

Preliminary and incomplete

Firm closures and child outcomes

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Abstract: Using matched employer-employee data from Norway, we analyze the effects of worker displacement in 1986-87 on labour market outcomes of their children in 1999-2001. More than 90,000 father-child pairs are analyzed, and the effects of displacement on children's earnings and labour force attachment are estimated. Preliminary results indicate that firm closures do have negative effects on earnings and employment of those affected. As in previous Scandinavian studies, the intergenerational earnings elasticities are fairly low compared to those found in the US and UK. We find no significant effects of fathers being displaced when children are 13-16 on their outcomes at age 26-30. This is contrary to the recent study of Oreopolous et al. (2005) on Canadian data.

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1 Introduction and background

It is well established that the economic success of children is to some extent related to the incomes of their parents, see Solon (1999) for an overview. The positive correlation between parents' and children's earnings is consistent with a model where utility-maximizing families invest a part of their income in the human capital of children; see Becker and Thomes (1979, 1986). However, as noted by Goldberger (1989), the empirical observation of father-child correlations may also be explained without appealing to utility maximization. More recently, Grawe (2004) notes that observed non-linearities in intergenerational earnings correlations do not necessarily support the credit constraints that seem necessary for the story of earnings transmission through investment in education. Thus it may be argued that the mechanisms behind intergenerational mobility (or lack of such) are not fully understood. Accordingly, recent empirical contributions to the literature aspire to disentangle those mechanisms.

Oreopolous et al. (2005) note that it is just as likely that differences in income reflect the passing on of parental characteristics, as income differences leading to differences in monetary investment in children. They go on to argue that comparing outcomes of children from families with different income levels may overstate the importance of economic resources, as high income parents also may have high motivation and ability that affect outcomes of the next generation. Their approach is to use firm closures in Canada to indicate exogenous income shocks. They find that worker displacement has detrimental effects on children's labour market outcomes. This finding is taken as evidence that, in deed, family income is an important factor in determining the economic outcome of the children.

This paper applies a similar approach to investigate whether the same conclusion holds in a large sample of Norwegian father-child pairs. Previous research has found lower

intergenerational earnings correlations in non-Anglo-Saxon Europe, in particular Scandinavia, than in the US and UK, see Björklund and Jäntti (1997, 2000), Solon (2002), Bratberg et al. (2005).¹ On the other hand, Huttunen et al. (2006), using the same Norwegian data source as in the present study, find that worker displacement has negative effects, but mainly through employment effects. Rege et al. (2005) find that plant downsizing substantially increases permanent withdrawal from the labour force by increasing the disability entry rate of workers in the affected plants. Thus, despite the clear findings of Oreopoulos et al. (2005), it is not quite obvious what to expect in this study. Even though the intergenerational earnings correlations are low, parent income could have a causal effect, albeit small in size, and an exogenous income shock would help to identify such effects. If no such effect is found, it adds to the evidence that credit constraints are of less importance in Norway (and probably other Scandinavian countries) than in North America. Preliminary results indicate that the latter is the case. We find evidence that firm closures have negative effects on employment and to some extent on earnings. However, there is no statistically significant effect of fathers' displacement on their children's outcomes, neither earnings nor the probability of non-employment.

2 Data and empirical approach

The common approach in studies of intergenerational mobility is to run a regression of children's log earnings on a measure of their parents' earnings, often simply fathers' earnings. We augment this simple regression with a dummy that indicates that the father worked in a firm that closed down between 1986 and 1987. It is well known that using single year earnings of parents may seriously bias the estimates, see Solon (1992) and Zimmerman (1992), thus typically averages over several years are used. There is also a growing

¹ Previous research on Canadian data finds correlations closer to European results than Oreopoulos et al., a fact they attribute to their conditioning on stable workers before firm closings.

understanding that using child outcomes when they are too young may induce life cycle bias, see Haider and Solon (2006), Grawe (2006). We then face a trade-off: on the one hand we wish the children to be young enough to potentially be affected by a shock to family economy and employment; on the other hand we want to avoid observing their own labour market outcomes at a too early stage in their career.

Our data source is a full population database of matched employer-employee data, constructed by merging several administrative registers. The core is individual background information for the years 1986-2002, moreover, earnings based on tax records are available from 1967 on. For individuals in the labour force, the data contains identifiers that make it possible to merge firm information at the plant level. For our purposes, it is convenient that this information includes the date a job started. Furthermore, it is possible to link parents and children by personal identifiers. See Møen et al. (2003) for a closer account of the data.

In the present study, we wish to construct a sample of fathers with a stable attachment to the labour force, who were susceptible to a plant close-down, with children young enough to be affected by this possible event, and old enough to be observed with earnings in the sample period. These concerns lead us to extract the following sample. We include men born 1930-1950, with children born 1971-1974. Furthermore, fathers are only included if they have a valid plant identifier in 1986 and tenure with the plant since at least 1983, and if that plant had at least five employees.

We choose 1986 as the base year and classify a father as displaced if the plant has closed down (the plant id has disappeared in the data) in 1987. The data are updated by the end of May, thus our treatment group has fathers whose plant closed down between May 31, 1986

and May 31, 1987. At the time of this potential incident, children were 12- 16 years old. The children are observed as late as possible in our data: in 1999-2001 when they are 25-31 years old. In the father-child regressions, we condition on fathers' earnings measured as the average of the years 1982-85. The year 1986 is avoided, as the plant may have closed down sometime after May 31 in that year. We also explore the effects of displacement on fathers' earnings 1987-1984. As it is known from previous Norwegian studies (see Huttunen & al, 2006) that the employment effects of displacement may be more important than the earnings effects, for the same years we also look at months of recorded unemployment and an indicator non-employment, defined as having no plant identifier in a given year.

For children, we consider two outcomes: average earnings 1999-2001, and the probability of non-employment in 2001. Non-employment is defined in the same way as for fathers: by having no valid plant identifier.² As children are still of an age where a certain fraction may be undertaking education, we condition on not being in that category. This gives us a sample of 90,878 father-child pairs.

To sum up, the analysis is based on equations of the type

$$Y_i = \alpha + \beta \bar{Y}_i^{f82-85} + \delta D_i^{f86} + \theta X_i + u_i,$$

where Y_i is either average log earnings of the child 1999-2001, or a dummy variable indicating non-employment in 2001, and \bar{Y}_i^{f82-85} is fathers' average log earnings 1982-1985. D_i indicates the father being displaced in 1986, and X_i is a vector of dummy variables controlling for gender and birth cohort of the child, and father's industry in 1986, before

² Recorded unemployment is only available in our data until 1998, we therefore do not use this outcome.

potential displacement. When Y_i is earnings, β is the familiar intergenerational elasticity. The earnings-earnings equation is estimated by OLS, and the non-employment equation by probit; marginal effects are reported.

Table 1 shows summary statistics for fathers and children. (Table 1 TBA)

3 Results³

We start by inspecting descriptive evidence on the effects of displacements on fathers' outcomes. Figure 1 shows earnings trajectories of displaced and non-displaced workers. We see that displaced workers suffer an earnings drop as expected, but fairly moderate. Both groups experience the same negative development in the late eighties, probably reflecting the economic downturn at that time. However the gap widens rather than closes over time, and seven year after displacement average earnings of displaced workers are 94.3% of pre-displacement earnings, whereas average earnings of non-displaced workers are 99.3% of 1986 earnings.

Figure 2 plots shares out of non-employment (i.e., without plant identifiers). Here, the effect of experiencing a closure is clearer. In 1988, the non-employment share is almost 5% higher in the displacement group. The gap fluctuates, but is still about 5% in 1994, even though non-employment increases in both groups. Figure 3 shows months of unemployment: The picture here is more noisy (the displacement group is fairly small) but except in 1989 and 1994, unemployment is higher among displaced workers.

³ All the results in this section are preliminary.

It could be the case that there is systematic selection of workers with low earnings capabilities into firms that are in danger of closing down. As a robustness check against that possibility, we ran a regression of fathers' average earnings 1982-85 on the closure dummy and a set of industry dummies. The coefficient on the closure dummy came out as insignificant (with a t-value of 0.42).

(TBA: more robustness checks for exogeneity of the employment shock.)

Table 2 shows results from regressing child outcomes on fathers' earnings. The first column shows the intergenerational earnings elasticity without the displacement dummy, column 2 adds this dummy, and column 3 includes industry controls. We first note that the elasticity is fairly low at 0.127, even for individuals in their late twenties – Oreopolous et al. report 0.383 for individuals of comparable age.⁴ Column 2 shows that there is a negative but insignificant effect of displacement on offspring's earnings. Controlling for fathers' industry in column 3 increases the earnings elasticity somewhat but there is still no significant effect of firm closure. This is contrary to Oreopolous et al., who find a much larger and significant effect.

Columns 3-6 repeat the same exercise for the risk of being out of employment in 2001 (individuals under education are excluded from these as from the previous regressions). We note that there is a negative effect of fathers' earnings on this probability, in other words children of high-income fathers have less risk of being out of the labour force than children of low-earners. However, there is no effect of father displacement on the non-employment probability.

⁴ Bratberg et al. (2005) find even lower elasticities at age 30 for the Norwegian 1965-cohort. The somewhat higher elasticity here could be due to the conditioning on stable workers.

4 Concluding remarks

Using matched employer-employee data from Norway, we analyse the effects of worker displacement due to firm closures in 1986-87 on children's earnings and labour force attachment in 1999-2001 for more than 90,000 father-child pairs. Seven years after displacement, average earnings of those affected are still below their pre-closure earnings. There is also a gap between displaced and non-displaced workers in the share of non-employment. However, it turns out that this has no discernible effect on their children when they are in their late twenties: regressing an indicator of this event, together with fathers' earnings and other controls, on children's earnings or non-employment yields no effect. This result deviates from the findings of Oreopolous et al. (2005), who find clear effects using similar Canadian data. Why is this so? First, the intergenerational earnings elasticity is low, a fact that may be attributed both to the generally high intergenerational earnings mobility in Scandinavia and the relative young age when children in our sample is observed. Second, the actual transmission mechanism between generations is not well known. Usually economists attribute parent-child correlations in part to investments in education, and in part to unobservable "nature and nurture". Education in Norway is free at all levels, and the State provides student loans and scholarships with favourable conditions. Thus, financial constraints are less important in educational choices. Third, the returns to education in Norway are low compared to most other countries. – Even so, it could be the case that an employment shock to the family affected the cognitive environment of children or youths and thus had a "nurture effect" that could show up at a later age. However, our results do not indicate any such effects.

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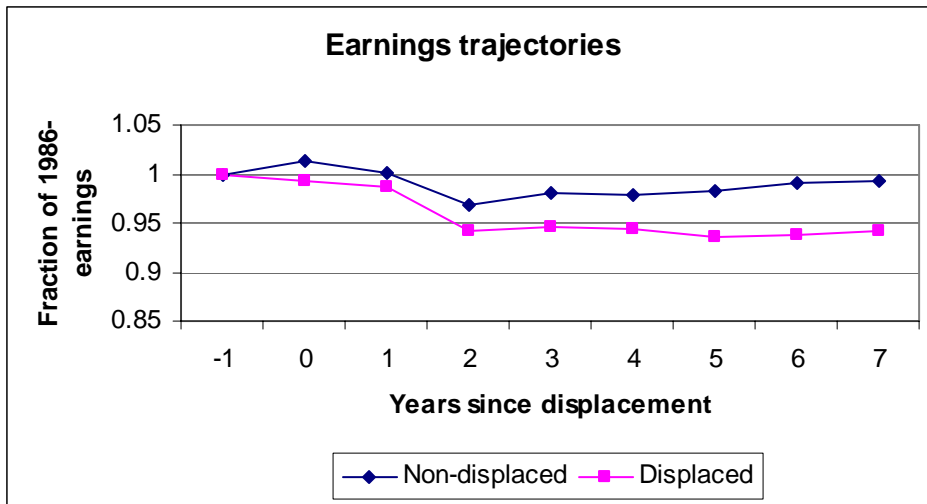


Figure 1

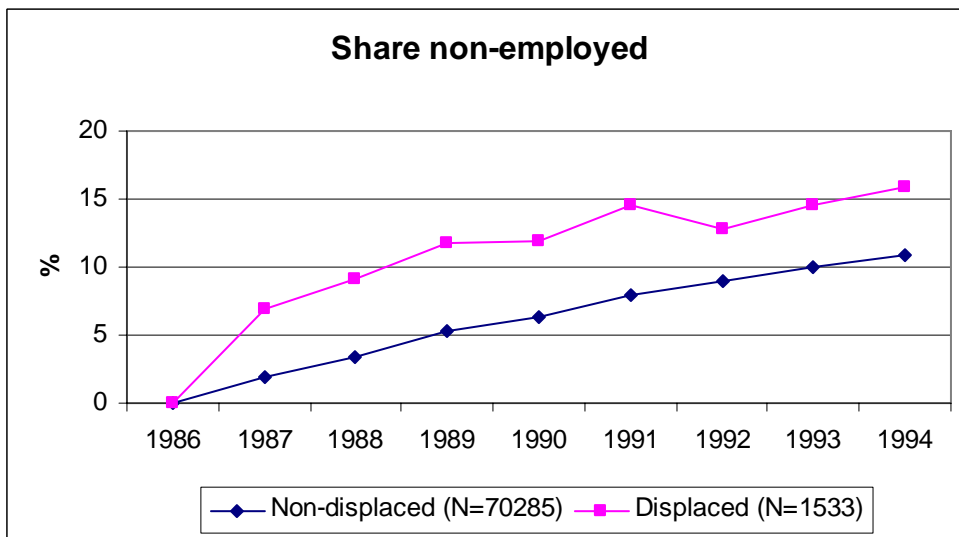


Figure 2

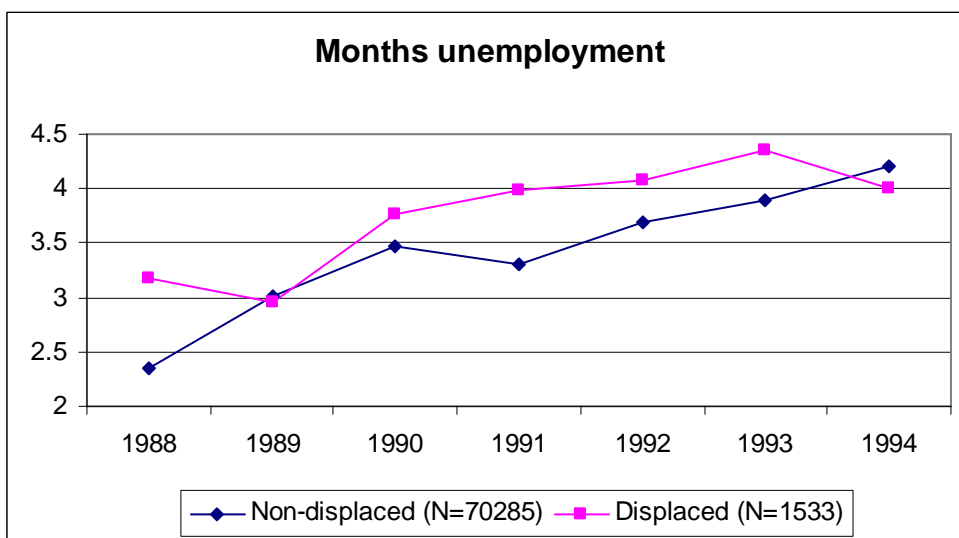


Figure 3

Table 1 Summary statistics
TBA

Table 2 Effects of father's displacement on children born 1971-1974

	Log earnings 1999- 2001	Log earnings 1999- 2001	Log earnings 1999- 2001	Non- employed 2001	Non- employed 2001	Non- employed 2001
Father's log earnings 1982-85	0.127 [0.009]	0.127 [0.009]	0.134 [0.009]	-0.016 [0.004]	-0.016 [0.004]	-0.019 [0.004]
Father displaced 1987		-0.019 [0.017]	-0.014 [0.018]		0.000 [0.008]	0.001 [0.008]
Industry controls	no	no	yes	no	no	yes
Observations	90878	90878	90878	88745	88745	88745
Displaced	2624	2624	2624	2554	2554	2554
R2/pseudoR2	0.06	0.06	0.06	0.01	0.01	0.01

Note: Log earnings for fathers and children age adjusted and averaged. Controls for gender and birth cohorts. Log earnings regressions: OLS; non-employment: probit marginal effects. Industry controls: dummies for first digit in ISIC code of fathers' employer in 1986. Standard errors in brackets