



The effect of involuntary maternal job loss on children's behaviour and non-cognitive skills[☆]



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HIGHLIGHTS

- Spillover effects of involuntary maternal job loss on child outcomes are addressed.
- Socio-emotional behaviour and locus of control are examined as child outcomes.
- Non-cognitive skills of pre-schoolers and adolescents are negatively affected.
- Life satisfaction mediates job loss effect on child outcomes in preschool sample.

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ABSTRACT

This paper uses propensity score methods to analyse the effect of involuntary maternal job loss on children's non-cognitive skills. My analyses are based on a rich and nationwide random sample, the German Socio-Economic Panel Study (SOEP) that includes information about maternal job loss and child behaviour and non-cognitive skills, in addition to a rich conditioning set. The results show that maternal job loss increases preschool children's socio-behavioural problems and decreases adolescents' belief in self-determination.

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1. Introduction

Job loss not only leads to a considerable fall in income, it also affects the health and well-being of individuals; possibly even

leading to divorce (see for example the studies by Charles and Stephens, 2004; Eliason and Storrie, 2009; Marcus, 2014; Rege et al., 2009). Studies also show that it has spillover effects on partners (Marcus, 2013) and children (Huff-Stevens and Schaller, 2011; Kalil and Ziol-Guest, 2005, 2008; Lindo, 2011; Oreopoulos et al., 2008; Rege et al., 2011). This paper contributes to the literature on spillover effects of job loss by analysing the impact of involuntary maternal job loss on children's behaviour and non-cognitive skills. The paper also contributes to our understanding of factors that impact children's development of behaviour and non-cognitive skills (Cunha and Heckman, 2007; Cunha et al., 2006, 2010).

This paper focuses on non-cognitive skills during preschool ages and during adolescence, as an increasing number of economic studies suggest that non-cognitive skills are important predictors of later educational achievements, health outcomes, and labour market

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success (Blanden et al., 2007; Carneiro et al., 2007; Cobb-Clark and Schurer, 2013; Currie and Stabile, 2006; Heckman et al., 2013; Prevo and ter Weel, 2015). Studies show that non-cognitive skills impact cognitive skills, but not vice versa, and that these non-cognitive skills are as important as cognitive skills regarding school performance (Cunha and Heckman, 2007; Heckman et al., 2006). However, less is known about how non-cognitive skills develop if a negative shock occurs to the family environment. Yet, this is particularly relevant, since the family is likely even more important than schools or other institutions for the development of skills (Carneiro and Heckman, 2003). The few existing studies on parental job loss and child outcomes look at children's academic performance, likelihood of grade repetition, and health, or consider earnings for adult children (Huff-Stevens and Schaller, 2011; Kalil and Ziol-Guest, 2005, 2008; Lindo, 2011; Oreopoulos et al., 2008; Rege et al., 2011).

It is plausible that effects of maternal job loss vary with child age and my analyses therefore exploit both a preschool (child age 5/6) and an adolescence/early adulthood (age 17) sample. The preschool sample allows for analyses of child behaviour as measured by the socio-emotional behaviour based on a modified version of the Strength and Difficulties Questionnaire (SDQ) developed by Goodman (1997), which assesses children's socio-emotional regulation. The adolescence sample, on the other hand, includes information about Locus of Control, which is based on a concept developed by Rotter (1966) and describes to what extent a person believes in self-determination or fate. Both ages mark important phases: Age five/six marks the transition to school in Germany while age 17 is that time at which students make decisions about further education.

It is *ex ante* unclear how maternal job loss affects the well-being of the children of the household. There may be negative as well as positive effects; parental stress caused by the job loss may transmit to the children just as an income loss could lead to deterioration of the family environment. Involuntary maternal job loss may increase the amount of time the mother spends with her children and depending on the quality of that interaction, this may lead to both worse or improved child outcomes.

My analyses consider the effects of job loss stemming from plant closures and dismissals. My main analyses combine these two types of job loss into one measure of job loss but robustness analyses acknowledge that their impact on families may vary. Results are based on propensity score matching while drawing on a rich data set informative about the characteristics of families in which women experience job loss and child outcomes. The data used come from the German Socio-Economic Panel Study (SOEP). The SOEP contains a particularly rich set of variables on non-cognitive skills, as well as an extensive set of variables regarding household, parental and child characteristics that is well suited for propensity score methods and its requirement of selection on observables. In addition, with SOEP data, specific mechanisms behind the effect of maternal job loss on children's behaviour and non-cognitive skills can be examined. The SOEP data comprise information on life satisfaction and household income, as well as on personality traits, which facilitates examining possible mediators of the effect of maternal job loss on children's skills.

This study shows that involuntary maternal job loss negatively affects the non-cognitive skills of children. A mother's involuntary job loss increases a preschool child's socio-emotional problems by 51% of a standard deviation and decreases adolescents' internal locus of control by 26% of a standard deviation. The results also show that job loss decreases the life satisfaction of mothers with preschool children and significantly affects the household income in the adolescence sample. Estimating the effect of maternal job loss on child outcomes including these potential channels decreases the size and the significance of the effect on preschool children's socio-emotional behaviour but not on adolescents' internal locus of control.

The remainder of the paper is structured as follows: Section 2 discusses the related literature and theoretical links of maternal job loss and children's non-cognitive skills. Section 3 outlines the empirical strategy and in Section 4, the data set is described. In Section 5, the estimation results are discussed. Section 6 presents some robustness tests before Section 7 concludes.

2. Linking maternal job loss and children's non-cognitive skills

As discussed above, the direction of the effects of maternal job loss on child behaviour and non-cognitive skills is not obvious. The skill formation framework proposed by Cunha and Heckman (2007) suggests that children's skills are produced with parental inputs of time and goods. There are likely dynamic complementarities in skills, i.e. skills acquired in one period depend on those of previous periods, which again are dependent on home and school inputs as well as parental ability (Todd and Wolpin, 2007). Throughout the skill formation process, timing is an important aspect, as inputs impact human capital production differently across childhood stages. In such a framework, a household with a working mother would have less time available to distribute between child and employment than would a household with a non-working mother. Mothers who work full-time or part-time compared to mothers who do not work have different possibilities to divide their time. This production function may, thus, be affected by maternal job loss, as such a disruption in the household could be the source of stress, which may impede child development. The following potential channels of maternal job loss are discussed in this paper: A change in life satisfaction, household income, personality traits, and quality of time.

The literature concerned with the relationship between life satisfaction and unemployment (see for example the work by Clark et al., 2010 or Knabe et al., 2010) finds that job loss (as well as the unemployment level in general) is likely to decrease life satisfaction. This may, in turn, deteriorate the relationship between the mother and her child.

An income loss after job loss might be another potential source of instability at home. Tension due to decreased financial resources between parents could spread to their children, leading to an unstable temper of children affecting their relationship with their peers. In addition, maternal job loss also reduces future family income and might impact on children's development through a reduction in financial resources (e.g. Baum, 2003, Rege et al., 2011). But, because German mothers are often second earners, their job loss might impact the financial situation of the household less than if the father had lost his job. Further, maternal income loss can often be compensated with her partner's income, assuming dual income; if a single parent loses her job, the effect will be much greater. In addition to their partners' income, individuals receive generous unemployment benefits in Germany when compared to the US, but not to Scandinavian countries. For example, an unemployed person who has a child receives 67% of their previous income as unemployment insurance (UI).¹ Furthermore, they are entitled to tax-financed unemployment assistance after UI payments expire or if they fall below a certain threshold. Thus, an income loss as potential mediator of maternal job loss might be less likely. It is argued that mothers who lose their job may be stressed for reasons other than income reduction.

Job loss might also lead to direct changes in children's non-cognitive skills, as it changes maternal characteristics measured by personality traits such as neuroticism (or emotional stability if coded reversely) and internal locus of control. A mother may, for example, regard job loss as something that has happened to her

¹ Length of payment depends on the duration of their own contribution to UI (e.g. Caliendo et al., 2013).

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