within the different levels of occupational qualifications, and within the top layer of the occupational structure over the forty years that the German Democratic Republic existed, suggests that a major cause of these differences should be sought in sex segregation of the occupational structure, and in lower pay in jobs that were typically performed by women. It is beyond the scope of this paper to examine



this possibility, but it is important to point out that even if we establish that the gender gap in earnings in the GDR can be attributed to low pay to women's jobs, it still remains a question why such jobs were paid at a lower rate than men's jobs at similar levels of qualification and within the same industry. One reason for such pay differences in the early years after the war probably must be sought in the fact that the old (pre-war) wage and salary scales were taken over by the new regime and comprised the foundation on which the wage and salary system for the GDR developed (Manz 1992:39; Roloff 1991; Vortman 1985:64).<sup>16</sup> It is very likely that men's jobs carried a premium in the pre-war wage and salary scales, and this clearly would have benefitted men in the oldest cohort at the time of entry into the labor force. Given the official goal of equality between women and men, one must ask however, why the pay scales were not adjusted so that jobs payed not according to the sex of their typical occupants but only according to factors that considered valid criteria for wage and salary differences, namely the level of qualification needed to perform the job, the productivity of the firm, and the importance of the industry in which the job was located (Vortmann 1985:62-68). The answer to this question is most likely found in the conviction of the leadership of the Communist Party (SED) that the problems regarding women's equality with men were solved already in the early 1960's, when the socialist mode of production had been implemented and women's participation in the labor force had reached very high levels. Women were then considered free from exploitation, their pay disadvantage had or would very soon disappear, and all remaining problems with respect to women's position were seen as more or less unimportant. The possibility that inequality between the sexes in fact had not disappeared or that it could emerge again was not accepted theoretically, and hence not considered a problem that the state or the party would need to concern itself with further. The authoritarian nature of the GDR prevented a democratic debate of such decisions, and it also prevented researchers from demonstrating the continuing disadvantage of women. The price for this was paid, of course, by women and their families.

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<sup>16</sup> "In der DDR würden die Arbeitseinkommen zentral für die Zweige und Bereiche mit den Jahresplänen festgelegt. So wurden vor 45 Jahren die gegebenen Einkommen (Löhne und Gehälter) übernommen und in Einklang mit der steigenden Arbeitsproduktivität bis 1989 jährlich erhöht." (Manz 1992:39).

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**Appendix Table A. Semi-logarithmic models of average net income at time of entry into the labor force.**  
**Ustandardized coefficients. Standard errors in ( ). Means and standard deviations in *italics*.**

<u>Independent variables</u>	<u>1929-31 Cohort</u>		<u>1939-41 Cohort</u>		<u>1951-53 Cohort</u>		<u>1959-61 Cohort</u>	
Mena ln(net earnings)	4.86	.94	5.79	.55	6.26	.35	6.45	.31
Constant	4.80	(.25)	5.95	(.15)	6.45	(.09)	6.47	(.08)
Sex	-0.03	(.09)	-.28	(.04)	-.22	(.03)	-.19	(.03)
	1.50	.50	1.49	.50	1.50	.50	1.55	.50
<u>Highest occupational training completed</u>								
None	0		0		0		0	
Skilled	.44	(.10)	.41	(.06)	.11	(.05)	.14	(.04)
	.47	.50	.69	.46	.65	.47	.66	.48
Tech college degree	.85	(.26)	.64	(.09)	.22	(.06)	.18	(.05)
	.03	.16	.08	.28	.13	.33	.14	.34
Higher education	1.37	(.51)	.87	(.10)	.32	(.06)	.36	(.05)
	.01	.08	.06	.23	.13	.34	.11	.31
<u>Industry</u>								
Agriculture	-.65	(.15)	-.39	(.07)	-.04	(.06)	-.05	(.05)
	.26	.44	.13	.34	.08	.27	.09	.28
Energy, steel, machine manufacture	0		0		0		0	
Chemicals, electronics, construction	-.08	(.14)	-.09	(.06)	-.03	(.04)	-.003	(.04)
	.21	.41	.26	.44	.29	.45	.28	.45
Textiles, commerce	-.05	(.15)	-.18	(.07)	-.07	(.05)	-.07	(.05)
	.18	.39	.15	.36	.13	.34	.12	.32
Service industry	-.10	(.15)	-.21	(.07)	-.09	(.04)	-.10	(.04)
	.19	.40	.27	.44	.31	.46	.36	.48
Missing	-.51	(.27)	-.10	(.27)	-.15	(.15)	-.07	(.28)
	.03	.17	.01	.08	.01	.10	.002	.04
Parent	-.01	(.12)	.01	(.06)	-.01	(.04)	.01	(.03)
	.13	.34	.11	.31	.19	.39	.26	.44
Full time work	.10	(.18)	.04	(.12)	.05	(.06)	.18	(.05)
	.87	.34	.97	.18	.94	.24	.93	.25
No. of observations	444		536		527		528	
R <sup>2</sup>	19.3 %		28.1%		16.4%		21.7%	

**Appendix Table B. Semi-logarithmic models of net earnings at the end of 1989. Unstandardized coefficients. Standard errors in ( ). Means and standard deviations in *italics*.**

<u>Independent variables</u>	<u>1929-31 Cohort</u>		<u>1939-41 Cohort</u>		<u>1951-53 Cohort</u>		<u>1959-61 Cohort</u>	
<i>Mean ln(net earnings)</i>	6.82	<i>.50</i>	6.92	<i>.37</i>	6.95	<i>.37</i>	6.90	<i>.35</i>
Constant	6.79	(.14)	7.01	(.11)	7.02	(.11)	7.06	(.11)
Sex	-.31	(.05)	-.23	(.03)	-.24	(.03)	-.26	(.03)
	1.42	<i>.494</i>	1.48	<i>.50</i>	1.48	<i>.50</i>	1.53	<i>.50</i>
<u>Highest occupational training completed</u>								
None	0		0		0		0	
Skilled	.08	(.05)	.07	(.05)	-.01	(.07)	-.03	(.06)
	<i>.47</i>	<i>.50</i>	<i>.57</i>	<i>.50</i>	<i>.56</i>	<i>.50</i>	<i>.64</i>	<i>.48</i>
Tech college degree	.40	(.07)	.26	(.06)	.18	(.07)	.08	(.07)
	<i>.17</i>	<i>.37</i>	<i>.23</i>	<i>.42</i>	<i>.24</i>	<i>.43</i>	<i>.18</i>	<i>.38</i>
Higher education	.52	(.08)	.32	(.07)	.26	(.08)	.27	(.08)
	<i>.11</i>	<i>.31</i>	<i>.10</i>	<i>.30</i>	<i>.15</i>	<i>.36</i>	<i>.11</i>	<i>.32</i>
<u>Industry</u>								
Agriculture	-.13	(.07)	-.20	(.06)	-.12	(.06)	-.02	(.06)
	<i>.15</i>	<i>.36</i>	<i>.11</i>	<i>.31</i>	<i>.11</i>	<i>.31</i>	<i>.11</i>	<i>.31</i>
Energy, steel, machine manufacture	0		0		0		0	
Chemicals, electronics, construction	.00	(.06)	.00	(.05)	.01	(.05)	-.04	(.05)
	<i>.20</i>	<i>.40</i>	<i>.20</i>	<i>.40</i>	<i>.22</i>	<i>.42</i>	<i>.24</i>	<i>.42</i>
Textiles, commerce	.03	(.07)	-.13	(.05)	-.07	(.06)	.07	(.07)
	<i>.13</i>	<i>.34</i>	<i>.10</i>	<i>.30</i>	<i>.11</i>	<i>.32</i>	<i>.08</i>	<i>.28</i>
Service industry	.03	(.06)	.05	(.04)	.02	(.04)	.00	(.05)
	<i>.32</i>	<i>.47</i>	<i>.37</i>	<i>.48</i>	<i>.35</i>	<i>.48</i>	<i>.38</i>	<i>.49</i>
Missing	.07	(.18)	.17	(.11)	.01	(.10)	-.27	(.13)
	<i>.01</i>	<i>.12</i>	<i>.02</i>	<i>.13</i>	<i>.02</i>	<i>.15</i>	<i>.02</i>	<i>.12</i>
<u>Labor force experience</u>								
Full time in years	.002	(.002)	.007	(.003)	.009	(.005)	.000	(.007)
	<i>35.25</i>	<i>10.91</i>	<i>26.40</i>	<i>8.32</i>	<i>14.87</i>	<i>4.93</i>	<i>7.72</i>	<i>2.89</i>
No. of children	-.01	(.01)	-.01	(.02)	.00	(.02)	-.03	(.02)
	<i>2.46</i>	<i>1.46</i>	<i>2.01</i>	<i>.92</i>	<i>1.86</i>	<i>.82</i>	<i>1.76</i>	<i>.71</i>
Full time work	.27	(.10)	.40	(.08)	.40	(.07)	.30	(.06)
	<i>.87</i>	<i>.34</i>	<i>.88</i>	<i>.32</i>	<i>.89</i>	<i>.32</i>	<i>.90</i>	<i>.30</i>
No. of observations	372		444		448		383	
R <sup>2</sup>	41.3%		34.9%		32.5%		24.6%	

## Bisherige Veröffentlichungen des Projekts

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the 1990s, the number of people in the world who are under 15 years of age has increased from 1.1 billion to 1.3 billion, and the number of people aged 65 and over has increased from 0.2 billion to 0.4 billion (United Nations 2002).

There are a number of reasons for the increase in the number of young people in the world. One of the main reasons is the high birth rate in developing countries. In many of these countries, the birth rate is still high, and the death rate is low, which leads to a high population growth rate. Another reason is the migration of young people from rural areas to urban areas in search of better opportunities.

The increase in the number of young people in the world has led to a number of challenges. One of the main challenges is the need for more jobs and opportunities for young people. In many developing countries, the economy is not growing fast enough to create enough jobs for the young population. This has led to a high level of unemployment and underemployment among young people.

Another challenge is the need for more education and training for young people. In many developing countries, the quality of education is low, and many young people do not have the skills and knowledge needed to find jobs. This has led to a high level of illiteracy and a lack of skills among young people.

The increase in the number of young people in the world has also led to a number of opportunities. One of the main opportunities is the need for more investment in young people. In many developing countries, the government and private sector are investing more in young people, which has led to a number of new opportunities for young people.

Another opportunity is the need for more social services for young people. In many developing countries, the government and private sector are providing more social services for young people, which has led to a number of new opportunities for young people.

The increase in the number of young people in the world has led to a number of challenges and opportunities. It is important for the world to address these challenges and take advantage of these opportunities. This can be done by investing more in young people, providing more education and training, and providing more social services.

There are a number of ways to address these challenges and take advantage of these opportunities. One way is to invest more in young people. This can be done by providing more education and training, and providing more social services.

Another way is to provide more education and training for young people. This can be done by improving the quality of education, and providing more opportunities for young people to receive education and training.

The increase in the number of young people in the world is a challenge and an opportunity. It is important for the world to address these challenges and take advantage of these opportunities. This can be done by investing more in young people, providing more education and training, and providing more social services.

