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Behavioral Response of Non-Resident Parents to Child Support Obligations: Evidence From SOEP

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Abstract

The present paper investigates how parents responsible for child maintenance payments have responded to changes in the amount of obligations. The potential endogeneity of child support obligations is addressed by using SOEP panel data from 1985-2013 and applying individual FE-IV models. Results for parents younger than 50 years old show that a €10 increase in monthly child support obligations decreases the likelihood of having an additional child by about 0.39 percentage points (about 3% at the sample mean). Furthermore, an increase in financial obligations does not have an impact on the likelihood of cohabiting with a new partner or on hours spent with children entitled to child support. There is only weak evidence of a positive (re)marriage incentive. There seems to be no adjustment in the parent's labor supply. To my knowledge, the present investigation is the first causal analysis of the behavioral response of non-resident parents to child support obligations in Germany.

JEL classification: J12, J13, J16, K36

Key words: Child support; child support policy; non-resident parents; labor supply; fertility; child-care

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1. Introduction

Regulations regarding child maintenance concern the liable parent, the dependent children, the parent living with the entitled child, and the taxpayer. As pointed out by Altman (2003, pp. 173 et seq.), child support is a distributional issue that leads to ongoing social and political disputes. Depending on the interests involved, it is claimed that the level of maintenance is either too high or too low.¹ Yet, the function of child support seems to be straightforward: It should meet the best interests of the child without burdening the taxpayer and distribute the child-rearing costs among parents fairly (Altman 2003, p. 174).^{2,3}

To date, researchers have made little effort to understand the behavior of German parents liable for child support payments. The vast majority of studies in the German context focus on the problems of child support payments, usually from the perspective of single mothers residing with their children (see, e.g., Federal Ministry for Youth, Family, Women, and Health 1977; Napp-Peters 1985; Postler et al. 1988; Vaskovics et al. 1994; Großmann 1996; Proksch 2001; forsa 2002; Allensbach Institute 2008; Hartmann 2014). The present study tries to fill this research gap by empirically investigating if changes in child support obligations have an impact on the behavior of parents liable for child support. To this end, I look at three different aspects of post-separation life: Labor market behavior (including working hours and the likelihood of working full time or belonging to the labor force), time spent on childcare, and family formation. The latter aspect is captured by examining the likelihood of (re)marrying or cohabiting with a new partner, and of having subsequent children. Since the amount of obligations in Germany is determined by the Higher Regional Courts (Klingelhöffer 1994), which do not focus on the incentive effect of child support on the non-resident par-

¹ On the one hand, it is argued that low maintenance leads to child poverty (Breithaupt 2012). On the other hand, it is alleged that the payment financially overburdens liable parents. Associations such as *Separated Fathers* appreciate proposals that offer some financial relief for parents liable for child support. Barley (2017), the Federal Minister for Families, for example, suggested that some of the payments for non-resident children might become tax-deductible which was very well received by these associations (Seith 2017; Trennungsväter e. V. 2017, accessed on 02.19.2018).

² In the case of separation or divorce, there are two kinds of maintenance regarding (minor) children: One parent provides maintenance in the form of food, provision of housing, etc. (§1606 (3) Civil Code), the other parent compensates in the form of monthly payments (§1612 (1) Civil Code).

³ A look at the system of child support in Germany reveals that none of the involved parties is satisfied. A high proportion of maintenance-receiving parents claim to receive inadequate child support or to receive no financial support from the other parent (see, e.g., forsa 2002, pp. 22, 109 et seq.). In the case of missing or insufficient maintenance, the taxpayer steps in and provides advance payments. In 2014, €283 million was spent at the federal layer on the maintenance advance, while the individual states spent an additional €566 million (German Bundestag 2016, p. 3). The recourse rates, i.e. the ratio of total government expenditure to the repayments of maintenance debtors, averaged between 11.0% and 31.4% for 2004-2014, depending on the state (Audit Office Baden-Wuerttemberg 2016, p. 161). This means that the taxpayer is financially burdened by maintenance advances and the costs of recourse. If one believes the self-reports of the parents living with the children, the needs of the children are not covered by the amount of child support actually paid. However, the absolute majority of liable parents indicate that they pay enough and have never failed to pay on time. The divergence in reporting regarding the amount of child support is also well documented for German parents (see, e.g., Großmann 1996; forsa 2002, pp. 23, 103).

ents,⁴ an empirical investigation of these effects is overdue and necessary. If these parents respond to higher maintenance with a decline in their labor supply, this might lead to lower tax revenue and ultimately to higher expenses for the taxpayer and vice versa. Another policy-relevant question is whether increased child support obligations reduce parents' time spent with their non-resident children. If so, this might have a harmful effect on children's development (see, e.g., Suh et al. 2016; Ibrahim et al. 2017). Whether a change in fertility decisions is a desirable side effect, is open to debate. It was never a declared policy goal or an explicit function of child support regulations. The same applies to other family formation decisions, namely (re)marriage and cohabitation. Thus, the present study helps us to understand whether mandated payments for children as laid down by the courts represent a channel through which lawmakers and designers of child-maintenance guidelines may affect various aspects of parents' behavior.

In general, establishing a causal relationship between child maintenance and parents' behavior is challenging. Helpful in this context, Higher Regional Courts establish the level of obligations in child support tables and adjust them over time. This means that the variation of the obligations is driven by factors beyond the control of parents, with two exceptions. The non-resident parent can only change the amount due by adjusting his/her own income and changing his/her own employment situation. Therefore, I construct an instrument for the potentially endogenous child support obligations based on a parent's income and employment status *before* separation from his/her family. In particular, I use changes in the maintenance laws, varying tables/guidelines issued by the Higher Regional Courts, children's age, and parents' *pre-separation* employment status and income to simulate a time-varying IV. Thus, I exploit the exogenous variation in child support obligations but do not incorporate the change in liable parents' labor market behavior after the separation from the family. This approach is borrowed from Rossin-Slater and Wüst (2017).

Employing the SOEP data and estimating fixed-effects instrumental variable (FE-IV) models, I find only weak evidence for positive marriage incentives since the coefficient of interest is only statistically significant in some specifications. Further, my results for parents at age 50 and younger suggest that an increase in child support obligations might have negative fertility incentives: A €10 increase in a parent's monthly child support obligation might reduce her/his likelihood of having an additional child by about 0.39 percentage points (about 3% at the sample mean). An increase in obligation does not affect time spent on childcare. Furthermore, obligations have no impact on parents' labor

⁴ Obviously, the competent courts consider different minimum personal needs for employed and non-employed liable parents as sufficient work incentives.

supply, i.e., on working hours or the probability to work full-time or belonging to the labor force. To my knowledge, this study is the first attempt to capture a causal effect of child support obligations on the post-separation behavior of German parents. It complements the research into child maintenance by exploiting exogenous variation in obligations and studying the reduced-form impacts of these mandated payments on the behavior of liable parents.

This paper is structured as follows. Section 2 briefly introduces related literature on this topic. Section 3 explains the German child support system. Section 5 describes the data. The econometric specification is introduced in Section 4. The empirical results and additional robustness checks are presented in Section 6. Section 7 revisits the stated hypotheses and finally concludes.

2. Related literature

Empirical papers studying the improvements in enforcement of child support in the U.S. find a reduced non-marital fertility among women (see, e.g., Case 1998; Huang 2002; Plotnick et al. 2004). The main purpose of enforcing child support is to improve its collection from liable parents, which in turn increases the cost of having a non-resident child for some parents (Tannenbaum 2015, p. 2). The mechanisms through which the relation between child support enforcement and fertility is established are not explored. However, the authors explain their results by enforcement's deterrent effect on men's fertility that is probably stronger than the potentially positive effect on the fertility of women (see, e.g., Huang 2002, p. 639). Thus, a changing contraceptive behavior or strategy chosen by men is presented as a plausible explanation (Case 1998, pp. 192 et seq.; Huang 2002, p. 295).

Furthermore, Plotnick et al. (2006) demonstrate that more stringent child support enforcement is associated with lower non-marital childbearing among young women, but not among women older than 25 years of age. Aizer and McLanahan (2006) find that stronger enforcement leads to fewer births among less educated single women. Again, the authors explain this finding by men's decision to have fewer non-marital children. Those who do become fathers tend to have more educated partners.

Bloom et al. (1996), who consider remarried men with non-marital children entitled to child support, find no effect of stronger child support enforcement on marital fertility in the U.S. In Denmark, where liable parents can reduce their obligations for children outside the household by having more biological children, child support obligations increase the fertility among remarried fathers but not among non-remarried (Rossin-Slater and Wüst 2017, pp. 20 et seq.).

Overall, fathers seem to respond to maintenance regulations or enforcement by adjusting their non-marital fertility (see Table 1). Further, some age and educational groups of women, and therefore possibly men, seem to be more affected by child support (enforcement) than others (Plotnick et al. 2006; Aizer and McLanahan 2006). As for marital fertility, the evidence is scarce and ambiguous.

Table 1: Literature overview: Relationship between child support and fathers' fertility

Reference	Country	Source of variation	Outcome	Method	Results
Bloom et al. 1996	U.S.	Cross-state variation in the level of CSE	Likelihood of fertility of remarried men	Probit models	No impact on the likelihood of subsequent fertility (becoming a stepfather and fathering new children)
Case 1998	U.S.	Variation within states over time in CSE measures	Out-of-wedlock birth rates of 15-44 years old women	IV models	Passage of CSE legislation → reduction in non-marital childbearing (2 yrs later)
Huang 2002	U.S.	State-level variation in child support legislative vigor	First fertility decision of 14-41 years old women	Multinomial logit models	State with strong CSE and CS expenditure ↔ reduction in the probability of having a non-marital birth than marital birth, and increase the probability of marital birth over no birth
Plotnick et al. 2004	U.S.	Cross-state variation in CSE	Teenage premarital childbearing	(Multinomial) logit method	States with higher rates of paternity establishment ↔ reduced likelihood to become an unwed mother
Plotnick et al. 2006	U.S.	State-level variation in CSE	Non-marital childbearing of 15-44 years old women	Discrete time hazard models	Women younger than 25 years of age who lived in states with more effective CSE were less likely to have non-marital births
Aizer and McLanahan 2006	U.S.	Within-state variation in CSE and CS expenditures	Out-of-wedlock fertility decisions of women	Within-state difference-in-difference models	Increase in CS expenditures → a decline in non-marital fertility relative to marital fertility for women with/without a high school degree
Rossin-Slater and Wüst 2017	DN	Across fathers variation in CS obligations	Fathers' likelihood to have more children after separation	IV models	Higher CS obligations increase the fertility among remarried fathers but not among non-remarried

Notes: CSE stands for child support enforcement, CS for child support. Bloom et al. (1996) argue that the direct effect of child support enforcement on the likelihood of subsequent fertility allows them to use data without information on actual child support payments. The authors assume that stricter state policies increase the likelihood and amount of actual child support payments (Bloom et al. 1996, p. 8). In Denmark, liable parents can reduce their obligations for children outside the household by having more biological children (Rossin-Slater and Wüst 2017, pp. 20 et seq.). Source: Own compilation

When considering outcomes like post-separation cohabitation or remarriage, the non-resident parents are usually not the focal point of analysis (e.g., Cancian and Meyer 2014; Kim et al. 2017). There is, however, some evidence for the impact of child support regulations on marital formation or

selection into marriage.⁵ Bloom et al. (1996), for example, find that stricter child support enforcement impedes remarriage among low-income fathers liable for child support in the U.S. Further, there is no evidence for an impact on the quality of marital matches (using the age, education, and income of the new spouse) in the remarriage market (Bloom et al. 1996, pp. 24 et seq.). Rossin-Slater and Wüst (2017), who study the behavior of Danish fathers after the separation from the family, on the other hand, do not find significant effects of child support obligations on subsequent re-partnering or remarriage.

Findings in regard to child support payments and father-child contact for the U.S. are inconclusive. Some studies show a positive relationship between child support payments and visitation by an absent father (see, e.g., Chambers 1979; Furstenberg et al. 1983; Seltzer et al. 1989; Seltzer 1991). Also, Peters et al. (2004) find that government policies aimed at child support collection increase visitation and contact between children and their non-resident fathers.⁶ In contrast, Veum (1993) finds that changes in child support have no impact on changes in visitation, and vice versa. He argues that the observed positive correlation in other studies is due to unmeasured characteristics of the parents.⁷ Also, Nepomnyaschy (2007) finds no significant relationship of father-child contact two years ago on current formal payment and a minor effect of paying two years ago on the likelihood of current contact at 0.10 level.⁸ There is also empirical evidence for a negative relationship between payments and father-child contact in the U.S.: Del Boca and Ribero (2001) show that mandatory child support transfers from the non-resident father result in the large reduction in time spent with his child.⁹

Rossin-Slater and Wüst (2017) find that Danish fathers reduce the contact with their children as

⁵ Tannenbaum (2015) finds that “shotgun” marriages following an unplanned pregnancy are less likely under stricter child support laws in the U.S. He argues that these laws force commitment and legal responsibility from men who father a child out of wedlock, that existed prior to the child-support era only in case of a marriage (Tannenbaum 2015, pp. 3, 45; Rossin-Slater 2017). In a recent paper Rossin-Slater (2017) demonstrates that the implementation of the in-hospital voluntary paternity establishment programs in the U.S. reduces parental marriage rates. Providing non-resident parents with legal rights and obligations functions as an alternative legal contract option to marriage (Rossin-Slater 2017, p. 127).

⁶ However, the sample used is restricted to never-married parents. The authors use data from the Survey of Income and Program Participation 1985-1997. About 55% of the sample is composed of African-American or Hispanic children, and about 28% of children were born to teenage mothers (Peters et al. 2004, p. 258).

⁷ As Veum (1993) points out, Chambers (1979), Pearson and Thoennes (1988), Seltzer et al. (1989) rely on data that is not nationally representative and cross-sectional. The samples tend to be small. Seltzer (1991) uses larger samples but also cross-sectional (Veum 1993, p. 233).

⁸ Nepomnyaschy (2007) uses the Fragile Families and Child Wellbeing study and estimates “cross-lagged effects models to identify the direction of causality between payments and contact”. The sample consists of never-married parents with young children (three years old). The author distinguishes between payments through the formal child support system and payments contributed voluntarily (Nepomnyaschy 2007, pp. 93, 108).

⁹ Del Boca and Ribero (2001) investigate the impact of ordering fathers to transfer 17% of their income to their ex-wives. The authors assume a perfect compliance. They restrict their sample to once legally married parents with one child and with positive amounts of visitation time, noncustodial parent incomes, and child support transfers. Del Boca and Ribero (2001) do not observe the actual visitation time. Therefore, they use the visitation schedule set in the final divorce stipulation (Del Boca and Ribero 2001, pp. 132 et seq.).

a result of increased child support obligations. However, having father-child contact is defined as living with the oldest child at least one year after parental separation (Rossin-Slater and Wüst 2017, pp. 4, 19).

The existing evidence on the labor supply of the fathers is also mainly limited to the U.S. setting (see Appendix A.1). The results are mixed: Klawitter (1994) finds no significant effects of child support on the earnings of divorced noncustodial fathers in the first few years following the award of child support in Wisconsin. Freeman and Waldfogel (1998) present few statistically significant results for child support enforcement on fathers' LFP and working hours. In an unpublished manuscript, Bitler (1998) finds that stronger child support enforcement may lead to an increase of noncustodial parents' working hours. However, the results were sensitive to model specification. Rossin-Slater and Wüst (2017) also find no significant effects of child support obligations on non-resident fathers' labor market outcomes in Denmark. In contrast, Holzer et al. (2005) and Cancian et al. (2013) show a negative impact of child support mandates on fathers' labor supply. Specifically, Holzer et al. (2005) focus on 16-34 year old black men with high school education or less and Cancian et al. (2013) on low-income fathers in Wisconsin. Rich et al. (2007) show that stricter child support enforcement is associated with fewer hours of informal employment among fathers combining work in the formal and informal sectors. The authors find little evidence that stronger enforcement is more generally associated with employment or hours in the regular sector.

I contribute to this strand of literature while focusing on German non-resident parents. I employ both individual FE and IV approaches in a unified framework to provide robust estimates of a causal relationship between child support obligations and parental post-separation behavior.

3. The German child support system

In general, maintenance obligations start from the birth of a child (VAMV 2012, p. 120). The obligation to maintain is independent of child custody (Drewes and Hollender 1985, p. 205; Borth 2011, p. 489).¹⁰

The child maintenance formula

Before going into details, it should first be noted that the amount of child support obligations faced by a non-resident parent depends on the following factors:

¹⁰For children whose parents are not married, the paternity must be established or recognized in order to claim maintenance. Upon request, the minimum maintenance for a child can be set at the same time in the case of a claim for paternity (VAMV 2012, p. 120).

- his/her allowable net income (monthly average of the last 12 months¹¹),
- his/her employment status,
- the number of the children entitled to maintenance,
- the age of these children,
- the regulations established by the courts in the child support table/guideline at the time t ,
and
- the amount of child benefit at the time t .

§1612a of the Civil Code regulates the minimum maintenance of minor children by classifying children into three age brackets: 0-5, 6-11 and 12-17. Furthermore, unmarried children of full age are equivalent to the minor unmarried children, until they reach the age of 21, as long as they live in the parental household and are in general education (§1603 (2) sentence 2).¹² The child support tables incorporate these four age groups (see, e.g., Table 2).

As a general rule, payments of alimony are tax-deductible (for example, as a special tax item) whereas child support payments are not. Further, the child participates in the rising standard of living of the parent liable for payments of child support. Conversely, the child participates in the income deterioration. Alimony, on the other hand, is determined by “marital living conditions” that are shaped before divorce (Krause 2008, pp. 8 et seq.). Unlike in Denmark, new biological children who live in the same household are not included in the child support formula (Rossin-Slater and Wüst 2017, p. 5).¹³

Child support payments laid down by the Higher Regional Courts

To achieve a consistent interpretation of the maintenance law the appellate courts started to issue so-called Düsseldorf Tables and corresponding guidelines in 1962. Since then, these publicly available documents provide information regarding the rules and calculations used to determine the amount of alimony and child support (Drewes and Hollender 1985, p. 207; Martiny and Schwab 2002, p. 21). Specifically, these tables and guidelines include information on the minimum personal

¹¹For self-employed individuals, the income of the last three years is necessary.

¹²For other children of full age, more severe requirements apply. Here, I assume that children aged 21 and over are financially self-sufficient and are not entitled to maintenance.

¹³The lack of consideration of “second families” was criticized, for example, in the wake of the 2008 law (German Bundestag 2006, p. 12). On July 30, 2008, the Federal Court of Justice for the first time took into account the needs of a new spouse when determining maintenance. However, the Federal Constitutional Court declared this practice to be unconstitutional on January 25, 2011.

need of a person liable for maintenance (different for employed and unemployed),¹⁴ the definition of the allowable net incomes, how child benefit should be taken into account when calculating child support. Further, they establish income groups that are relevant for determination of child support.¹⁵ These tables also include the minimum standards for different age groups of children entitled to child support, etc.

Table 2: Extract from the 2009 Düsseldorf Table

	Allowable net income	Age groups (age in years)				Percentage
		0 – 5	6 – 11	12 – 17	≥ 18	
1.	< 1,500	281	322	377	432	100
2.	1,501 – 1,900	296	339	396	454	105
3.	1,901 – 2,300	310	355	415	476	110
4.	2,301 – 2,700	324	371	434	497	115
5.	2,701 – 3,100	338	387	453	519	120
6.	3,101 – 3,500	360	413	483	553	128
7.	3,501 – 3,900	383	438	513	588	136
8.	3,901 – 4,300	405	464	543	623	144
9.	4,301 – 4,700	428	490	574	657	152
10.	4,701 – 5,100	450	516	604	692	160
	≥ 5,100	according to the circumstances of the case				

Notes: Two children are entitled to maintenance. Child benefit is not taken into account (€82 per minor child and €164 per adult child). Minimum standards (or standard rates) for children are shown in the 1. income group (or at 100%). All values of money are given in €. Source: Higher Regional Court Düsseldorf 2009, p. 1.

Note, after the reunification, the courts in East Germany did not use the Düsseldorf Tables but instead so-called Berlin Tables until January 1, 2008 (Vossenkämper 2007). In West Germany, the realization of maintenance in the legal reality was and is usually done according to the Düsseldorf Tables (Blaese 2000, p. 250; Breithaupt 2012, p. 27). In other words, the Düsseldorf Table was established as the standard in the legal practice (Brühl 1987, pp. 366 et seq.; forsa 2002, p. 6). That is why legal scholars refer to it sometimes as a pseudo-law (see, e.g., Breithaupt 2012, p. 27). There are indications that parents with informal child support agreements in Germany rely on the Düsseldorf Table as well (see, e.g., forsa 2002, p. 90). Since July 1, 1992, the Berlin Table

¹⁴It is important to note that being financially able to pay maintenance is a precondition for the obligation to maintain (see §1603 (1) Civil Code). Also, the debtor does not have to dispose of his/her property if that would be uneconomic in order to meet his maintenance obligation (Drewes and Hollender 1985, p. 202).

¹⁵The course of the child support payments curve in a certain age group and in the given year t is very reminiscent of the income tax rate in Germany. This is also composed of different zones. The “marginal tax rate” of the maintenance curve is zero if the net income of the paying parent is below the minimum personal need. If the income exceeds the minimum personal need, any additional euro earned is “taxed” one hundred percent or taken away until the first relevant payment amount is reached. Before 2001 and after 2008 it is the payment amount of the first income group. Between 2001 and 2008 the first relevant amount is those of the sixth income group in the Düsseldorf Table (or 135% in general). Thereafter, “taxation” is gradual. Accordingly, the minimum personal need corresponds to the basic tax exemption of the income tax rate. However, there is only a short linear-progressive zone when the minimum personal need is exceeded and many proportional zones with a constant “marginal tax rate”. In the 2013 Düsseldorf Table, for example, 10 proportional zones or income groups are included.

has been used as an antecedent to the Düsseldorf Table. The Berlin Table took over the system of the Düsseldorf Table, however on the basis of lower minimum standards for children with the consequence of entrance groups with lower income for parents (Breithaupt 2012, p. 162).¹⁶ In the following, I will not explicitly mention the Berlin Table. The described changes usually affect the Berlin table as a preceding table for the Düsseldorf Table as well.

Parents' living conditions

The first Düsseldorf Table of 1962 claims to cover the “normal case” of all parents’ and children’s living conditions.¹⁷ Thus, the first child support tables contain not only income groups relevant for the liable parents, but also information on significant living conditions. For example, in the second income group (DM 750-1100), the 1969 table contains the following description: Tradespersons without special training, farmers, lower civil servants, white-collar workers, mechanic and pharmacy assistants, liberal professions with similar income (Breithaupt 2012, p. 68). This means that the Düsseldorf Tables are constructed in such a way that the income groups strongly correlate with the educational qualification and the professional status of the liable parent. Since 1973, it has been refrained from explicitly including in the Düsseldorf Tables the information on the profession, and thus on the social status, of the debtor. The income groups in the Düsseldorf Tables, i.e. the net income margins, are considered indicative of significant living conditions or the living status of the paying parent (Breithaupt 2012, p. 87).

I.e., the establishment of the amount of child support obligations at separation is not random. A cross-sectional analysis, i.e., a comparison across parents, of the impact of child support obligations on post-separation outcomes is likely to produce unreliable results.¹⁸ For example, there might be some personality traits that explain a parent’s educational attainment,¹⁹ hence his/her income level

¹⁶This means that the Berlin Table has taken into account the peculiarities of the income structure of the new federal states (Blaese 2000, p. 250). The minimum personal needs in the Berlin Tables were also lower until July 1, 2007.

¹⁷This assertion is supported by Göhring (1969): The table amounts are based not on judicial intuition or equitable considerations, but on statistical information of the federation and the federal states as well as information of the responsible ministries, the Federal Committee for Economic Education, the German Society for Nutrition, the Central Office for Rational Households as well publications of numerous institutions. These publications include in particular shopping cart reviews. Information from youth welfare offices, social courts, and courts outside the state of North Rhine-Westphalia are also taken into account (Göhring 1969, p. 514; Breithaupt 2012, p. 44). The table claims that all amounts are appropriate to the normal needs of the respective living conditions (Breithaupt 2012, p. 47). However, Breithaupt (2012), for example, points out that also in 1962 the needs of children were disconnected from non-resident parents’ own position in life. A minimum standard per age group is simply assumed by the courts and is increased in stages (Breithaupt 2012, p. 45).

¹⁸It is difficult to control for all main differences between parents liable for child support in order to make them comparable. Even including all the relevant information on a parent’s living conditions might not be enough.

¹⁹See, e.g., Sorić’s and colleagues’ (2017) study on the relationship of personality traits and academic achievement. They show that conscientiousness and extraversion predict academic achievement (Sorić et al. 2017). Other authors find a positive relationship between some “big five” personality dimensions like extraversion and career success including salary (e.g., Seibert and Kraimer 2001).

and, as a result, the amount of child support he/she is obligated to pay, and his/her post-separation labor supply and other outcomes. Here, I estimate FE-IV models which capture time-invariant individual characteristics such as personality traits, ability, etc.

Quasi-random variation in child support obligations over time

As can be seen from Table 3, the child maintenance formula was changed nearly annually, i.e., the Düsseldorf Table was changed, maintenance laws were passed, and child benefits were adjusted.²⁰ However, this does not mean that payments are adjusted at the individual level every year. This is left to chance from the perspective of a non-resident parent. For instance, the change in the minimum personal need does not affect individuals in higher income groups. Even if income groups are redefined, it is a matter of chance to end up in a higher or lower income group with a given income. In addition, changes occur because children age and move from one age group to another in the Düsseldorf Table. Thus, the variation of child support obligations depends also on the age of children at separation (as demonstrated in Appendix Figure A.2).

Most importantly, changes presented in Table 3 are independent of the observed labor supply or other behavior of liable parents. All of the adjustments in the maintenance tables are based on legislative variation or decisions by legal authorities (Breithaupt 2012, p. 421). Thus, these changes are exogenous to debtors or receivers of the maintenance.

Another argument for the above-mentioned exogeneity is the inconsistent nature of these changes that cause them to be unintuitive and unpredictable. For example, the increase in the minimum personal need of the employed individuals in 2007 was justified by price increases. However, such price increases have not led to an increase in the minimum personal need of the non-employed (Breithaupt 2012, pp. 267 et seq.). Another example is the 1989 change of the Düsseldorf Table: An increase in child support obligations in the first three income groups, but not for the children of parents with higher income (Breithaupt 2012, p. 152).

Serious modifications in how maintenance is calculated took place in 2001 and 2008. A new law governing child support came into force on January 1, 2001 (German Bundestag 2000). It affected parents in some income groups by increasing their obligations. The way of child support calculation changed again in 2008.²¹ These law changes are also not related to the behavior of parents liable

²⁰In general, the following justifications for adjustments in the Düsseldorf Table were presented beside some of the laws included in Table 3: (1) Increase in the cost of living of a child with simple living (Federal Constitutional Court 1982, p. 94; Breithaupt 2012, p. 134); (2) new regulation on the increase of the maintenance pensions for minors (e.g., Federal Government 1984, p. 1035; Federal Government 1992, p. 535); (3) change in the regular need for non-marital children (Breithaupt 2012, p. 151).

²¹See Schaubert 2018 for full explanation of the 2008 reform.

Table 3: Changes in the Düsseldorf Tables and Guidelines from 1985-2013

	Child benefit: 1. child /2. child	Minimum standard (100% in the Düsseldorf Table)	Minimum personal need of the liable parent: Employed/unemployed	Income groups thresholds	Number of income groups	Occupational expenditures: Minimum[‡]/maximum
01/1985	DM 25/50	change	DM 990/910	change	9	DM 80/240
04/1986	Law Amending Maintenance of Legal, Procedural, and other Rules					
01/1989	DM 25/50	change	DM 1,100/1,000	change [†]	8	DM 90/260
07/1990	DM 25/65		DM 1,100/1,000		8	DM 90/260
01/1992	DM 35/65		DM 1,100/1,000		8	DM 90/260
07/1992	DM 35/65	change	DM 1,300/1,150	change	9	DM 90/260
01/1996	DM 100/100	change	DM 1,500/1,300	change	9	DM 90/260
01/1997	DM 110/110		DM 1,500/1,300		9	DM 90/260
07/1998	Child Maintenance Act (the abolishment of differences between non-marital and marital children)					
	DM 110/110	change	DM 1,500/1,300	change	12	DM 90/260
01/1999	DM 125/125		DM 1,500/1,300		12	DM 90/260
07/1999	DM 125/125	change	DM 1,500/1,300		12	DM 90/260
01/2000	DM 135/135		DM 1,500/1,300		12	DM 90/260
01/2001	Law on the Proscription of Violence in Upbringing and Modification of Child Support					
	DM 135/135		DM 1,500/1,300		12	DM 90/260
07/2001	DM 135/135	change	DM1,640/1,425	change	13	DM 100/290
01/2002	€ 77/77	change	€ 840/730	change	13	€ 50/150
07/2003	€ 77/77	change	€ 840/730		13	€ 50/150
07/2005	€ 77/77	change	€ 890/770		13	€ 50/150
07/2007	€ 77/77	change	€ 900/770		13	€ 50/150
	€ 154/154*					
01/2008	Law to Modify Alimony Regulations					
	€ 77/77	change	€ 900/770	change	10	€ 50/150
	€ 154/154*					
01/2009	€ 82 /82		€ 900/770		10	€ 50/150
	€ 164/164*					
01/2010	€ 92 /92	change	€ 900/770		10	€ 50/150
	€ 184/184*					
01/2011	€ 92 /92		€ 950/770		10	€ 50/150
	€ 184/184*					
01/2013	€ 92 /92		€ 1,000/800		10	€ 50/150
	€ 184/184*					
03/2013	Reform of alimony law (concerning long marriages)					

Notes: * if older than 17 years of age (age group 4 in the Düsseldorf Tables); ‡ if part-time employed also less; † The first two income groups were merged. The number of income groups does not include the last group with the highest incomes. The Düsseldorf Table 1998 is the first table without reference to “illegitimate children”. This is due to the improved legal equality of non-marital and marital children (Brühl 1987, p. 367; Breithaupt 2012, pp. 112, 195). The Düsseldorf Tables and guidelines apply nationally since 2008. After the reunification, the courts in East Germany used so-called Berlin Tables instead (Vossenkämper 2007). The Düsseldorf Tables and comments are based on the coordination agreement between the judges of the Family Senate of the Higher Regional Courts of Düsseldorf, Cologne, and Hamm, and the maintenance commission of the German Family Court Day. Additionally, the results of the survey of all Higher Regional Courts are taken into account (Breithaupt 2012, p. 162). Source: Drewes and Hollender 1985, pp. 207 et seq., 223, 239; Eschenbruch 1990, p. 269; Gnann 1995, p. 64; Suhrkamp Verlag 1998, pp. 257-260; Suhrkamp Verlag 1999, p. 284; Wörz 2011, pp. 24 et seq.; Breithaupt 2012.

for child support.

4. Identification strategy

The main focus of this study is on the effect of varying child support obligations on a wide range of parental behaviors: Labor supply, family formation, and parent-child contact post-separation. However, the endogeneity problem is raised by the liable parent being able to change the amount due because he/she can adjust his/her own income and change his/her own employment situation. Since a liable parent has some influence or choice over his/her child support obligations, I cannot simply estimate ordinary FE regressions with a liable parent's obligations as an explanatory variable.

When the child support obligation is changed as explained in Section 3, the non-resident parent's new maintenance payments are determined by two elements:

1. The exogenous variation in child support obligations which is uncorrelated with any characteristics or behavior of the paying parent;
2. The parent's decision on how to adjust to changing obligations.

Therefore, the basic idea is to construct an IV that captures only the exogenous changes in child support obligations, but not the changes in the parent's labor market behavior (see Figure 1). Thus, I use changing Düsseldorf Tables, child benefits etc. to look up the mandated payments a parent would face *if* he/she did *not* change his/her allowable net income and employment status from before the obligation to maintain. This simulated instrumental variables (SIV) approach is borrowed from Rossin-Slater and Wüst (2016).²² However, I run FE models²³ with constructed child support obligations based on a parent's allowable net income and employment status before separation. Thus, I use a time-varying SIV.

In a standard FE model I would estimate the outcome Y of non-resident parent i at time t as follows:

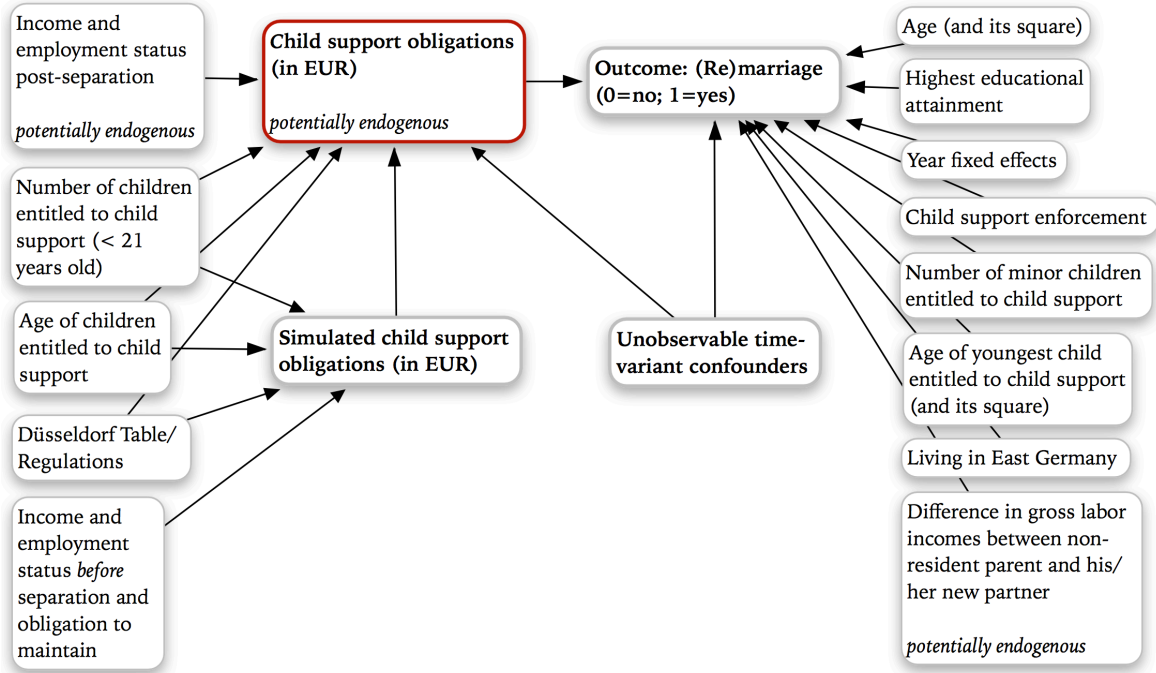
$$Y_{it} = \beta_1 + \beta_2 \cdot Obl_{it} + \beta_3 \cdot X_{it} + \delta_t + \epsilon_i + u_{it} \quad (1)$$

where Obl_{it} indicates the potentially endogenous variable, X_{it} is a vector of individual characteristics, δ_t is the fixed year effects. The ϵ_i captures time-invariant factors (Greene 2012, p. 400). The u_{it} are idiosyncratic disturbances that represent time-variant factors and affect the outcome (Wooldridge 2002, p. 251). The coefficient β_2 is the parameter of interest.

The model in Equation (1) produces more accurate estimates than an OLS regression that does not

²²Rossin-Slater's and Wüst's (2016, 2017) SIV approach is mainly inspired by two studies on Earned Income Tax credit benefits in the U.S. (Dahl and Lochner 2012; Chetty et al. 2011).

²³I estimate linear models with binary outcomes. In general, FE probit or logit models do not produce consistent estimates for the endogenous variables (Greene 2012).



Notes: Child support obligations are monthly payments, after deduction of the corresponding share of the child benefit. Simulated child support obligations are my constructed IV. The recourse rate of the maintenance advance is included as a proxy for the institutional enforcement of child support (Bremische Bürgerschaft 2008, p. 64). As demonstrated by Shafer and James (2013) controlling for socioeconomic characteristics might be important for the (re)marriage formation. However, income is a potentially endogenous variable since it influences the amount of child support obligations. To avoid this problem I control for the highest educational attainment and additionally conduct subgroup analysis. I split my sample using the CASMIN educational classification into two categories: Parents with an intermediate level of education or less, and parents with general and vocational certification at the maturity level or tertiary education. The absolute difference in intra-household incomes is potentially endogenous and is therefore only included in some specifications. For single households and couples with the same individual gross incomes this difference is zero. The intuition behind the inclusion of this variable is to control for the potential to save taxes due to a marriage when there is a gap between a non-resident parent's gross income and his/her partner's gross income. Source: Own illustration

Figure 1: Causal diagram for (re)marriage

control for heterogeneity at individual level (Kennedy 2008, pp. 283 et seq.). However, there may be a concern that unobserved time-variant individual-specific factors u_{it} are correlated with both the outcome and child support obligations. In order to address this potential endogeneity problem in Equation (1) I use a FE-IV approach:

$$Obl_{it} = \alpha_1 + \alpha_2 \cdot Obl_{IV_{it}} + \alpha_3 \cdot X_{it} + \delta_t + \epsilon_i + v_{it} \quad (2)$$

where $Obl_{IV_{it}}$ is my instrument, and v_{it} is an idiosyncratic error term.

I need to include all non-problematic variables in X_{it} that explain the outcome besides the instrument variable in my FE-IV models. Also, my instrument Obl_{IV} should not be a linear combination of other exogenous variables in the model (Verbeek 2012, p. 150). As demonstrated by Deuchert

and Huber (2017), the inclusion of improper controls may lead to severely biased estimates. The authors show that the timing of the determination and measurement of time-varying control variables affects the plausibility of conditional IV independence (Deuchert and Huber 2017, p. 412). Since a parent's pre-separation income is kept constant over time, changes in *OblIV* stem from the number of entitled children, children's move from one age group to another in the Düsseldorf table and from the variation presented in Table 3.

The individual's age as a second order polynomial, the highest educational attainment, the youngest non-resident child's age as a second order polynomial, the number of minor non-resident children, and year fixed effects seem to be good candidates when exploring an individual's behavioral response. Information like the year of separation, partnership status at separation (married/non-married), income at separation, migration background, fixed costs due to separation, alimony payments²⁴, gender of non-resident children etc. are all time-invariant variables at individual level. Parent's income and employment status post-separation are potentially endogenous and should, therefore, not be included in the model. However, Shafer and James (2013) show, for example, that controlling for socioeconomic characteristics might be important for the (re)marriage formation. Since I do not include income in my models, I control for the individual's highest educational attainment and additionally conduct subgroup analysis. I split my sample using the CASMIN educational classification into two categories: Parents with an intermediate level of education or less, and parents with general and vocational certification at the maturity level or tertiary education. This approach is also supported by related literature, demonstrating that some educational groups of men are more affected by child support (enforcement) than others (Bloom et al. 1996).

When investigating (re)marriage behavior I also include the absolute difference in intra-household incomes in some specifications. For single households and couples with the same individual gross incomes this difference is zero. The intuition behind the inclusion of this variable is to control for the potential to save taxes due to a marriage when there is a gap between a non-resident parent's gross income and his/her partner's gross income. Controlling for this variable might be, however,

²⁴Unlike child support, the level of spousal support is determined by the so-called "marital living conditions". Only those incomes that have shaped the marital living conditions, should be used for the maintenance calculation in spousal maintenance (Borth 2011, p. 142). Therefore, in principle, changes in income after divorce can no longer affect marital relationships (von Heintschel-Heinegg and Gerhardt 1990, p. 66; Borth 2011, pp. 13 et seq.). In the case of child support, on the other hand, it is necessary to constantly recheck whether changes in the income situation also affect maintenance (Finanztip 2012, accessed on 05.29.2018). The child has, unlike the former spouse, no standard of living guarantee. The child participates in the rising standard of living of the parent responsible for the child support payment as during his/her parents' existing marital relationship. Conversely, the child also participates in the income deterioration (Krause 2008, pp. 8 et seq.). Therefore, alimony established at divorce can be considered time-invariant, whereas child maintenance is not. Only in so-called cases of shortfall, alimony directly interferes with the amount of child support.

problematic.

An IV must satisfy two conditions: Relevance and exclusion. The relevance condition can be easily tested by running the regression of Obl on all the other regressors and instrument Obl_{IV} to see if the instrument explains Obl . The exclusion condition means Obl_{IV} is uncorrelated with the time-variant individual-specific disturbance. The instrument must be uncorrelated with the outcome except through Obl . It is impossible to test the exclusion restriction because the disturbance is unobservable. I assume that changes in Obl_{IV} explain the changes in the outcome, but only through its effect on Obl . In Section 3, I presented arguments as to why changes in obligations are quasi-random.

There are a number of threats to my FE-IV identification assumptions, for example: A lack of within-variation in the outcome, Obl , and the instrument Obl_{IV} ; the omission of time-variant variables that are potentially associated with both – my instrument Obl_{IV} and the dependent variable at the same time (Angrist and Pischke 2009, p. 243; Thu Le and Nguyen 2018, p. 205).

Since I do not observe the actual child support transfer for non-resident parents, I additionally look at specific periods when the lawmaker aimed to increase child support compliance: The 2001 law introduced stricter payment rules for non-resident parents within the first five income groups in the Düsseldorf Table (Wörz 2011, pp. 24 et seq.).²⁵ The purpose of *2008 Reform of the German Maintenance Law* was to strengthen the best interest of the child. However, the way the reform was designed meant that it would only benefit children in so-called cases of shortfall, if at all. The obligation to provide information regarding the income of non-resident parents has been, nonetheless, improved.

In general, the present paper is an explorative study. Nevertheless, the possible effects of child support obligations on parental behavior are discussed in Appendix A.2.

5. Data

Data source and restrictions

I use the German Socio-Economic Panel study *SOEP* (1984-2013) – a representative longitudinal study providing information on all household members.²⁶ I restrict the sample in several ways: Former cohabiting partners with children are included since July 1, 1998 (see Table 3), East Ger-

²⁵In 1991 the *Law to Modify Maintenance Security Law and Maintenance Security Ordinance* came into force, extending the duration of advance child support from 36 to 72 months. However, the improvement of child support payments/compliance was not in the focus.

²⁶For more information see Wagner et al. 2007. I use SOEPlong version 30, doi:10.5684/soep.v30.

mans since July 1, 1992. For the sake of convenience, I include only individuals who have one or two biological children at time of separation. Further, I exclude couples when the resident parent's income is higher than that of the non-resident parent at divorce. In such cases, the calculation of child support is more complicated. I also exclude couples when both former partners report to be single parents at the same time. Thus, I exclude parents with joint physical care.

Separation and income

I observe existing couples with joint children who separate over time. For this analysis, I need first (marital) breakups with children involved. The year of separation is defined as the first year in which individuals are no longer observed to live in the same household and the non-resident parent is liable to pay child support. Note, that this is not the same as the year of separation in legal terms. Instead, it is the first year of obligation to pay child support. The last year when the couple lived with their children in the same household is called the year before separation or *bsepy*.

There are many arguments to use the net income from the last calendar year before the separation. First, this income is not burdened by a maintenance order. Second, it is highly unlikely that a parent will reduce his/her income in anticipation of a future maintenance obligation. Voluntary income reduction would be unlawful (von Heintschel-Heinegg and Gerhardt 1990, p. 51) and easier to detect when parents live together. Even if the first earner intentionally reduces his/her income during the separation period, a fictitious income is assumed, based on which the maintenance amount is calculated (Wendl and Staudigl 1995). Third, income and church taxes are only taken into account in actual amounts, even in the event of a change in tax class, e.g. from class III before the divorce to class I after the divorce has taken place (von Heintschel-Heinegg and Gerhardt 1990, p. 31). Therefore, the parties can assert the income reduction resulting after the divorce by changing the tax category only by means of a petition to modify a judgment according to §323 of the Civil Process Order. This is a significant obstacle for those affected.

Children entitled to child support

I rely on the assumption that children born in an existing relationship are the biological children of both partners. Thus, I exclude the possibility of, for example, infidelity leading to the birth of a child. One of the challenges is to link biological children to the non-resident parent because of multiple fertilities and different living arrangements.

I exclude couples for whom I cannot determine beyond doubt whether the child living in their household was born during their relationship. For example, a couple having an 11 year old child

in the household is not married at separation and can only be observed for two years prior to the breakup. Further, information on received child allowance and other information that is helpful in understanding whether it is a joint child is missing. In such a case, it is not clear that the child is indeed the biological child of both partners. Therefore, such individuals are excluded.

Furthermore, I consider children between 18-20 years of age to be entitled to child support as well (see Düsseldorf Table age group 4). I assume that the entitlement to receive child support expires when the child turns 21.

Amount of child support obligations

The so-called adjusted net income is decisive for the calculation of child support. This is formed by deducting from the gross income the relevant amounts that are not available to the parents for their general need. These are the following items: Income and church tax, additional costs like health insurance, pension insurance, etc., work-related expenses, specific additional needs due to illness or old age, and debts worthy of consideration (von Heintschel-Heinegg and Gerhardt 1990, pp. 31, 34). However, I only consider the work-related expenses shown in Table 3 and self-reported net incomes.

Since I use one-year retrospective information on employment situation and incomes, I compare this information to current reports. There is evidence of retrospective bias in SOEP calendar data in case of unemployment (Jürges 2005, p. 157). Further, missing data on unemployment benefit I and II, and sick pay is added (Institute for Employment Research 1993, accessed on 11.20.2017; Federal Government 2013, accessed on 11.26.2017; Steffen 2018, accessed on 06.03.2018). This approach prevents bias due to missing self-reports of parents in the SOEP data.

I calculate the amount of child support obligations every year post-separation based on the child support formula presented in Section 3. For the IV, I use allowable incomes reported in *bsepy*. Net incomes in the year before separation are pre-determined at the time of child support calculation (Rossin-Slater and Wüst 2016, pp. 3 et seq.). I do not include information on personal debt since it is only available every five years.

Child support enforcement

A maintenance claim is only enforceable if it is titled. That is, in order to recover the maintenance, there must be an enforceable title, in the form of a decision, a judgment or the like. In case of non-payment, these deeds on maintenance payments can be used for enforcement.²⁷ For this purpose,

²⁷Enforcement implies that a titled claim that is not voluntarily paid by the debtor is enforced by a state procedure.

either bailiffs can seize objects from a debtor. Alternatively, a court of execution may seize labor income: A seizure and remittance order will cause the debtor's employer to pay part of debtor's salary directly to the parent who has the right to collect child support payments. Notaries, judicial officers and judges of the district court and the employees of the youth welfare office can issue (enforceable) titles (VAMV 2012, p. 120).

There is variation across federal states and years in child support recourse rates. The recourse rate can be understood as a measure of the institutional enforcement of maintenance (Bremische Bürgerschaft 2008, p. 64) or as a repayment risk a non-paying parent faces living in a certain federal state and year.²⁸ Although information on a county level would be more meaningful, I could only find this ratio for the years 1995 and 2000-2013 for all 16 federal states. Bavaria is the most successful federal state in relation to the recourse available to persons owed maintenance. Bremen is the least successful (1995 and 2000-2014; Audit Office Baden-Wuerttemberg 2016, p. 161). Thus, I control for the recourse ratio in some specifications.

Dependent variables

The present study includes three different aspects of parental behavioral responses to changing child support obligations: Family formation, childcare hours, and labor supply. In addition, I consider parental self-reported financial support of children. However, the measurement of this variable is highly problematic, which is why I include all corresponding results in Appendix A.4.

Family formation

I investigate post-separation family formation by looking at the likelihood of (re)marrying, cohabiting with a new partner, and of having new biological children. Therefore, I construct dummies that equal one if this is the case, and zero otherwise.

Hours invested in childcare

After divorce, the variables that link the non-resident parent to the child are child support payments, in-kind financial support, and visitations (Garasky et al. 2010, p. 363). Visitation or parent-child contact can be depicted by the question "What is a typical weekday like for you? How many hours per normal workday do you spend on the following activities?" and the same question for Saturday and Sunday. Possible answers include childcare. It is important to include both a weekday and

²⁸The purpose of the recourse is also to hold accountable the debtor for periods after the receipt of the maintenance advance (Bremische Bürgerschaft 2008, p. 7).

a weekend report because a non-resident parent’s involvement with his/her children might be primarily on the weekend.

Labor supply

The dependent variables should reflect the behavioral response of liable parents in the labor market to the child support obligation. Therefore, participation in the labor force and being full-time employed are constructed as dummies that equal one if this is the case, and zero otherwise. Further, working hours on an average workday are included as an outcome.

Descriptive statistics

Based on 2,586 parent-year observations, my sample is on average predominantly male, 42 years old, has an intermediate level of education, about 19 years experience in full-time employment, and 1.33 children entitled to maintenance.

6. Empirical results

First stage

For every FE-IV specification, I report the first stage coefficient and the corresponding F-statistic. Figure 1 illustrates the relationship between the potentially endogenous child support obligations *Obl* and the constructed instrument *Obl_IV*. Both quantities are reported in year 2000 real units of €10. The interpretation of the first stage coefficient ≈ 0.679 is, for example, the following: An increase of €10 monthly in child support obligations *Obl_IV* is associated with a €6.79 increase in *Obl*. Across all specifications, the correlation between *Obl* and *Obl_IV* seems to be strong.²⁹ The F-statistic is always above 10, indicating a strong first stage.³⁰

(Re)marriage

There is no statistically significant change in the likelihood of being (re)married as a reaction to increasing child support obligations when including all post-separation years from 1985-2013. Considering the time period after the entry into force of the *2001 Law on the Proscription of Violence in Upbringing and Modification of Child Support* produces a statistically significant but

²⁹In the case of one endogenous variable and one instrument, weak identification corresponds to a weak correlation between the regressor and the instrument (Mikusheva 2013, pp. 118 et seq.).

³⁰Staiger and Stock (1997) proposed that instruments should be considered weak if the first-stage F-statistic is less than 10. The Staiger-Stock rule of thumb is further discussed by Stock and Yogo (2005). Note, the Sanderson-Windmeijer multivariate F test of excluded instruments produces the same F-statistic as the Kleibergen-Paap Wald rk F-statistic in my models with one endogenous variable and one instrument.

relatively small effect: A €10 increase in a parent’s monthly obligation might increase her/his likelihood of being (re)married by about 0.33 percentage points (about 2% at the sample mean; see Column (2) of Table 4).³¹ It seems that this result is driven by better educated non-resident parents. If I split my sample using the CASMIN educational classification into two categories, the response is about 0.59 percentage points (about 3% at the sample mean) in the group of individuals with general and vocational certification at the maturity level or tertiary education (Column (4) of Table 4).³²

For non-resident parents with an intermediate level of education or less, the result is about 0.17 percentage points (about 0.9% at the sample mean) and the coefficient is not statistically significant at the 0.10 level (Column (6) of Table 4). More important, the null hypothesis that the endogenous regressor *Obl* can be treated as exogenous cannot be rejected. Tests of significance of *Obl* in the main equation suggest that the parameter of this endogenous variable is not different from zero (weak-instrument-robust inference; Baum et al. 2007, p. 491; Núñez 2008, p. 133).

The likelihood of (re)marrying might also be influenced by the income or employment situation of the new partner. Note, however, the choice of a potential spouse or (cohabitation) partner might be endogenous. When I include indicators for different households (living alone; living with a partner who does not work; living with a partner employed part-time; living together with a partner who works full-time) besides individual’s age as a second order polynomial, highest educational attainment, year fixed effects, youngest child’s age as a second order polynomial, the number of non-resident minors who are entitled to child support, and recourse rate, the coefficient of interest is still ≈ 0.3 percentage points (about 2% at the sample mean) and significant at the 0.05 level for all non-resident parents.^{33,34} This result holds even when I additionally include potentially bad controls like being full-time employed, and full-time employment in years as a second order

³¹Additionally controlling for “living in East Germany” as presented in Figure 1 does not change the results. Interestingly, controlling for socioeconomic characteristics, like current employment status, education and income, that might be important for (re)marriage formation (see, e.g., Shafer and James 2013), hardly changes the magnitude of the coefficient from Column (1). The coefficient is ≈ 0.4 percentage points when I include control variables for minors living in the household. Note, current income, employment status, and new children in the household are all potentially endogenous variables. Controlling for new children, for example, might lead to collider or selection bias (Deuchert and Huber 2017, pp. 422 et seq.) because non-resident parents might respond to changing child support obligations by having new children.

³²Since the number of clusters (78 non-resident parents) is higher than the number of included exogenous regressors and the excluded instrument, partialling-out of some exogenous regressors is not necessary (Baum et al. 2007, p. 485).

³³The sample from Columns (1) and (2) of Table 4 is reduced to 1,529 observations or 280 non-resident parents when controlling for household categories.

³⁴For better educated parents, additionally controlling for household categories changes the magnitude of the coefficient for *Obl*. It is ≈ 0.4 percentage points (about 2% at the sample mean) and not statistically significant at 0.10 level. The sample is further reduced to 381 observations or 72 non-resident parents. The choice of a potential spouse or cohabitation partner might be endogenous. Nevertheless, this exercise questions the found effects as presented in Columns (3) and (4) of Table 4.

Table 4: FE-IV (2SLS) regressions for the likelihood of being (re)married after the *2001 Law on the Modification of Child Support*

Sample restriction	(Re)marriage (1 = married after separation; 0 = otherwise)					
			More educated		Less educated	
	(1)	(2)	(3)	(4)	(5)	(6)
Monthly child support obligations <i>Obl</i>	0.0048*** (0.0019)	0.0033* (0.0017)	0.0077** (0.0029)	0.0059** (0.0023)	0.0034 (0.0022)	0.0017 (0.0033)
Control variables	no	yes	no	yes	no	yes
Mean, dep. var.	0.1911	0.1911	0.1950	0.1950	0.1897	0.1897
Fst. stage coef.	0.719***	0.679***	0.837***	0.837***	0.646***	0.601***
Fst. stage F-stat.	111.73***	90.47***	107.43***	131.54***	51.90***	40.66***
Underid. tests	H ₀ : equation is underidentified; H _a : identified					
KP rk LM stat.	43.24***	40.87***	15.60***	16.06***	27.74***	25.24***
SW fst. stage χ^2	H ₀ : endogenous regressor <i>Obl</i> is unidentified					
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid					
AR Wald test F-stat.	6.67***	3.61*	7.90***	6.69**	2.30	0.56
AR Wald test χ^2	6.75***	3.66*	8.25***	7.05***	2.33	0.57
SW LM S stat. χ^2	10.09***	4.91**	10.78***	12.41***	3.29*	0.80
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous					
End. test stat. χ^2	3.978**	2.260	4.490**	4.914**	1.130	0.221
N	1,664	1,664	436	436	1,228	1,228
Av. obs per parent	5.5	5.5	5.6	5.6	5.5	5.5
Non-resident parents	300	300	78	78	222	222

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification), youngest non-resident child's age as a second order polynomial, the number of minor children who are entitled to child support and live outside the household, and recourse rate. The recourse rate is the ratio of total government expenditure to the repayments of maintenance debtors at the federal state level. This measure is publicly available since 2000 for all federal states. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5. SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference. For an explanation of these tests see Baum et al. (2007).

Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

polynomial. Controlling also for the absolute difference in intra-household incomes reduces the coefficient to ≈ 0.2 percentage points (about 2% at the sample mean). It remains statistically significant at 0.10 level. For single households and couples with the same individual gross incomes this difference is zero. The intuition behind this approach is the potential to save taxes due to a marriage when there is gap between a non-resident parent's gross income and his/her partner's gross income. Controlling for this variable might be problematic, because non-resident parents' income is potentially endogenous. The endogeneity tests in these FE-IV models cannot reject the null hypothesis at 0.10 level.³⁵ All corresponding results are shown in Appendix A.5.

³⁵In FE regressions, regardless of the included controls, the coefficients of *Obl* are smaller in comparison to those in

In an additional analysis, I explore the impact on the likelihood of cohabitating with a new partner and fail to find any statistical significance irrespective of the chosen specification. In general, a cohabitation requires less commitment than marriage. Cohabitation is treated differently to marriage in many aspects of the law including income tax, health insurance, adoption rights, residence permit, or acquisition of citizenship. This different legal treatment of cohabitation may influence selection into marriage (Perelli-Harris and Gassen 2012, pp. 445, 447). That is why non-resident parents who marry may make more discriminating choices of partner than parents who cohabit with a new partner (e.g., Blackwell and Lichter 2000; Blackwell and Lichter 2004). Moreover, marriage gives some couples more financial advantages such as tax savings in comparison to cohabitation. Regardless of these differences, the empirical evidence of a positive marriage incentive seems to be also rather weak and less convincing.

New children in the household

There is an indication for a negative effect of obligations *Obl* on the number or presence of minor children in the household that can be explained in two different ways: First, non-resident parents decrease their fertility due to increased child support obligations. Second, their choice of a potential partner changes in favor of an individual with fewer children or no children due to increased obligations. I find evidence for negative fertility incentives: A €10 increase in a parent's monthly child support obligation reduces his/her likelihood of having new biological children by about 0.27 percentage points (about 2.5% at the sample mean).

Restricting the sample to parents 50 years old and younger leads to a slightly higher effect: A reduction by about 0.39 percentage points (about 3% at the sample mean; Column (3) of Panel A in Table 5). Parents with an intermediate level of education or less seem to drive the results: The response is about 0.61 percentage points (at 5% at the sample mean; Column (3) of Panel B). When I additionally control for household categories, the magnitude of the coefficient does not change significantly, also when I additionally include another potentially endogenous variable – (re)marriage status. Although not presented here, additionally controlling for the parent's age group (≤ 25 , 26-30, . . . , 46-50 years old) does not significantly change the coefficients.³⁶ However, limiting my sample to parents younger than 45 years old with an intermediate level of education or less leads to a reduction of about 1.1 percentage points (about 8% at the sample mean) as a result

FE-IV models and not statistically significant at 0.10 level.

³⁶Although not presented here, additionally including potentially bad controls such as the current employment situation hardly changes the magnitude of the response.

of a €10 increase in monthly child-support obligations. The response is slightly stronger for parents with a general and vocational certification at the compulsory level or less: About -1.7 percentage points (about 12% at the sample mean). All corresponding results are presented in Appendix A.6. I additionally include a number of presumably bad controls like being full-time employed, parent's work experience in years as a second order polynomial or difference in intra-household incomes to see if their addition has any effect on estimates. For parents with an intermediate level of education or less and younger than 45 years old the addition of all these variables in my FE-IV models leads to a coefficient of about -0.9 percentage points (about 8% at the sample mean). It is statistically significant at 0.05 level. For parents with a general and vocational certification at the compulsory level or less this inclusion produces a coefficient of -1.6 percentage points (about 13% at the sample mean) which is comparable to estimations without these controls. Again, the coefficient is statistically significant at 0.05 level.

Focusing on the time period after the 2001 reform produces similar results. When restricting the sample to the years after 2008, the number of observations is reduced and the coefficient is slightly smaller.³⁷

It is worth mentioning that I consider the period of the child maintenance obligation. I.e., at least one non-resident child is younger than 21 years old. How fertility develops beyond that period of time is not investigated in the current study. It is conceivable that some parents postpone having new children until they are no longer liable to pay child support.

Childcare of non-resident children

As expected, non-resident parents do not change the time spent with their children during an average weekday. This applies to parents who have new children in the household as well as to parents without children in the household (see, e.g., Appendix Table A.28).³⁸ Furthermore, changes in child support obligations have no impact on the hours spent with children during an average weekend day. This holds for non-resident parents with and without new children in the household.

³⁷Overall, this reduces the sample to 774 observations. For parents with an intermediate level of education or less, the parent-year observation number is 390.

³⁸Note, for parents with children in the household I control for their number in different age groups which is problematic due to the potential endogeneity of these controls.

Table 5: FE-IV (2SLS) regressions for having new biological children of parents younger than 50 years of age

	New biological children (1 = yes; 0 = no)			
	(1)	(2)	(3)	(4)
Panel A: All non-resident parents				
Monthly child support obligations <i>Obl</i>	-0.0027 (0.0017)	-0.0039** (0.0017)	-0.0042** (0.0016)	-0.0044*** (0.0017)
Control variables	no	yes	yes	yes
Household category	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	yes
Mean, dep. var.	0.1187	0.1187	0.1187	0.1222
Fst. stage coef.	0.684***	0.673***	0.660***	0.647***
Fst. stage F-stat.	100.20***	93.28***	77.25***	68.96***
Underid. tests	H ₀ : equation is underidentified; H _a : identified			
KP rk LM stat.	43.87***	42.45***	39.70***	37.16***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified			
SW fst. stage χ^2	101.82***	94.92***	78.85***	70.48***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid			
AR Wald test F-stat.	2.69	5.38**	6.58**	7.30***
AR Wald test χ^2	2.74*	5.48**	6.72***	7.46***
SW LM S stat. χ^2	4.28**	8.15***	10.91***	14.23***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous			
End. test stat. χ^2	2.912*	5.062**	5.631**	6.033**
N	2,224	2,224	2,031	1,948
Av. obs per parent	6.4	6.4	6.2	6.1
Non-resident parents	348	348	325	320
Panel B: Less educated parents				
Monthly child support obligations <i>Obl</i>	-0.0050** (0.0022)	-0.0061*** (0.0023)	-0.0056*** (0.0019)	-0.0060*** (0.0020)
Control variables	no	yes	yes	yes
Household category	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	yes
Mean, dep. var.	0.1180	0.1180	0.1165	0.1200
Fst. stage coef.	0.623***	0.613***	0.622***	0.607***
Fst. stage F-stat.	59.36***	55.05***	52.07***	46.03***
Underid. tests	H ₀ : equation is underidentified; H _a : identified			
KP rk LM stat.	32.35***	30.80***	29.77***	27.72***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified			
SW fst. stage χ^2	60.57***	56.26***	53.42***	47.31***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid			
AR Wald test F-stat.	5.67**	7.93***	8.64***	9.62***
AR Wald test χ^2	5.79**	8.11***	8.86***	9.88***
SW LM S stat. χ^2	8.91**	11.82***	15.57***	21.33***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous			
End. test stat. χ^2	5.255**	6.965***	7.724***	8.369***
N	1,780	1,780	1,631	1,559
Av. obs per parent	6.5	6.5	6.4	6.3
Non-resident parents	274	274	254	249

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification), youngest non-resident child's age as a second order polynomial, the number of minor children who are entitled to child support and live outside the household. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5. SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference. For an explanation of these tests see Baum et al. (2007). Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Labor market behavior

Empirically, there are no significant effects of child support obligations on parents' working hours during an average weekday, participating in the labor force or work full-time (see, e.g., Appendix Table A.29).³⁹ This holds equally for less and more educated parents irrespective of age restrictions.

Robustness checks

As a first robustness check for the fertility of parents with an intermediate level of education or less, I include only parent-year observations with at least one child in the first three age groups of the Düsseldorf Table. I.e., at least one child entitled to child support is a minor. The response to a €10 increase in monthly child support for parents younger than 50 years of age is slightly stronger in comparison to the results shown in Table 5: Now it is about -0.76 percentage points (about 7% at the sample mean). All results are presented in the Appendix A.9 starting on page 62.

Further, excluding times when a parent is self-employed leads to the same fertility response as observed in Table 5. Note, I do not calculate the average monthly income based on the last three years as per the Düsseldorf guidelines for self-employed parents. Next, I exclude so-called cases of shortfall from the initial sample, i.e. parents who are financially incapable to pay full maintenance to children and to a former spouse at separation. Here, I assume that post-marital alimony did not exist after 2008. Results are qualitatively similar when applying this sample restriction.

As has already been pointed out, when calculating the level of maintenance, tables and guidelines developed by the Higher Regional Courts to standardize the case-law are used. The Düsseldorf Table is used for child maintenance by all Higher Regional Courts with the exception of the Higher Regional Court of Nuremberg, which has developed, based on the Düsseldorf Table, its own maintenance table (von Heintschel-Heinegg and Gerhardt 1990, p. 28). In Panel A of Appendix Table A.32, results are presented for parents younger than 50 years of age who do not live in Bavaria. Again, these coefficient results are similar to those found in the main results for fertility presented in Table 5.

7. Conclusions and discussion

In this paper I consider parents who experience quasi-random variation in their child support obligations over the years. The Düsseldorf Tables are (and have been) subject to repeated adjustment

³⁹Additionally, I do not find significant changes in parents' work experience in full-time employment, which is measured in years.

by courts, thus leading to inconsistent changes in mandated financial payments to children over time.

I apply individual FE-IV models to address the potential endogeneity of child support obligations. Results indicate that a €10 increase in a parent’s monthly child support obligation is associated with a reduction in the likelihood of having more biological children by about 0.39 percentage points (at about 3% at sample mean) for parents younger than 50 years old. This finding is in line with the majority of studies showing a fertility adjustment, of fathers liable for child support, to child support enforcement or obligations (Case 1998; Huang 2002; Plotnick et al. 2004; Rossin-Slater and Wüst 2017).

Besides the impact on post-separation fertility, I find no other behavioral response. There is only weak evidence for a positive (re)marriage incentive and no indication for a change in the likelihood to cohabit with a new partner. Considering these two outcomes, my study thus supports Rossin-Slater’s and Wüst’s (2017) findings.

Further, obligations seem not to reduce childcare hours I.e., this finding suggests that – in the sample I study – there might not be a harmful effect on children from increasing child support obligations, as suggested by other authors (for evidence on the role of fathers in children’s development, see, e.g., Suh et al. 2016; Ibrahim et al. 2017). My study validates the results presented by Veum (1993) and Nepomnyaschy (2007).

It seems that changes in obligations are uncorrelated with parents’ post-separation labor supply behavior. This means I do not find any evidence for possible loss in tax revenue due to a decline in labor supply. Thus, my study supports findings by Klawitter (1994), Rich et al. (2007), and Rossin-Slater and Wüst (2017).

It is important to emphasize that my findings may be specific to the population and setting I study. The estimated effects should be interpreted within the local average treatment effect framework (Imbens and Angrist 1994, p. 467; Jurajda 2007, p. 19; Kennedy 2008, p. 150).⁴⁰ Future research may examine parental behavioral responses to child support obligations within the German context using other data sources and considering other groups of parents. As Angrist and Pischke (2010) point out “[a] constructive response to the specificity of a given research design is to look for more evidence, so that a more general picture begins to emerge” (Angrist and Pischke 2010, p. 23).

Note that I do not investigate post-separation outcomes for parents with more than two dependent

⁴⁰Here, the compliant population consists of parents whose behavior was influenced by the changes of constructed child support obligations (Angrist and Pischke 2009, p. 158). In general, the local average treatment effect has a “high degree of internal but possibly limited external validity” (Imbens 2010, p. 415).

children at the time of the first separation. Also, before divorce or separation both parents and children share the same household. Separated parents with joint physical care of children are excluded. Further, individuals who continue to participate in surveys after the separation from their families – such as the SOEP – are accessible to the Youth Welfare Office. This implies that they are unlikely to move away in hopes of avoiding child support payments. Thus, the conclusions drawn from this study do not apply to parents who choose to engage in this kind of child support avoidance. Hence, the survey’s participants are likely to exhibit higher child support compliance because they are in the “public eye”.⁴¹

Child support schemes are usually designed to reduce the reliance of children affected by parental separation on government transfers (Fischer 2017, p. 189). A fertility reduction of the liable parents, as found in the present study, is not a policy objective but, rather, an unintentional side effect. Whether this is a desirable parental reaction should be clarified by the policymakers and designers of child support tables and guidelines. This study should be an invitation to do so.

In general, the construction of child support tables and guidelines in Germany should be more discussed by economists. So far, this topic is largely left to legal scholars. They rightly point out that the Higher Regional Courts exactly specify the legal maintenance provisions of family law on the regular basis. I.e., the courts transform words into numbers (Schönberger 2012, p. 306). From the point of view of some jurists, this is problematic because the courts have the judicial but not the legislative power. The legislature leaves the design of the tables to the Higher Regional Courts and these can claim that the tables have no legal force and are merely guidelines.⁴² Both parties involved seem to be satisfied with this praxis. The legislature does not have to worry about concrete values, and courts reduce their workload through the child support tables. The structure of financial incentives regarding the maintenance amount and subsequent changes specified in the tables is not addressed at all by the two sides. That is why economists should conduct empirical investigations.

Further, one of the questions that could not be addressed here is whether parents tend to work more in the informal labor market as a result of increased child support obligations. Thus, child support

⁴¹Whether my sample is representative of all parents liable for child maintenance cannot be clarified. Note, I have not found representative statistics on non-resident parents for 1985-2013. A representative survey between July 2001 and June 2002 found that 96% of maintenance debtors were fathers. They were on average 42 years old, 74% had only one minor child entitled to child support, and 84% were employed. On average, they had 1.3 non-resident minor children (forsa 2002, pp. 174 et seq.). Based on my 1985-2013-sample, the average survey year is 2003, about 97% of year-parent observations are male, about 42 years old, with an average of 1.08 minor children entitled to child support. About 86% are employed (Appendix Table A.20 on page 52).

⁴²In 1992, the presiding judge at the Düsseldorf Higher Regional Court declared that the Youth Welfare Offices and lawyers misunderstand the Düsseldorf Table as a quasi-legal force (Breithaupt 2012, p. 165).

avoidance has important policy implications and is a promising field of study. The proportion of German parents who live apart from their children will increase rather than decrease over time.⁴³ Therefore, the problems surrounding child maintenance will probably become even more prominent in the future.

Furthermore, one could perform a comparative analysis of two systems: First, the German child maintenance system is preserved. Second, it follows Altman's (2003) proposal, and the taxpayer completely finances the children in single-parent households.⁴⁴ A holistic analysis would be all the more important because recently the advance on child support has been extended to older children. This means increased public funding of child-rearing costs in single-parent households is a reality. On the one hand, there are the costs of the advance on maintenance, the cost of recourse from the debtors, and the costs of social security systems. On the other hand, direct public spending would have to be extended in comparison to the maintenance advance, especially if the taxpayer would have to pay for the contributions specified in the Düsseldorf Table. Of course, one should not ignore the (dis)incentives of both systems. It is conceivable that in the second system more children will be born because the financial liability in the case of separation would no longer exist.

Special attention should be given to child-maintenance debtors in such a generous welfare system like the German one. It is important to analyze how this group differs from other parents. Further, it is crucial to understand if changes in the established minimum personal need have an impact on incurring debt. The function of the minimum personal need is to protect the non-resident parent. Without this scheme, would more non-resident parents be in debt? In Denmark, for example, all parents have to pay a so-called normal amount to the children regardless of their own income (Rossin-Slater and Wüst 2017, p. 5). This is not the case in Germany, since being financially able to pay child support is a precondition for the obligation to maintain (see §1603 (1) Civil Code).

⁴³In 2017, about 17% of German children who are younger than 18 years of age lived with only one parent. Without this age restriction, the rate is about 22%. Twenty years ago the percentage was already significant, but lower – at just 12% (Federal Office of Statistics 2018, pp. 7 et seqq.).

⁴⁴Altman (2003, p. 173) advocates for greater public funding based on the idea that children provide public benefits.

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A. Appendix

A.1. Related literature

Table A.6: Literature overview: Relationship between child support and non-resident fathers' labor supply

Reference	Country	Source of variation	Outcome	Method	Results
Klawitter 1994	U.S.	changes in child support policy in Wisconsin	earnings of divorced non-custodial fathers with support awards	OLS, probit analysis	no significant effects of child support on the earnings of divorced noncustodial fathers in the first few years following the award of child support
Freeman and Waldfogel 1998	U.S.	state-level child support enforcement policy	noncustodial 18-55 years old fathers' LFP and working hours	DiD	little positive effect of more stringent enforcement policy on noncustodial fathers' employment (few statistically significant results); never-married noncustodial fathers: less likely to be working in casual or self-employment
Holzer et al. 2005	U.S.	state-level child support enforcement activities	employment rates and LFP of 16-34 years old black men with high school education and less and who are not enrolled in school	OLS, DiD	a negative relationship between child support mandates and labor supply of 25-34 years old black men (mainly statistically insignificant at 0.10 level) ; positive and statistically significant effects on labor supply of black men aged 16-24
Rich et al. 2007	U.S.	city-level child support enforcement strength	unmarried fathers' formal and informal (shadow economy) employment and hours	OLS, DiD	among fathers combining work in the regular and underground sectors: stricter child support enforcement is associated with fewer hours of underground employment; little evidence that stronger enforcement is more generally associated with employment or hours in the regular sector
Cancian et al. 2013	U.S.	varying childbirth costs charged in unmarried mothers' Medicaid-covered childbirths across counties as exogenous source of variation in fathers' child support debt	low-income fathers' labor supply	OLS, GLM, IV	greater debt (through birth costs charges) has a negative effect on fathers' formal earnings
Rossin-Slater and Wüst 2017	Denmark	changes in Danish child support formula	labor market responses of fathers	simulated IV	no significant effects of child support obligations on non-resident fathers' labor market outcomes

Notes: In an unpublished manuscript, Bitler (1998) finds that stronger child support enforcement may lead to an increase of noncustodial parents' working hours. However, the results were sensitive to model specification (U.S. setting; Bitler 1998). Source: Own compilation

A.2. Expected outcomes

Family formation

Some non-resident parents may have a positive incentive to (re)marry or to cohabit with a new partner when the child support obligation is increased. Since the children from previous relationship are not resident in the household,⁴⁵ the probability of remarriage or cohabitation is likely to be affected through financial channels (Bloom et al. 1996, p. 5). Increasing child support obligations reduce the disposable income of the parent liable for child support. Contrary to single households, two individuals who share a household have the possibility to exploit economies of scale in consumption and in household production (Chiappori and Mazzocco 2015, p. 59). A marriage can additionally provide tax benefits. Since the new spouse may also be liable for child support with his/her income since 2003, the incentive from the parent liable for child support to marry is present. However, it is questionable whether this legal regulation is known. Note, there is no theory demonstrating a clear effect (positive or negative) of child support obligations on (re)marriage (Bloom et al. 1996, p. 5).

The existing evidence for the U.S. suggests that the improvements in child support enforcement – which in turn increase the cost of having a non-resident child – can lead to a decreased likelihood of having additional children. Unlike in Denmark, German and U.S. parents do not face a financial incentive to have more biological children in order to reduce their child support obligation for children outside their household.

Time spent on childcare

Findings regarding child support payments and time invested in children are ambiguous. A change in involvement can probably only happen at weekends since the child lives in the household of the other parent and it is likely that visitation occurs primarily on the weekends.

Labor supply

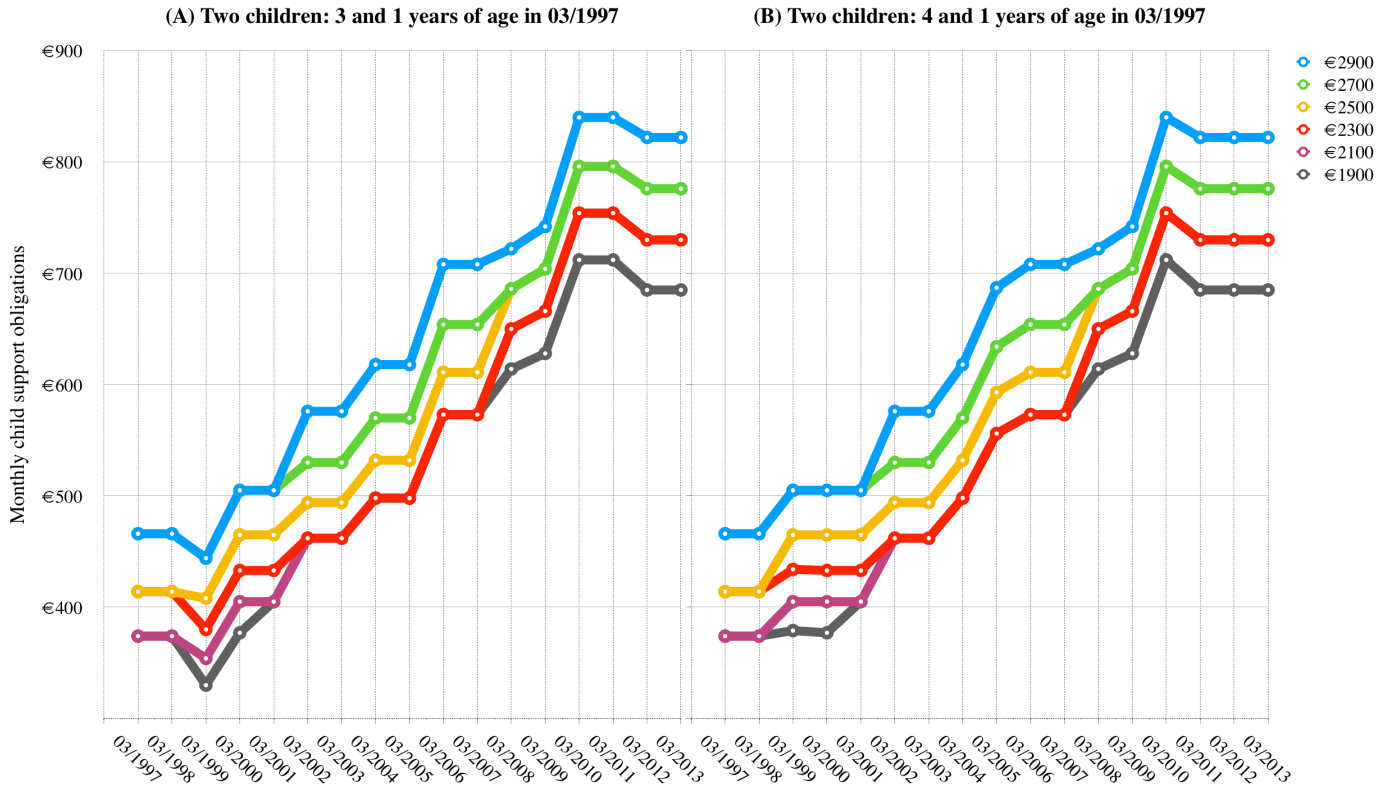
Previous research on child support enforcement/obligations and parents' labor supply produced inconclusive results. A non-resident parent could respond to an increase in child support obligations in two different ways: By increasing his/her effort to compensate for his/her loss of net income (dominating "income effect") or by decreasing his/her engagement on the labor market (dominating "substitution effect"). There is always the possibility that child support is not perceived as a tax on income by the non-resident parents (Klawitter 1994, p. 353). After all, the maintenance recipient is not a stranger to the non-resident parent, but his/her own child. A non-resident parent might even increase his/her labor supply to be able to pay a higher amount of child support (Rossin-Slater and Wüst 2017, p. 21). Also, the existence of informal working arrangements complicates conventional taxation theory (Rich et al. 2007, p. 793). Allowing the possibility of undeclared work, the liable parent can divide his time between informal labor, formal work, and non-work.

Here, it is impossible to detect an individual's decision regarding whether or not to avoid or evade child support liability. And if so, to what extent. In general, there are different possibilities of child support evasion: Evasion by leaving the country or moving without informing the authorities/payee, by underreporting earnings, or by going into debt intentionally. In the case of arrears or debt due to child support, transferring ownership of assets to a family member or a new partner is one of the ways to avoid payments of child support debt. However, it seems very unlikely that survey participants practice illegal methods of maintenance evasion. Since I include only non-resident parents who are observed at least two years post-separation and who voluntarily share private information on income etc, such problems of avoidance or evasion seem not very likely. On the other hand, parents who take part in surveys and, especially, remain

⁴⁵Ivanova et al. (2013) demonstrate that the presence of children provides an important explanation for the gender gap in re-partnering following a first marriage dissolution. Women are less likely to re-partner after separation than men. German men's likelihood of re-partnering is not significantly influenced by fatherhood. The authors argue that resident children can be obstructive to parent's re-partnering (Ivanova et al. 2013, pp. 421, 439).

in the survey after the separation are unlikely to be representative of the population of non-resident parents. It is also conceivable that participating in the study in itself increases their compliance. If one wants to make statements about all liable parents, administrative data without drop-outs seems to be more appropriate. In sum, it cannot be ruled out that some of the liable parents have made informal arrangements with their employers to avoid or reduce child maintenance. In the end, I rely on self-reported incomes, time allocation etc.

A.3. The German child support formula



Notes: (A) The first child is three years old in 03/1997 and the second child one year old. In 03/2013 the first child is 19 years, the younger child 17 years of age. For a separate listing of maintenance obligations per child. (B) The first child is four years old in 03/1997 and the second child one year old. In 03/2013 the first child is 20 years, the younger child 17 years of age; Allowable net income that is held constant is the average monthly income. Here, it ranges from €1,900 to €2,900. Child support obligations are monthly payments, after deduction of the corresponding share of the child benefit. The presented values are not adjusted for inflation and rounded to full amounts. Source: Gnann 1995, p. 64; Suhrkamp Verlag 1998, pp. 257-260; Higher Regional Court Düsseldorf 1999, p. 1; Higher Regional Court Düsseldorf 2002, p. 1; Higher Regional Court Düsseldorf 2003, p. 1; Higher Regional Court Düsseldorf 2005, p. 1; Higher Regional Court Düsseldorf 2007, p. 1; Higher Regional Court Düsseldorf 2008, p. 1; Higher Regional Court Düsseldorf 2009, p. 1; Higher Regional Court Düsseldorf 2010, p. 1; Higher Regional Court Düsseldorf 2011, p. 1; Higher Regional Court Düsseldorf 2013, p. 1

Figure A.2: Examples of variation in monthly child support obligations for two children

A.4. Self-reported average amount of child support

A.4.1. Survey question

The SOEP asks if payments or financial support were made by the respondent to their own children (including son-in-law or daughter-in-law) outside the household in the previous year. The respondent can indicate the amount paid. The question in 2013, for example, is, “What was approximately the total amount in 2012?”⁴⁶ I.e., it cannot be distinguished whether the money was paid voluntarily or as consequence of child support obligation.

⁴⁶I use the variable “plj0136” from SOEPlong v30.

The second problem with this survey question is that the respondent is asked to provide an amount that relates to the whole year. This is unfortunate as liable parents pay an amount for child maintenance on a monthly basis. That is, the respondent first has to extrapolate this monthly amount to the whole year. Accordingly, erroneous amounts are likely to be reported. It would be better to ask how many months of child support were provided last year. In addition, the monthly amount should be queried.

The discrepancy between the amounts I have determined and the self-reported data could be the result of the following factors: Recall bias, errors in extrapolation of monthly amounts, rounding errors while calculating, response bias like socially desirable answers⁴⁷, erroneous statements of own income, income from undeclared work, etc. It would be negligent to interpret the discrepancy as simply reflecting an over- or underpayment. Of course, there are also cases with obvious contradictory information. For example, one father states that he has not worked since 2010 and does not have any other income (for example unemployment benefit II). At the same time, this parent states in 2012 that in the previous year he had paid €15,000 to his own children. In such cases, it is unclear whether the income or the amount of child support is reported incorrectly. It is also possible that this person works in the informal sector and reports his “official” income, but not his undeclared work (including income and working hours).

A.4.2. Results

Before presenting FE-IV results, it should be pointed out that there is an indication of a selective response behavior on the part of the parents. Comparing parent-year observations with a self-report in child support amount with those with missing information reveal some significant differences. On average, the former have higher educational attainment and LFP, and more experience in full-time employment. The nonresponse sample has significantly more minor children living in its household post-separation, on average. Further, child support obligations for observations with self-report is higher in comparison to observations with nonresponse, on average.

The sample of non-resident parents that is included in FE-IV models reports positive amounts of child support (including zero) at least two times. Based on 1,021 parent-year observations, the self-reported child support payment is €335.40 per month on average. 53% of observations are classified as paying at least the amount of child support that has been mandated.

There is a positive correlation between obligation and payment when I control for parent’s age as a second order polynomial, his/her highest educational attainment, and year fixed effects in my FE-IV model: I find that a €10 increase in a parent’s monthly child support obligation is associated with a €2.42 increase in his/her self-reported monthly payment.⁴⁸ When I include youngest child’s age as a second order polynomial and the number of minors entitled to child support, the coefficient is reduced to €0.93. For parents with an intermediate level of education or less, the coefficient of interest does not vary greatly between the different specifications: It ranges between €2.90 and €1.98. For more educated parents, the coefficient is €1.80 and is not statistically significant at the 0.10 level when including – only – parent’s age as a second order polynomial and year fixed effects. When additionally controlling for parent’s highest educational attainment, youngest child’s age as a second order polynomial, and the number of minor children outside the household, the coefficient of interest is €0.67.

Note, the null hypothesis that the potentially endogenous regressor, *Obl*, can be treated as exogenous is not rejected in all FE-IV models when taking into account all non-resident parents and less educated parents. When I run FE regressions for less educated parents the response is smaller in comparison to the FE-IV models: A €10 increase in a parent’s monthly child support obligation is now associated

⁴⁷Bröckel and Andreß, who also use the SOEP in their analysis, point to the discrepancy in the given information on child support amount by non-resident and resident parent. They also argue, that self-reported payments might be exaggerated by the liable parent in order to be perceived as a generous and responsible parent by the interviewer (Bröckel and Andreß 2015, p. 290).

⁴⁸In comparison, Rossin-Slater and Wüst (2017) find that a 1,000DKK (\$160) increase in a father’s annual obligation is associated with a 273DKK (\$45) increase in his average annual payment (significant at 0.10 level; Rossin-Slater and Wüst 2017, p. 19).

with a €1.40 instead of a €1.98 increase in his/her self-reported monthly payment.⁴⁹ For more educated parents the coefficient is similar – about €1.39 – but not statistically significant at 0.10 level.

Further, it is shown that higher child support obligations reduce the likelihood of reportedly paying the amount of the obligations or more by about 1.6 percentage points (about 3% at the sample mean; Column (3) of Panel A in Appendix Table A.10). A negative coefficient suggests that payments defined by the courts may be in part substituting for voluntary child support that parents would have otherwise paid. Also of note here, the null hypothesis that the potentially endogenous regressor, *Obl*, can be treated as exogenous cannot be rejected. The response is somewhat stronger when estimating FE models: For less educated parents it is about -1.7 instead of -1.4 percentage points in FE-IV models. For more educated parents, however, the coefficients do not differ very much in FE and FE-IV models: A reduction by about 2.0-2.1 percentage points (about 4% at the sample mean).

Note, I do not analyze actual payments; rather I analyze self-reported payments from the parents liable for child support. Therefore, these findings should be interpreted with caution. There are other explanations for the discrepancy between obligations and self-reported payments besides the ones stated in Section A.4.1: Imperfect compliance, informal agreement between the former couple, missing adjustment to changes in the child support formula, and changing in-kind payments. Keep in mind, the measurement in the SOEP of child support is problematic.

The findings reported should certainly be taken in light of the natural shortcomings in the data, however, it is also noted that they are in line with Rossin-Slater's and Wüst's (2017) study of Danish fathers. There is a lack of perfect correlation between obligations and payments. Further, the authors find indication for partial substitution of obligations for child support paid voluntarily. I.e., there is a negative relationship between higher obligations and the likelihood of paying more than the mandated amount of child support (Rossin-Slater and Wüst 2017, pp. 3, 19).

⁴⁹My preferred specification includes parent's age as a second order polynomial, his/her highest educational attainment, the number of his/her minor children outside the household, youngest child's age as a second order polynomial, and year fixed effects (see, e.g., Column (3) of Appendix Table A.11).

Table A.7: Differences between response and nonresponse of paid child support

	Mean		Difference	N	
	Response	Nonresponse		Response	Nonresponse
Survey year	2002.494	2003.45	-0.956***	1,080	1,506
Gender (1=female; 0=male)	0.026	0.027	-0.001	1,080	1,506
Individual's age	42.159	41.738	0.421	1,080	1,506
Highest educational attainment (CASMIN)	4.762	4.399	0.363***	1,080	1,506
Living in East Germany (1=yes;0=no)	0.184	0.195	-0.011	1,080	1,506
Migration background (1=yes;0=no)	0.129	0.193	-0.064***	1,080	1,506
Labor force participation (1=yes;0=no)	0.933	0.802	0.131***	1,080	1,506
Full-time employed (1=yes;0=no)	0.916	0.766	0.149***	1,080	1,506
Experience in full-time employment (in yrs)	19.942	18.475	1.467***	1,080	1,506
Experience in part-time employment (in yrs)	0.368	0.468	-0.100*	1,080	1,506
No. of children in household (< 1 yrs old)	0.026	0.035	-0.009	1,080	1,506
No. of children in household (2-4 yrs old)	0.057	0.062	-0.005	1,080	1,506
No. of children in household (5-7 yrs old)	0.035	0.060	-0.025***	1,080	1,506
No. of children in household (8-10 yrs old)	0.031	0.043	-0.012	1,080	1,506
No. of children in household (11-12 yrs old)	0.016	0.042	-0.026***	1,080	1,506
No. of children in household (13-15 yrs old)	0.031	0.052	-0.021**	1,080	1,506
No. of children in household (16-18 yrs old)	0.030	0.040	-0.010	1,080	1,506
Partner's age	36.895	35.968	0.927	409	564
Partner's CASMIN	4.488	4.341	0.147	336	463
Hours spent on childcare (average weekday)	0.423	0.702	-0.280***	977	1,367
Time spent with children (0=no; 1=yes)	0.209	0.254	-0.045**	977	1,367
Hours spent on childcare (av. weekend day)	1.980	2.099	-0.119	435	679
Time spent with children (0=no; 1=yes)	0.382	0.401	-0.019	435	679
No. of entitled children (0-17 yrs old)	1.120	1.050	0.070***	1,080	1,506
No. of entitled children (0-20 yrs old)	1.335	1.319	0.016	1,080	1,506
No. of entitled children (< 1 yrs old)	0.005	0.003	0.002	1,080	1,506
No. of entitled children (2-4 yrs old)	0.074	0.086	-0.012	1,080	1,506
No. of entitled children (5-7 yrs old)	0.166	0.176	-0.010	1,080	1,506
No. of entitled children (8-10 yrs old)	0.231	0.215	0.015	1,080	1,506
No. of entitled children (11-12 yrs old)	0.189	0.157	0.032**	1,080	1,506
No. of entitled children (13-15 yrs old)	0.279	0.245	0.034*	1,080	1,506
No. of entitled children (16-18 yrs old)	0.256	0.260	-0.004	1,080	1,506
No. of entitled children (19-20 yrs old)	0.137	0.179	-0.042***	1,080	1,506
Child support obligation <i>Obl</i>	311.891	265.006	46.885***	1,080	1,506
Instrument for child support obl. <i>Obl_IV</i>	300.282	254.108	46.174***	1,080	1,506
Recourse rate (proxy for enforcement)	0.206	0.206	0.000	878	1,218
(Re)marriage (1=married; 0=otherwise)	0.196	0.217	-0.020	1,014	1,445
No. of new bio children	0.141	0.155	-0.014	1,080	1,506
New bio children (1=yes; 0=no)	0.106	0.108	-0.003	1,080	1,506

Notes: All sums of money are in year 2000 real €. Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Table A.8: Descriptive statistics, sample used in Tables A.9 and A.10

	Mean	Min	Max	Standard deviations			N
				Overall	Between	Within	
Survey year	2002.39	1985	2012	6.37	5.89	2.91	1,021
Gender (1=female; 0=male)	0.03	0	1	0.16	0.16	0	1,021
Individual's age	42.30	22	67	7.57	7.42	2.91	1,021
Highest educational attainment (CASMIN)	4.79	1	9	2.28	2.21	0.23	1,021
Living in East Germany (1=yes;0=no)	0.18	0	1	0.39	0.41	0.06	1,021
Migration background (1=yes;0=no)	0.13	0	1	0.33	0.32	0	1,021
Labor force participation (1=yes;0=no)	0.94	0	1	0.24	0.22	0.16	1,021
Full-time employed (1=yes;0=no)	0.92	0	1	0.27	0.25	0.16	1,021
Experience in full-time employment (in yrs)	20.15	0	43.1	7.84	7.84	2.74	1,021
Experience in part-time employment (in yrs)	0.37	0	12.2	1.23	1.45	0.25	1,021
No. of children in household (< 1 yrs old)	0.03	0	2	0.17	0.09	0.15	1,021
No. of children in household (2-4 yrs old)	0.06	0	2	0.25	0.17	0.19	1,021
No. of children in household (5-7 yrs old)	0.04	0	1	0.19	0.09	0.16	1,021
No. of children in household (8-10 yrs old)	0.03	0	1	0.18	0.12	0.14	1,021
No. of children in household (11-12 yrs old)	0.02	0	1	0.13	0.06	0.11	1,021
No. of children in household (13-15 yrs old)	0.03	0	1	0.18	0.13	0.14	1,021
No. of children in household (16-18 yrs old)	0.03	0	2	0.19	0.12	0.14	1,021
Partner's age	36.90	20	64	9.07	9.08	3.12	400
Partner's CASMIN	4.47	1	9	1.72	1.81	0.25	329
No. of entitled children (0-17 yrs old)	1.11	0	2	0.61	0.55	0.37	1,021
No. of entitled children (0-20 yrs old)	1.33	0	2	0.47	0.43	0.21	1,021
No. of entitled children (< 1 yrs old)	0.00	0	1	0.05	0.03	0.05	1,021
No. of entitled children (2-4 yrs old)	0.06	0	1	0.24	0.20	0.19	1,021
No. of entitled children (5-7 yrs old)	0.16	0	2	0.39	0.28	0.31	1,021
No. of entitled children (8-10 yrs old)	0.23	0	2	0.44	0.28	0.37	1,021
No. of entitled children (11-12 yrs old)	0.19	0	2	0.40	0.24	0.35	1,021
No. of entitled children (13-15 yrs old)	0.29	0	2	0.48	0.31	0.40	1,021
No. of entitled children (16-18 yrs old)	0.26	0	2	0.45	0.29	0.38	1,021
No. of entitled children (19-20 yrs old)	0.14	0	2	0.35	0.27	0.27	1,021
Child support obligation <i>Obl</i>	313.78	0	952.71	175.05	160.48	87.68	1,021
Instrument for child support obl. <i>Obl_IV</i>	301.65	0	908.47	194.97	190.32	65.91	1,021
Recourse rate (proxy for enforcement)	0.21	0.04	0.36	0.06	0.05	0.03	828
(Re)marriage (1=married; 0=otherwise)	0.20	0	1	0.40	0.30	0.24	957
No. of new bio children	0.15	0	2	0.45	0.33	0.24	1,021
New bio children (1=yes; 0=no)	0.11	0	1	0.31	0.22	0.18	1,021
Self-reported child support	335.40	27.58	1,386.92	185.50	168.68	100.40	1,021
Reporting to pay \geq obligation (1=yes;0=no)	0.53	0	1	0.50	0.34	0.39	1,021

Notes: See Appendix Table A.7.

Table A.9: FE-IV (2SLS) regressions for self-reported average child support payment per month

	Average child support payment per month				
	(1)	(2)	(3)	(4)	(5)
Panel A: All non-resident parents					
Child support <i>Obl</i>	0.242*** (0.092)	0.150 (0.092)	0.093 (0.088)	0.095 (0.088)	0.080 (0.094)
Control variables	no	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	33.540	33.540	33.540	32.979	33.201
Fst. stage coef.	0.847***	0.856***	0.859***	0.855***	0.848***
Fst. stage F-stat.	380.52***	427.06***	378.58***	301.78***	306.13***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	37.47***	39.23***	39.27***	34.86***	33.97***
SW fst. stage χ^2	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
	392.46***	441.34***	391.63***	314.31***	320.08***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	6.86***	2.66	1.10	1.14	0.70
AR Wald test χ^2	7.07***	2.75*	1.14	1.19	0.74
SW LM S stat. χ^2	8.12***	3.64*	1.45	1.66	1.09
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	0.707	0.011	0.523	0.245	0.176
N	1,021	1,021	1,021	924	866
Av. obs per parent	5.2	5.2	5.2	5.0	4.9
Non-resident parents	198	198	198	185	177
Panel B: Less educated parents					
Child support <i>Obl</i>	0.290** (0.115)	0.230** (0.107)	0.198* (0.105)	0.234** (0.102)	0.217** (0.109)
Control variables	no	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	31.042	31.042	31.042	31.019	31.237
Fst. stage coef.	0.785***	0.785***	0.796***	0.819***	0.816***
Fst. stage F-stat.	170.73***	180.12***	174.27***	164.74***	178.58***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	22.49***	22.73***	23.37***	22.10***	21.03***
SW fst. stage χ^2	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
	178.21***	188.54***	182.68***	174.34***	189.89***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	5.87**	4.39**	3.34*	4.87**	3.66*
AR Wald test χ^2	6.13**	4.59**	3.50*	5.15**	3.89**
SW LM S stat. χ^2	6.96***	6.26**	5.18**	–	–
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	1.863	0.918	0.454	–	–
N	737	737	737	667	632
Av. obs per parent	5.1	5.1	5.1	4.9	4.8
Non-resident parents	145	145	145	135	131

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5. SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference. Standard errors and model tests in Columns (4) and (5) of Panel B should be interpreted with caution.

Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Table A.10: FE-IV (2SLS) regressions for the likelihood of reporting to pay the amount of the obligation or more

	Reporting to pay the amount of the obligation or more (1 = yes; 0 = no)				
	(1)	(2)	(3)	(4)	(5)
Panel A: All non-resident parents					
Child support <i>Obl</i>	-0.0134*** (0.0029)	-0.0159*** (0.0029)	-0.0162*** (0.0029)	-0.0179*** (0.0032)	-0.0181*** (0.0034)
Control variables	no	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	0.5328	0.5328	0.5328	0.5249	0.5196
Fst. stage coef.	0.847***	0.856***	0.859***	0.855***	0.848***
Fst. stage F-stat.	380.52***	427.06***	378.58***	301.78***	306.13***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	37.47***	39.23***	39.27***	34.86***	33.97***
SW fst. stage χ^2	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
	392.46***	441.34***	391.63***	314.31***	320.08***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	19.73***	29.09***	28.47***	30.56***	26.85***
AR Wald test χ^2	20.35***	30.06***	29.45***	31.83***	28.08***
SW LM S stat. χ^2	16.10***	21.82***	21.57***	22.21***	21.21***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	2.499	0.645	0.474	0.006	0.092
N	1,021	1,021	1,021	924	866
Av. obs per parent	5.2	5.2	5.2	5.0	4.9
Non-resident parents	198	198	198	185	177
Panel B: Less educated parents					
Child support <i>Obl</i>	-0.0134*** (0.0043)	-0.0143*** (0.0042)	-0.0141*** (0.0042)	-0.0143*** (0.0042)	-0.0157*** (0.0045)
Control variables	no	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	0.5156	0.5156	0.5156	0.5112	0.5127
Fst. stage coef.	0.785***	0.785***	0.796***	0.819***	0.816***
Fst. stage F-stat.	170.73***	180.12***	174.27***	164.74***	178.58***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	22.49***	22.73***	23.37***	22.10***	21.03***
SW fst. stage χ^2	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
	178.21***	188.54***	182.68***	174.34***	189.89***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	9.42***	11.02***	10.75***	11.46***	11.79***
AR Wald test χ^2	9.83***	11.54***	11.27***	12.13***	12.54***
SW LM S stat. χ^2	11.73***	12.40***	12.61***	–	–
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	1.210	0.789	0.856	–	–
N	737	737	737	667	632
Av. obs per parent	5.1	5.1	5.1	4.9	4.8
Non-resident parents	145	145	145	135	131

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5. SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference. Standard errors and model tests in Columns (4) and (5) of Panel B should be interpreted with caution.

Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Table A.11: FE regressions for self-reported average child support payments per month, less educated parents

	Average child support payment per month					
	(1)	(2)	(3)	(4)	(5)	(6)
Child support <i>Obl</i>	0.154*** (0.051)	0.143*** (0.047)	0.140*** (0.047)	0.135*** (0.046)	0.109** (0.050)	0.103** (0.052)
Control variables	no	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes	yes
Full-time empl. (1=yes;0=no)	no	no	no	no	no	yes
Mean, dep. var.	31.042	31.042	31.042	31.019	31.237	31.237
N	737	737	737	667	632	632
Av. obs per parent	5.1	5.1	5.1	4.9	4.8	4.8
Non-resident parents	145	145	145	135	131	131
<i>Adj. R</i> ²	0.0208	0.0748	0.0848	0.1051	0.0995	0.0987

Notes: Standard errors are clustered at individual level. Singletons are excluded. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5. Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Table A.12: FE regressions for the likelihood to pay the amount of the obligation or more, less educated parents

	Reporting to pay the amount of the obligation or more (1 = yes; 0 = no)					
	(1)	(2)	(3)	(4)	(5)	(6)
Child support <i>Obl</i>	-0.0173*** (0.0022)	-0.0173*** (0.0021)	-0.0173*** (0.0021)	-0.0170*** (0.0022)	-0.0183*** (0.0022)	-0.0185*** (0.0023)
Control variables	no	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes	yes
Full-time empl. (1=yes;0=no)	no	no	no	no	no	yes
Mean, dep. var.	0.5156	0.5156	0.5156	0.5112	0.5127	0.5127
N	737	737	737	667	632	632
Av. obs per parent	5.1	5.1	5.1	4.9	4.8	4.8
Non-resident parents	145	145	145	135	131	131
<i>Adj. R</i> ²	0.2061	0.2211	0.2201	0.2219	0.2287	0.2280

Notes: Standard errors are clustered at individual level. Singletons are excluded. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5. Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Table A.13: FE and FE-IV regressions for the likelihood to pay the amount of the obligation or more, more educated parents

	Reporting to pay the amount of the obligation or more (1 = yes; 0 = no)					
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: FE models						
Child support <i>Obl</i>	-0.0161*** (0.0031)	-0.0194*** (0.0032)	-0.0207*** (0.0033)	-0.0234*** (0.0038)	-0.0230*** (0.0039)	-0.0229*** (0.0041)
Control variables	no	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes	yes
Full-time empl. (1=yes;0=no)	no	no	no	no	no	yes
<i>Adj. R</i> ²	0.2217	0.2737	0.2772	0.3275	0.3337	0.3304
Panel B: FE-IV models						
Child support <i>Obl</i>	-0.0137*** (0.0038)	-0.0198*** (0.0041)	-0.0215*** (0.0045)	-0.0280*** (0.0047)	-0.0263*** (0.0049)	-0.0263*** (0.0049)
Control variables	no	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes	yes
Full-time empl. (1=yes;0=no)	no	no	no	no	no	yes
Mean, dep. var.	0.5775	0.5775	0.5775	0.5603	0.5385	0.5385
Fst. stage coef.	0.916***	0.952***	0.916***	0.842***	0.830***	0.839***
Fst. stage F-stat.	316.58***	506.65***	425.84***	179.90***	173.84***	167.68***
Underid. tests	H ₀ : equation is underidentified; H _a : identified					
KP rk LM stat.	16.80***	17.50***	15.20***	11.91***	11.56***	11.65***
SW fst. stage χ^2	H ₀ : endogenous regressor <i>Obl</i> is unidentified					
Weak-I-robust inf.	355.18***	572.90***	483.41***	209.71***	206.93***	200.59***
AR Wald test F-stat.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid					
AR Wald test χ^2	13.05***	22.93***	23.68***	30.60***	27.16***	26.52***
SW LM S stat. χ^2	14.64***	25.93***	26.88***	35.67***	32.33***	31.73***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous					
End. test stat. χ^2	–	–	–	–	–	–
N	284	284	284	257	234	234
Av. obs per parent	5.3	5.3	5.3	5.0	5.0	5.0
Non-resident parents	54	54	54	51	47	47

Notes: Standard errors are clustered at individual level. Singletons are excluded. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5. SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference. Note, in Panel B Columns (1)-(6) the estimated matrix of moment conditions is not of full rank. Standard errors and model tests should be interpreted with caution.

Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

A.5. (Re)marriage

Table A.14: Descriptive statistics, 1985-2013-sample used in Table A.15

	Mean	Min	Max	Standard deviations			N
				Overall	Between	Within	
Survey year	2003.30	1985	2013	6.55	6.08	3.03	2,452
Gender (1=female; 0=male)	0.03	0	1	0.16	0.20	0	2,452
Individual's age	41.90	22	84	7.87	7.69	3.03	2,452
Highest educational attainment (CASMIN)	4.56	1	9	2.14	2.13	0.23	2,452
Living in East Germany (1=yes;0=no)	0.20	0	1	0.40	0.40	0.06	2,452
Migration background (1=yes;0=no)	0.16	0	1	0.37	0.38	0	2,449
Labor force participation (1=yes;0=no)	0.85	0	1	0.35	0.29	0.22	2,452
Full-time employed (1=yes;0=no)	0.82	0	1	0.38	0.32	0.23	2,452
Experience in full-time employment (in yrs)	18.98	0	42	8.17	8.22	2.63	2,452
Experience in part-time employment (in yrs)	0.43	0	16.8	1.48	1.71	0.29	2,452
No. of children in household (< 1 yrs old)	0.03	0	2	0.18	0.08	0.16	2,452
No. of children in household (2-4 yrs old)	0.06	0	2	0.26	0.13	0.21	2,452
No. of children in household (5-7 yrs old)	0.05	0	2	0.23	0.13	0.19	2,452
No. of children in household (8-10 yrs old)	0.04	0	2	0.20	0.11	0.17	2,452
No. of children in household (11-12 yrs old)	0.03	0	2	0.18	0.10	0.15	2,452
No. of children in household (13-15 yrs old)	0.04	0	3	0.22	0.14	0.18	2,452
No. of children in household (16-18 yrs old)	0.04	0	2	0.19	0.11	0.16	2,452
Partner's age	36.43	18	64	8.51	8.15	3.33	914
Partner's CASMIN	4.43	1	9	1.70	1.86	0.36	753
No. of entitled children (0-17 yrs old)	1.08	0	2	0.63	0.56	0.42	2,452
No. of entitled children (0-20 yrs old)	1.33	1	2	0.47	0.43	0.22	2,452
No. of entitled children (< 1 yrs old)	0.00	0	2	0.07	0.04	0.06	2,452
No. of entitled children (2-4 yrs old)	0.08	0	2	0.29	0.27	0.22	2,452
No. of entitled children (5-7 yrs old)	0.17	0	2	0.39	0.29	0.32	2,452
No. of entitled children (8-10 yrs old)	0.22	0	2	0.44	0.27	0.37	2,452
No. of entitled children (11-12 yrs old)	0.17	0	2	0.38	0.21	0.35	2,452
No. of entitled children (13-15 yrs old)	0.26	0	2	0.46	0.28	0.39	2,452
No. of entitled children (16-18 yrs old)	0.26	0	2	0.46	0.28	0.39	2,452
No. of entitled children (19-20 yrs old)	0.16	0	2	0.37	0.27	0.31	2,452
Child support obligation <i>Obl</i>	284.77	0	1,084.38	187.69	168.68	90.33	2,452
Instrument for child support obligation <i>Obl_{LIV}</i>	273.34	0	1,084.38	196.77	186.93	63.31	2,452
Recourse rate (proxy for enforcement)	0.21	0.04	0.36	0.06	0.05	0.03	2,016
(Re)marriage (1=married; 0=otherwise)	0.21	0	1	0.41	0.29	0.25	2,452
No. of new bio children	0.15	0	3	0.48	0.30	0.29	2,452
New bio children (1=yes;0=no)	0.11	0	1	0.31	0.20	0.19	2,452
Self-reported child support	334.39	27.58	1386.92	188.49	178.75	97.10	1,012
Reporting to pay \geq obligation (1=yes;0=no)	0.53	0	1	0.50	0.39	0.37	1,012

Notes: All sums of money are in year 2000 real €. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9).

Table A.15: FE-IV (2SLS) regressions for (re)marriage, 1985-2013

Sample restriction	(Re)marriage (1 = (re)married after separation; 0 = otherwise)								
				More educated			Less educated		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Child support <i>Obl</i>	0.0035*	0.0021	0.0017	0.0053	0.0039	0.0039	0.0028	0.0012	0.0010
	(0.0020)	(0.0019)	(0.0019)	(0.0036)	(0.0033)	(0.0032)	(0.0023)	(0.0022)	(0.0023)
Control variables	no	yes	yes	no	yes	yes	no	yes	yes
No. of children	no	no	yes	no	no	yes	no	no	yes
Mean, dependent variable	0.2076	0.2076	0.2076	0.1864	0.1864	0.1864	0.2138	0.2138	0.2138
First stage coefficient	0.714***	0.697***	0.6927***	0.851***	0.854***	0.849***	0.643***	0.627***	0.624***
First stage F-statistic	156.89***	150.38***	139.71***	130.88***	154.05***	160.34***	78.21***	75.98***	69.79***
Underidentification tests	H ₀ : equation is underidentified; H _a : identified								
Kleibergen-Paap rk LM statistic	55.32***	56.46***	55.14***	17.95***	19.39***	19.37***	37.68***	37.89***	36.66***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified								
Sanderson-Windmeijer first stage χ^2	159.19***	152.71***	141.94***	139.62***	164.96***	172.02***	79.70***	77.51***	71.24***
Weak-instrument-robust inference	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid								
Anderson-Rubin Wald test F-stat.	3.24*	1.22	0.98	2.28	1.43	1.59	1.46	0.30	0.17
Anderson-Rubin Wald test χ^2	3.29*	1.24	0.99	2.43	1.53	1.70	1.49	0.30	0.18
Stock-Wright LM S statistic χ^2	4.22**	1.59	1.29	–	–	–	2.00	0.41	0.24
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous								
Endogeneity test statistic χ^2	1.347	0.356	0.241	–	–	–	0.305	0.000	0.017
N	2,452	2,452	2,452	558	558	558	1,894	1,894	1,894
Av. obs per parent	6.6	6.6	6.6	6.2	6.2	6.2	6.6	6.6	6.6
Non-resident parents	374	374	374	90	90	90	287	287	287

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5. Note, in Columns (4)-(6) the estimated matrix of moment conditions is not of full rank. Standard errors and model tests should be interpreted with caution. Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Table A.16: Descriptive statistics for the time after the 2001 Law on the Proscription of Violence in Upbringing and Modification of Child Support, sample used in Tables 4 and A.18

	Mean	Min	Max	Standard deviations			N
				Overall	Between	Within	
Survey year	2007.05	2001	2013	3.50	3.11	2.32	1,664
Gender (1=female; 0=male)	0.03	0	1	0.18	0.21	0	1,664
Individual's age	43.04	22	84	7.78	7.74	2.32	1,664
Highest educational attainment (CASMIN)	4.79	1	9	2.14	2.14	0.07	1,664
Living in East Germany (1=yes;0=no)	0.22	0	1	0.42	0.42	0.05	1,664
Migration background (1=yes;0=no)	0.15	0	1	0.36	0.38	0	1,664
Labor force participation (1=yes;0=no)	0.85	0	1	0.36	0.31	0.20	1,664
Full-time employed (1=yes;0=no)	0.82	0	1	0.38	0.35	0.20	1,664
Experience in full-time employment (in yrs)	19.49	0	42	8.33	8.44	2.07	1,664
Experience in part-time employment (in yrs)	0.58	0	16.8	1.74	1.92	0.23	1,664
No. of children in household (< 1 yrs old)	0.03	0	2	0.17	0.08	0.15	1,664
No. of children in household (2-4 yrs old)	0.07	0	2	0.27	0.18	0.20	1,664
No. of children in household (5-7 yrs old)	0.06	0	2	0.25	0.15	0.20	1,664
No. of children in household (8-10 yrs old)	0.04	0	2	0.21	0.12	0.17	1,664
No. of children in household (11-12 yrs old)	0.03	0	2	0.19	0.12	0.15	1,664
No. of children in household (13-15 yrs old)	0.05	0	3	0.24	0.14	0.19	1,664
No. of children in household (16-18 yrs old)	0.04	0	2	0.20	0.12	0.16	1,664
Partner's age	38.24	18	64	8.29	8.16	2.84	603
Partner's CASMIN	4.66	2	9	1.65	1.85	0.14	505
No. of entitled children (0-17 yrs old)	1.06	0	2	0.65	0.58	0.40	1,664
No. of entitled children (0-20 yrs old)	1.34	1	2	0.47	0.43	0.22	1,664
No. of entitled children (< 1 yrs old)	0.00	0	1	0.05	0.03	0.05	1,664
No. of entitled children (2-4 yrs old)	0.07	0	2	0.28	0.26	0.20	1,664
No. of entitled children (5-7 yrs old)	0.14	0	2	0.37	0.26	0.28	1,664
No. of entitled children (8-10 yrs old)	0.20	0	2	0.42	0.29	0.34	1,664
No. of entitled children (11-12 yrs old)	0.17	0	2	0.38	0.21	0.34	1,664
No. of entitled children (13-15 yrs old)	0.27	0	2	0.47	0.29	0.39	1,664
No. of entitled children (16-18 yrs old)	0.29	0	2	0.48	0.30	0.39	1,664
No. of entitled children (19-20 yrs old)	0.19	0	2	0.40	0.31	0.31	1,664
Child support obligation <i>Obl</i>	303.65	0	1,084.38	198.10	174.96	92.87	1,664
Instrument for child support obligation <i>Obl_{LIV}</i>	293.31	0	1,084.38	208.28	197.45	66.07	1,664
Recourse rate (proxy for enforcement)	0.21	0.10	0.36	0.06	0.06	0.02	1,664
(Re)marriage (1=married; 0=otherwise)	0.19	0	1	0.39	0.32	0.20	1,664
No. of new bio children	0.17	0	3	0.49	0.41	0.23	1,664
New bio children (1=yes;0=no)	0.12	0	1	0.33	0.26	0.16	1,664
Self-reported child support	349.67	48.35	1,386.92	198.26	189.56	92.67	668
Reporting to pay \geq obligation (1=yes;0=no)	0.49	0	1	0.50	0.41	0.34	668

Notes: All sums of money are in year 2000 real €. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9).

Table A.17: Descriptive statistics for the time after the *2001 Law on the Proscription of Violence in Upbringing and Modification of Child Support*, sample used in Table 4

Variable	Mean	Min	Max	Standard deviations			N
				Overall	Between	Within	
Panel A: Non-resident parents with CASMIN ≤ 5							
Survey year	2006.80	2001	2013	3.53	3.17	2.35	1,228
Gender (1=female; 0=male)	0.03	0	1	0.17	0.21	0	1,228
Individual's age	42.47	22	68	7.58	7.49	2.35	1,228
Highest educational attainment (CASMIN)	3.69	1	5	1.13	1.14	0	1,228
Living in East Germany (1=yes;0=no)	0.21	0	1	0.41	0.41	0.07	1,228
Migration background (1=yes;0=no)	0.14	0	1	0.35	0.38	0	1,228
No. of children in household (< 1 yrs old)	0.00	0	1	0.06	0.03	0.05	1,228
No. of children in household (2-4 yrs old)	0.07	0	2	0.28	0.26	0.20	1,228
No. of children in household (5-7 yrs old)	0.14	0	2	0.36	0.24	0.29	1,228
No. of children in household (8-10 yrs old)	0.20	0	2	0.42	0.27	0.34	1,228
No. of children in household (11-12 yrs old)	0.17	0	2	0.19	0.13	0.15	1,228
No. of children in household (13-15 yrs old)	0.04	0	2	0.21	0.13	0.17	1,228
No. of children in household (16-18 yrs old)	0.04	0	2	0.21	0.13	0.16	1,228
Partner's age	37.97	18	64	8.34	8.20	3.02	472
Partner's CASMIN	4.45	2	9	1.58	1.81	0.16	405
No. of entitled children (0-17 yrs old)	1.06	0	2	0.66	0.60	0.41	1,228
No. of entitled children (0-20 yrs old)	1.35	1	2	0.48	0.43	0.23	1,228
No. of entitled children (< 1 yrs old)	0.00	0	1	0.06	0.03	0.05	1,228
No. of entitled children (2-4 yrs old)	0.07	0	2	0.28	0.26	0.20	1,228
No. of entitled children (5-7 yrs old)	0.14	0	2	0.36	0.24	0.29	1,228
No. of entitled children (8-10 yrs old)	0.20	0	2	0.42	0.27	0.34	1,228
No. of entitled children (11-12 yrs old)	0.17	0	2	0.38	0.22	0.34	1,228
No. of entitled children (13-15 yrs old)	0.28	0	2	0.46	0.29	0.38	1,228
No. of entitled children (16-18 yrs old)	0.30	0	2	0.48	0.29	0.40	1,228
No. of entitled children (19-20 yrs old)	0.20	0	2	0.40	0.31	0.32	1,228
Child support obligation <i>Obl</i>	282.26	0	826.07	189.80	161.52	92.65	1,228
Instrument for child support obligation <i>Obl_{LIV}</i>	272.23	0	879.13	199.75	186.00	62.46	1,228
Recourse rate (proxy for enforcement)	0.21	0.10	0.36	0.06	0.06	0.02	1,228
(Re)marriage (1=married;0=otherwise)	0.19	0	1	0.39	0.33	0.18	1,228
Panel B: Non-resident parents with CASMIN > 5							
Survey year	2007.76	2001	2013	3.32	2.77	2.24	436
Gender (1=female; 0=male)	0.05	0	1	0.21	0.22	0	436
Individual's age	44.63	24	84	8.14	8.21	2.24	436
Highest educational attainment (CASMIN)	7.89	6	9	0.98	0.98	0.14	436
Living in East Germany (1=yes;0=no)	0.25	0	1	0.43	0.43	0	436
Migration background (1=yes;0=no)	0.17	0	1	0.38	0.39	0	436
No. of children in household (< 1 yrs old)	0.03	0	1	0.16	0.07	0.14	436
No. of children in household (2-4 yrs old)	0.04	0	1	0.20	0.12	0.16	436
No. of children in household (5-7 yrs old)	0.03	0	1	0.17	0.12	0.12	436
No. of children in household (8-10 yrs old)	0.02	0	1	0.14	0.06	0.12	436
No. of children in household (11-12 yrs old)	0.03	0	2	0.19	0.08	0.17	436
No. of children in household (13-15 yrs old)	0.07	0	3	0.31	0.18	0.25	436
No. of children in household (16-18 yrs old)	0.04	0	1	0.19	0.11	0.15	436
Partner's age	39.21	23	57	8.04	8.16	2.05	131
Partner's CASMIN	5.49	2	9	1.65	1.80	0	100
No. of entitled children (0-17 yrs old)	1.05	0	2	0.62	0.55	0.37	436
No. of entitled children (0-20 yrs old)	1.30	1	2	0.46	0.42	0.19	436
No. of entitled children (< 1 yrs old)	0.00	0	1	0.05	0.01	0.05	436
No. of entitled children (2-4 yrs old)	0.07	0	2	0.27	0.24	0.19	436
No. of entitled children (5-7 yrs old)	0.16	0	2	0.38	0.29	0.27	436
No. of entitled children (8-10 yrs old)	0.21	0	2	0.43	0.32	0.33	436
No. of entitled children (11-12 yrs old)	0.17	0	1	0.37	0.18	0.33	436
No. of entitled children (13-15 yrs old)	0.26	0	2	0.47	0.30	0.39	436
No. of entitled children (16-18 yrs old)	0.26	0	2	0.47	0.31	0.38	436
No. of entitled children (19-20 yrs old)	0.17	0	2	0.39	0.32	0.29	436
Child support obligation <i>Obl</i>	363.90	0	1,084.38	208.56	193.65	93.59	436
Instrument for child support obligation <i>Obl_{LIV}</i>	352.70	0	1,084.38	220.26	211.12	75.42	436
Recourse rate (proxy for enforcement)	0.20	0.11	0.36	0.06	0.05	0.02	436
(Re)marriage (1=married;0=otherwise)	0.19	0	1	0.40	0.30	0.23	436

Notes: All sums of money are in year 2000 real €. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9).

Table A.18: FE-IV (2SLS) regressions for (re)marriage, after the 2001 Law on the Proscription of Violence in Upbringing and Modification of Child Support

	(Re)marriage (1 = married after separation; 0 = otherwise)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Child support <i>Obl</i>	0.0048*** (0.0018)	0.0048** (0.0019)	0.0048** (0.0019)	0.0048** (0.0019)	0.0048** (0.0019)	0.0043** (0.0017)	0.0048** (0.0019)	0.0044** (0.0017)	0.0048** (0.0019)	0.0044** (0.0017)
Year fixed effects	no	yes	yes	yes	yes	yes	yes	yes	yes	yes
Education (CASMIN)	no	no	yes	yes	yes	yes	yes	yes	yes	yes
Recourse rate	no	no	no	yes	yes	yes	yes	yes	yes	yes
Employed (1=no;0=yes)	no	no	no	no	yes	no	no	yes	yes	yes
Real allowable net income	no	no	no	no	yes	no	no	yes	yes	yes
New children living in the hh	no	no	no	no	no	yes	no	yes	no	yes
Living in East Germany	no	no	no	no	no	no	yes	no	yes	yes
Mean, dependent var.	0.1911	0.1911	0.1911	0.1911	0.1858	0.1911	0.1911	0.1858	0.1858	0.1858
Fst. stage coef.	0.740***	0.719***	0.719***	0.718***	0.725***	0.717***	0.722***	0.725***	0.727***	0.727***
Fst. stage F-stat.	129.98***	111.73***	111.53***	111.76***	131.54***	110.68***	111.93***	130.13***	130.91***	129.11***
Fst. stage t-stat.	11.40	10.57	10.56	10.57	11.47	10.52	10.58	11.41	11.44	11.36
Underidentification tests	H ₀ : equation is underidentified; H _a : identified									
Kleibergen-Paap rk LM stat.	47.00***	43.24***	43.25***	43.33***	44.99***	43.43***	43.29***	45.09***	44.90***	44.99***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified									
Sanderson-Windmeijer fst. stage χ^2	130.58***	112.98***	112.85***	113.15***	133.37***	112.54***	113.39***	132.51***	132.81***	131.55***
Weak-instrument-robust inference	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero									
Anderson-Rubin Wald test F-stat.	7.43***	6.67**	6.69**	6.70**	6.82***	6.66**	6.87***	6.90***	6.94***	7.07***
Anderson-Rubin Wald test χ^2	7.46***	6.75***	6.77***	6.78***	6.91***	6.77***	6.96***	7.02***	7.04***	7.21***
Stock-Wright LM S stat. χ^2	7.96***	10.09***	10.12***	10.16***	10.73***	13.45***	10.34***	14.61***	10.86***	14.88***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous									
Endogeneity test stat. χ^2	4.164**	3.978**	3.942**	3.944**	5.275**	3.919**	4.347**	5.633**	5.628**	6.259**
N	1,664	1,664	1,664	1,664	1,636	1,664	1,664	1,636	1,636	1,636
Av. obs per parent	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Non-resident parents	300	300	300	300	298	300	300	298	298	298

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Control variables include the individual's age as a second order polynomial, highest educational attainment (CASMIN-classification) and year fixed effects. New children living in the household means the number of minor children in each age group (0-1, . . . , 16-18 years old) in individual's household who are not entitled to child support from this individual. The recourse rate is the ratio of total government expenditure to the repayments of maintenance debtors at the federal state level. This measure is available for 1995 and since 2000 for all federal states. Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Table A.19: FE regressions for (re)marriage, after the 2001 Law on the Proscription of Violence in Upbringing and Modification of Child Support

	(Re)marriage (1 = married after separation; 0 = otherwise)					
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All non-resident parents						
Child support <i>Obl</i>	0.0018** (0.0009)	0.0012 (0.0008)	0.0010 (0.0008)	0.0009 (0.0007)	0.0010 (0.0007)	0.0011 (0.0007)
Control variables	no	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes
Full-time empl. (1=yes;0=no)	no	no	no	no	yes	yes
Work experience	no	no	no	no	no	yes
Mean, dep. var.	0.1911	0.1911	0.1911	0.1805	0.1805	0.1805
N	1,664	1,664	1,664	1,529	1,529	1,529
Av. obs per parent	5.5	5.5	5.5	5.5	5.5	5.5
Non-resident parents	300	300	300	280	280	280
<i>Adj. R</i> ²	0.1237	0.1375	0.1418	0.2348	0.2345	0.2351
Panel B: More educated parents						
Child support <i>Obl</i>	0.0024 (0.0021)	0.0013 (0.0019)	0.0013 (0.0018)	-0.0007 (0.0016)	-0.0006 (0.0017)	-0.0006 (0.0016)
Control variables	no	yes	yes	yes	yes	yes
No. of non-resident children	no	no	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes
Full-time empl. (1=yes;0=no)	no	no	no	no	yes	yes
Work experience	no	no	no	no	no	yes
Mean, dep. var.	0.1950	0.1950	0.1950	0.1811	0.1811	0.1811
N	436	436	436	381	381	381
Av. obs per parent	5.6	5.6	5.6	5.3	5.3	5.3
Non-resident parents	78	78	78	72	72	72
<i>Adj. R</i> ²	0.1876	0.21763	0.2166	0.40783	0.4092	0.4092

Notes: Standard errors are clustered at individual level. Singletons are excluded. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification), youngest non-resident child's age as a second order polynomial and recourse rate. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5.

Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

A.6. New children

Table A.20: Descriptive statistics, sample used in Tables A.21, A.23, and A.24

	Mean	Min	Max	Standard deviations			N
				Overall	Between	Within	
Survey year	2003.05	1985	2013	6.73	6.33	3.06	2,586
Gender (1=female; 0=male)	0.03	0	1	0.16	0.20	0	2,586
Individual's age	41.91	22	84	7.98	7.81	3.06	2,586
Highest educational attainment (CASMIN)	4.55	1	9	2.14	2.12	0.23	2,586
Living in East Germany (1=yes;0=no)	0.19	0	1	0.39	0.40	0.06	2,586
Migration background (1=yes;0=no)	0.17	0	1	8.57	8.12	3.50	2,586
Labor force participation (1=yes;0=no)	0.86	0	1	0.35	0.29	0.22	2,586
Full-time employed (1=yes;0=no)	0.83	0	1	0.38	0.32	0.23	2,586
Experience in full-time employment (in yrs)	19.09	0	44	8.27	8.33	2.66	2,586
Experience in part-time employment (in yrs)	0.43	0	16.8	1.47	1.69	0.29	2,586
No. of children in household (< 1 yrs old)	0.03	0	2	0.18	0.08	0.16	2,586
No. of children in household (2-4 yrs old)	0.06	0	2	0.26	0.13	0.21	2,586
No. of children in household (5-7 yrs old)	0.05	0	2	0.23	0.12	0.19	2,586
No. of children in household (8-10 yrs old)	0.04	0	2	0.20	0.11	0.17	2,586
No. of children in household (11-12 yrs old)	0.03	0	2	0.18	0.10	0.15	2,586
No. of children in household (13-15 yrs old)	0.04	0	3	0.22	0.14	0.18	2,586
No. of children in household (16-18 yrs old)	0.04	0	2	0.19	0.10	0.16	2,586
No. of children in household (0-18 yrs old)	0.28	0	4	0.63	0.44	0.42	2,586
Having minor children in household	0.20	0	1	0.40	0.28	0.27	2,586
Partner's age	36.36	18	64	8.57	8.12	3.50	973
Partner's CASMIN	4.40	1	9	1.72	1.84	0.38	799
No. of entitled children (0-17 yrs old)	1.08	0	2	0.63	0.56	0.42	2,586
No. of entitled children (0-20 yrs old)	1.33	1	2	0.47	0.43	0.22	2,586
No. of entitled children (< 1 yrs old)	0.00	0	2	0.07	0.04	0.06	2,586
No. of entitled children (2-4 yrs old)	0.08	0	2	0.29	0.26	0.22	2,586
No. of entitled children (5-7 yrs old)	0.17	0	2	0.40	0.29	0.33	2,586
No. of entitled children (8-10 yrs old)	0.22	0	2	0.43	0.28	0.37	2,586
No. of entitled children (11-12 yrs old)	0.17	0	2	0.38	0.21	0.35	2,586
No. of entitled children (13-15 yrs old)	0.26	0	2	0.46	0.28	0.39	2,586
No. of entitled children (16-18 yrs old)	0.26	0	2	0.45	0.28	0.39	2,586
No. of entitled children (19-20 yrs old)	0.16	0	2	0.37	0.27	0.31	2,586
Child support obligation <i>Obl</i>	284.59	0	1,084.38	185.23	165.99	90.24	2,586
Instrument for child support obligation <i>OblIV</i>	273.39	0	1,084.38	194.00	185.39	63.09	2,586
Recourse rate (proxy for enforcement)	0.21	0.04	0.36	0.06	0.05	0.03	2,096
(Re)marriage (1=married; 0=otherwise)	0.21	0	1	0.41	0.30	0.25	2,459
No. of new bio children	0.15	0	3	0.47	0.28	0.29	2,586
New bio children (1=yes;0=no)	0.11	0	1	0.31	0.19	0.19	2,586
Self-reported child support	332.81	27.58	1386.92	186.88	178.51	97.62	1,080
Reporting to pay \geq obligation (1=yes;0=no)	0.53	0	1	0.50	0.39	0.38	1,080

Notes: All sums of money are in year 2000 real €. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9).

Table A.21: FE-IV (2SLS) regressions for number of minor children living in the household post-separation

	Number of minor children in the household				
	(1)	(2)	(3)	(4)	(5)
Panel A: All non-resident parents					
Child support <i>Obl</i>	-0.0026 (0.0029)	-0.0055* (0.0031)	-0.0058* (0.0031)	-0.0076** (0.0031)	-0.0079** (0.0032)
Control variables	no	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	0.2769	0.2769	0.2769	0.2651	0.2670
Fst. stage coef.	0.725***	0.706***	0.701***	0.695***	0.684***
Fst. stage F-stat.	180.67***	170.42***	156.54***	133.45***	118.49***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	58.33***	60.02***	58.50***	53.82***	50.46***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
SW fst. stage χ^2	183.19***	172.93***	158.91***	135.84***	120.77***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	0.77	3.09*	3.50*	5.99**	6.01**
AR Wald test χ^2	0.78	3.14*	3.55*	6.09**	6.12**
SW LM S stat. χ^2	1.19	5.10**	6.25**	14.23***	15.46***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	0.897	2.596	2.860*	4.756**	4.948**
N	2,586	2,586	2,586	2,358	2,247
Av. obs per parent	6.7	6.7	6.7	6.5	6.3
Non-resident parents	388	388	388	363	354
Panel B: Less educated parents					
Child support <i>Obl</i>	-0.0042 (0.0044)	-0.0069 (0.0044)	-0.0072* (0.0043)	-0.0094** (0.0040)	-0.0098** (0.0040)
Control variables	no	yes	yes	yes	yes
No. of non-resident children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	0.2928	0.2928	0.2928	0.2867	0.2862
Fst. stage coef.	0.650***	0.635***	0.633***	0.641***	0.632***
Fst. stage F-stat.	86.40***	84.13***	77.50***	72.05***	65.99***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	39.72***	40.04***	38.73***	37.18***	35.52***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
SW fst. stage χ^2	87.98***	85.75***	79.03***	73.73***	67.63***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	0.92	2.34	2.60	4.92**	5.41**
AR Wald test χ^2	0.93	2.38	2.65	5.03**	5.54**
SW LM S stat. χ^2	1.51	4.16**	4.59**	11.25***	13.09***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	0.538	1.458	1.624	3.694*	4.017**
N	1,991	1,991	1,991	1,821	1,747
Av. obs per parent	6.7	6.7	6.7	6.6	6.4
Non-resident parents	299	299	299	278	272

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5. SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference.

Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Table A.22: FE-IV (2SLS) regressions for the likelihood to have minor children in the household post-separation

	Minor children living in the household (1 = yes; 0 = no)				
	(1)	(2)	(3)	(4)	(5)
Panel A: All non-resident parents					
Child support <i>Obl</i>	-0.0007 (0.0020)	-0.0027 (0.0021)	-0.0027 (0.0021)	-0.0033* (0.0017)	-0.0031* (0.0018)
Control variables	no	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	0.1953	0.1953	0.1953	0.1841	0.1829
Fst. stage coef.	0.725***	0.706***	0.701***	0.695***	0.684***
Fst. stage F-stat.	180.67***	170.42***	156.54***	133.45***	118.49***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	58.33***	60.02***	58.50***	53.82***	50.46***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
SW fst. stage χ^2	183.19***	172.93***	158.91***	135.84***	120.77***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	0.12	1.68	1.64	3.21*	2.81*
AR Wald test χ^2	0.12	1.70	1.67	3.26*	2.86*
SW LM S stat. χ^2	0.16	2.28	2.22	5.76**	6.08**
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	0.051	1.062	1.056	1.476	1.179
N	2,586	2,586	2,586	2,358	2,247
Av. obs per parent	6.7	6.7	6.7	6.5	6.3
Non-resident parents	388	388	388	363	354
Panel B: Less educated parents					
Child support <i>Obl</i>	-0.0015 (0.0030)	-0.0033 (0.0030)	-0.0034 (0.0030)	-0.0042* (0.0023)	-0.0039* (0.0022)
Control variables	no	yes	yes	yes	yes
No. of non-resident children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	0.2029	0.2029	0.2029	0.1977	0.1946
Fst. stage coef.	0.650***	0.635***	0.633***	0.641***	0.632***
Fst. stage F-stat.	86.40***	84.13***	77.50***	72.05***	65.99***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	39.72***	40.04***	38.73***	37.18***	35.52***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
SW fst. stage χ^2	87.98***	85.75***	79.03***	73.73***	67.63***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	0.25	1.20	1.19	2.89*	2.73*
AR Wald test χ^2	0.26	1.22	1.22	2.96*	2.80*
SW LM S stat. χ^2	0.35	1.74	1.73	6.11**	7.49***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	0.004	0.342	0.349	1.011	0.762
N	1,991	1,991	1,991	1,821	1,747
Av. obs per parent	6.7	6.7	6.7	6.6	6.4
Non-resident parents	299	299	299	278	272

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5. SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference. Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Table A.23: FE-IV (2SLS) regressions for the number of new biological children post-separation

	Number of new biological children				
	(1)	(2)	(3)	(4)	(5)
Panel A: All non-resident parents					
Child support <i>Obl</i>	-0.0039*	-0.0054**	-0.0060***	-0.0067***	-0.0071***
	(0.0020)	(0.0022)	(0.0022)	(0.0024)	(0.0025)
Control variables	no	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	0.1489	0.1489	0.1489	0.1472	0.1531
Fst. stage coef.	0.725***	0.706***	0.701***	0.695***	0.684***
Fst. stage F-stat.	180.67***	170.42***	156.54***	133.45***	118.49***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	58.33***	60.02***	58.50***	53.82***	50.46***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
SW fst. stage χ^2	183.19***	172.93***	158.91***	135.84***	120.77***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	3.81*	6.34**	7.72***	8.06***	8.36***
AR Wald test χ^2	3.87**	6.43**	7.84***	8.20***	8.52***
SW LM S stat. χ^2	7.42***	13.31***	18.05***	20.94***	26.54***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	3.567*	4.874**	5.939**	5.904**	6.100**
N	2,586	2,586	2,586	2,358	2,247
Av. obs per parent	6.7	6.7	6.7	6.5	6.3
Non-resident parents	388	388	388	363	354
Panel B: Less educated parents					
Child support <i>Obl</i>	-0.0072**	-0.0081***	-0.0088***	-0.0089***	-0.0094***
	(0.0030)	(0.0031)	(0.0031)	(0.0032)	(0.0032)
Control variables	no	yes	yes	yes	yes
No. of non-resident children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	0.1547	0.1547	0.1547	0.15211	0.1568
Fst. stage coef.	0.650***	0.635***	0.633***	0.641***	0.632***
Fst. stage F-stat.	86.40***	84.13***	77.50***	72.05***	65.99***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	39.72***	40.04***	38.73***	37.18***	35.52***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
SW fst. stage χ^2	87.98***	85.75***	79.03***	73.73***	67.63***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	5.84**	7.02***	8.18***	7.82***	8.46***
AR Wald test χ^2	5.95**	7.16***	8.34***	8.00***	8.67***
SW LM S stat. χ^2	11.42***	13.80***	17.43***	20.29***	27.36***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	4.934**	5.353**	6.376**	6.158**	6.455**
N	1,991	1,991	1,991	1,821	1,747
Av. obs per parent	6.7	6.7	6.7	6.6	6.4
Non-resident parents	299	299	299	278	272

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5. SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference.

Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Table A.24: FE-IV (2SLS) regressions for having new biological children

	New biological children (1 = yes; 0 = no)				
	(1)	(2)	(3)	(4)	(5)
Panel A: All non-resident parents					
Child support <i>Obl</i>	-0.0012 (0.0013)	-0.0024* (0.0014)	-0.0027* (0.0014)	-0.0027* (0.0014)	-0.0029* (0.0015)
Control variables	no	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	0.1071	0.1071	0.1071	0.1069	0.1108
Fst. stage coef.	0.725***	0.706***	0.701***	0.695***	0.684***
Fst. stage F-stat.	180.67***	170.42***	156.54***	133.45***	118.49***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	58.33***	60.02***	58.50***	53.82***	50.46***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
SW fst. stage χ^2	183.19***	172.93***	158.91***	135.84***	120.77***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	0.66	2.80*	3.67*	3.57*	3.70*
AR Wald test χ^2	0.67	2.84*	3.73*	3.64*	3.78*
SW LM S stat. χ^2	1.18	5.19**	6.89***	7.78***	10.64***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	0.877	2.349	2.921*	2.380	2.303
N	2,586	2,586	2,586	2,358	2,247
Av. obs per parent	6.7	6.7	6.7	6.5	6.3
Non-resident parents	388	388	388	363	354
Panel B: Less educated parents					
Child support <i>Obl</i>	-0.0023 (0.0020)	-0.0038* (0.0021)	-0.0042** (0.0021)	-0.0037* (0.0019)	-0.0039* (0.0020)
Control variables	no	yes	yes	yes	yes
No. of non-resident children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	0.1085	0.1085	0.1085	0.1076	0.1105
Fst. stage coef.	0.650***	0.635***	0.633***	0.641***	0.632***
Fst. stage F-stat.	86.40***	84.13***	77.50***	72.05***	65.99***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	39.72***	40.04***	38.73***	37.18***	35.52***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
SW fst. stage χ^2	87.98***	85.75***	79.03***	73.73***	67.63***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	2.11	3.45*	4.21**	3.53*	3.77*
AR Wald test χ^2	2.14	3.51*	4.29**	3.61*	3.87**
SW LM S stat. χ^2	3.98	6.63**	8.07***	8.74***	11.63***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	1.751	2.608	3.152*	2.536	2.452
N	1,991	1,991	1,991	1,821	1,747
Av. obs per parent	6.7	6.7	6.7	6.6	6.4
Non-resident parents	299	299	299	278	272

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). More educated is defined as having a CASMIN > 5, less educated as CASMIN ≤ 5. SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference. Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Table A.25: Descriptive statistics for non-resident parents younger than 50 years old, sample used in Table 5

	Mean	Min	Max	Standard deviations			N
				Overall	Between	Within	
Panel A: All non-resident parents							
Survey year	2002.74	1985	2013	6.81	6.53	2.97	2,224
Gender (1=female; 0=male)	0.03	0	1	0.17	0.21	0	2,224
Individual's age	39.75	22	50	6.07	6.03	2.97	2,224
Highest educational attainment (CASMIN)	4.42	1	9	2.06	2.08	0.23	2,224
Living in East Germany (1=yes;0=no)	0.20	0	1	0.40	0.40	0.06	2,224
Migration background (1=yes;0=no)	0.17	0	1	0.38	0.39	0	2,224
Labor force participation (1=yes;0=no)	0.87	0	1	0.34	0.27	0.22	2,224
Full-time employed (1=yes;0=no)	0.84	0	1	0.36	0.31	0.23	2,224
Experience in full-time employment (in yrs)	17.09	0	35.4	6.84	7.00	2.64	2,224
No. of children in household (< 1 yrs old)	0.03	0	2	0.19	0.08	0.17	2,224
No. of children in household (2-4 yrs old)	0.07	0	2	0.27	0.13	0.22	2,224
No. of children in household (5-7 yrs old)	0.06	0	2	0.24	0.13	0.20	2,224
No. of children in household (8-10 yrs old)	0.04	0	2	0.21	0.11	0.18	2,224
No. of children in household (11-12 yrs old)	0.03	0	2	0.18	0.11	0.16	2,224
No. of children in household (13-15 yrs old)	0.05	0	3	0.23	0.13	0.19	2,224
No. of children in household (16-18 yrs old)	0.04	0	2	0.20	0.10	0.16	2,224
Partner's age	35.31	18	64	7.73	7.55	3.19	885
Partner's CASMIN	4.34	1	9	1.64	1.79	0.37	740
No. of entitled children (0-17 yrs old)	1.13	0	2	0.61	0.56	0.38	2,224
No. of entitled children (0-20 yrs old)	1.34	1	2	0.47	0.45	0.18	2,224
No. of entitled children (< 1 yrs old)	0.00	0	2	0.07	0.04	0.06	2,224
No. of entitled children (2-4 yrs old)	0.09	0	2	0.30	0.28	0.23	2,224
No. of entitled children (5-7 yrs old)	0.19	0	2	0.41	0.31	0.33	2,224
No. of entitled children (8-10 yrs old)	0.24	0	2	0.45	0.28	0.38	2,224
No. of entitled children (11-12 yrs old)	0.18	0	2	0.39	0.22	0.35	2,224
No. of entitled children (13-15 yrs old)	0.27	0	2	0.46	0.29	0.39	2,224
No. of entitled children (16-18 yrs old)	0.24	0	2	0.44	0.29	0.37	2,224
No. of entitled children (19-20 yrs old)	0.13	0	2	0.34	0.24	0.29	2,224
Child support obligation <i>Obl</i>	279.32	0	861.23	179.58	164.51	88.13	2,224
Instrument for child support obligation <i>OblLIV</i>	266.81	0	908.47	187.75	183.11	56.96	2,224
Recourse rate (proxy for enforcement)	0.21	0.04	0.36	0.06	0.06	0.03	1,775
(Re)marriage (1=married; 0=otherwise)	0.22	0	1	0.41	0.31	0.25	2,129
No. of new bio children	0.17	0	3	0.49	0.29	0.30	2,224
New bio children (1=yes;0=no)	0.12	0	1	0.32	0.20	0.20	2,224
Panel B: Less educated parent							
Survey year	2002.13	1985	2013	6.80	6.58	3.01	1,780
Gender (1=female; 0=male)	0.2	0	1	0.15	0.20	0	1,780
Individual's age	39.48	22	50	6.15	6.17	3.01	1,780
Highest educational attainment (CASMIN)	3.55	1	5	1.12	1.14	0.22	1,780
Living in East Germany (1=yes;0=no)	0.19	0	1	0.39	0.40	0.06	1,780
Migration background (1=yes;0=no)	0.17	0	1	0.37	0.39	0	1,780
Labor force participation (1=yes;0=no)	0.85	0	1	0.36	0.28	0.24	1,780
Full-time employed (1=yes;0=no)	0.83	0	1	0.38	0.31	0.24	1,780
Experience in full-time employment (in yrs)	17.52	0.20	35.40	6.91	7.07	2.63	1,780
No. of children in household (< 1 yrs old)	0.03	0	2	0.19	0.08	0.17	1,780
No. of children in household (2-4 yrs old)	0.07	0	2	0.28	0.14	0.23	1,780
No. of children in household (5-7 yrs old)	0.06	0	2	0.25	0.14	0.21	1,780
No. of children in household (8-10 yrs old)	0.05	0	2	0.23	0.13	0.19	1,780
No. of children in household (11-12 yrs old)	0.03	0	2	0.19	0.11	0.15	1,780
No. of children in household (13-15 yrs old)	0.04	0	2	0.21	0.13	0.17	1,780
No. of children in household (16-18 yrs old)	0.04	0	2	0.20	0.11	0.17	1,780
Partner's age	35.33	18	64	7.96	7.75	3.21	752
Partner's CASMIN	4.14	1	9	1.59	1.78	0.40	633
No. of entitled children (0-17 yrs old)	1.14	0	2	0.62	0.57	0.39	1,780
No. of entitled children (0-20 yrs old)	1.35	1	2	0.48	0.46	0.19	1,780
No. of entitled children (< 1 yrs old)	0.00	0	2	0.07	0.05	0.05	1,780
No. of entitled children (2-4 yrs old)	0.09	0	2	0.30	0.29	0.22	1,780
No. of entitled children (5-7 yrs old)	0.18	0	2	0.41	0.30	0.34	1,780
No. of entitled children (8-10 yrs old)	0.24	0	2	0.45	0.27	0.39	1,780
No. of entitled children (11-12 yrs old)	0.18	0	2	0.39	0.23	0.36	1,780
No. of entitled children (13-15 yrs old)	0.27	0	2	0.46	0.29	0.39	1,780
No. of entitled children (16-18 yrs old)	0.25	0	2	0.45	0.28	0.38	1,780
No. of entitled children (19-20 yrs old)	0.13	0	2	0.34	0.22	0.30	1,780
Child support obligation <i>Obl</i>	265.63	0	826.07	173.21	153.77	88.21	1,780
Instrument for child support obligation <i>OblLIV</i>	255.06	0	879.13	183.15	175.74	55.59	1,780
Recourse rate (proxy for enforcement)	0.21	0.06	0.36	0.06	0.06	0.03	1,401
(Re)marriage (1=married; 0=otherwise)	0.23	0	1	0.42	0.32	0.25	1,697
No. of new bio children	0.17	0	3	0.51	0.31	0.31	1,780
New bio children (1=yes;0=no)	0.12	0	1	0.32	0.20	0.20	1,780

Notes: All sums of money are in year 2000 real €. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9).

Table A.26: Descriptive statistics for non-resident parents younger than 45 years old, sample used in Table A.27

	Mean	Min	Max	Standard deviations			N
				Overall	Between	Within	
Panel A: Parents with CASMIN ≤ 5							
	2001.64	1985	2013	6.74	6.57	2.77	1,452
Gender (1=female; 0=male)	0.01	0	1	0.11	0.14	0	1,452
Individual's age	37.66	22	45	5.29	5.18	2.77	1,452
Highest educational attainment (CASMIN)	3.58	1	5	1.21	1.15	0.22	1,452
Living in East Germany (1=yes;0=no)	0.19	0	1	0.39	0.40	0.07	1,452
Migration background (1=yes;0=no)	0.18	0	1	0.38	0.39	0	1,452
Labor force participation (1=yes;0=no)	0.85	0	1	0.36	0.27	0.24	1,452
Full-time employed (1=yes;0=no)	0.83	0	1	0.38	0.30	0.24	1,452
Experience in full-time employment (in yrs)	15.86	0.20	30.30	6.08	6.03	2.40	1,452
No. of children in household (< 1 yrs old)	0.04	0	2	0.20	0.09	0.18	1,452
No. of children in household (2-4 yrs old)	0.08	0	2	0.30	0.15	0.23	1,452
No. of children in household (5-7 yrs old)	0.07	0	2	0.27	0.15	0.23	1,452
No. of children in household (8-10 yrs old)	0.05	0	2	0.23	0.15	0.19	1,452
No. of children in household (11-12 yrs old)	0.04	0	2	0.19	0.12	0.15	1,452
No. of children in household (13-15 yrs old)	0.05	0	2	0.22	0.15	0.17	1,452
No. of children in household (16-18 yrs old)	0.04	0	2	0.21	0.13	0.17	1,452
Partner's age	33.90	18	60	7.24	7.25	2.90	636
Partner's CASMIN	4.17	1	9	1.63	1.79	0.42	547
No. of entitled children (0-17 yrs old)	1.22	0	2	0.58	0.54	0.30	1,452
No. of entitled children (0-20 yrs old)	1.36	1	2	0.48	0.48	0.13	1,452
No. of entitled children (< 1 yrs old)	0.00	0	2	0.07	0.05	0.06	1,452
No. of entitled children (2-4 yrs old)	0.11	0	2	0.33	0.31	0.24	1,452
No. of entitled children (5-7 yrs old)	0.22	0	2	0.44	0.32	0.36	1,452
No. of entitled children (8-10 yrs old)	0.27	0	2	0.47	0.29	0.41	1,452
No. of entitled children (11-12 yrs old)	0.20	0	2	0.41	0.26	0.36	1,452
No. of entitled children (13-15 yrs old)	0.27	0	2	0.46	0.31	0.39	1,452
No. of entitled children (16-18 yrs old)	0.20	0	2	0.41	0.26	0.34	1,452
No. of entitled children (19-20 yrs old)	0.08	0	2	0.28	0.18	0.24	1,452
Child support obligation <i>Obl</i>	258.84	0	826.07	169.60	153.90	84.83	1,452
Instrument for child support obligation <i>Obl_{IV}</i>	246.25	0	852.83	181.90	178.51	47.65	1,452
Recourse rate (proxy for enforcement)	0.21	0.06	0.36	0.06	0.06	0.03	1,133
(Re)marriage (1=married; 0=otherwise)	0.23	0	1	0.42	0.33	0.25	1,379
No. of new bio children	0.19	0	3	0.53	0.33	0.34	1,452
New bio children (1=yes;0=no)	0.13	0	1	0.34	0.21	0.22	1,452
Panel B: Parents with CASMIN ≤ 3							
	2000.23	1985	2013	7.09	7.09	2.95	898
Gender (1=female; 0=male)	0.00	0	1	0.07	0.08	0	898
Individual's age	37.62	22	45	5.39	5.41	2.95	898
Highest educational attainment (CASMIN)	2.77	1	3	0.48	0.51	0.14	898
Living in East Germany (1=yes;0=no)	0.05	0	1	0.23	0.25	0.05	898
Migration background (1=yes;0=no)	0.23	0	1	0.42	0.42	0	898
Labor force participation (1=yes;0=no)	0.86	0	1	0.34	0.25	0.24	898
Full-time employed (1=yes;0=no)	0.85	0	1	0.36	0.27	0.24	898
Experience in full-time employment (in yrs)	16.36	0.2	30.3	6.20	6.25	2.55	898
No. of children in household (< 1 yrs old)	0.05	0	2	0.21	0.10	0.19	898
No. of children in household (2-4 yrs old)	0.08	0	2	0.31	0.14	0.26	898
No. of children in household (5-7 yrs old)	0.07	0	2	0.26	0.15	0.22	898
No. of children in household (8-10 yrs old)	0.04	0	2	0.22	0.11	0.18	898
No. of children in household (11-12 yrs old)	0.03	0	1	0.16	0.08	0.14	898
No. of children in household (13-15 yrs old)	0.04	0	2	0.21	0.11	0.17	898
No. of children in household (16-18 yrs old)	0.05	0	2	0.24	0.15	0.19	898
Partner's age	33.85	18	51	7.00	6.67	3.10	400
Partner's CASMIN	3.71	1	9	1.48	1.46	0.39	340
No. of entitled children (0-17 yrs old)	1.24	0	2	0.57	0.52	0.31	898
No. of entitled children (0-20 yrs old)	1.38	1	2	0.48	0.49	0.12	898
No. of entitled children (< 1 yrs old)	0.00	0	1	0.06	0.03	0.05	898
No. of entitled children (2-4 yrs old)	0.12	0	2	0.35	0.36	0.24	898
No. of entitled children (5-7 yrs old)	0.22	0	2	0.45	0.34	0.37	898
No. of entitled children (8-10 yrs old)	0.27	0	2	0.47	0.28	0.41	898
No. of entitled children (11-12 yrs old)	0.19	0	2	0.40	0.24	0.36	898
No. of entitled children (13-15 yrs old)	0.28	0	2	0.48	0.32	0.40	898
No. of entitled children (16-18 yrs old)	0.20	0	2	0.41	0.23	0.35	898
No. of entitled children (19-20 yrs old)	0.08	0	1	0.27	0.15	0.24	898
Child support obligation	274.13	0	826.07	173.59	157.86	83.88	898
Instrument for <i>Obl</i>	259.03	0	852.83	189.62	185.43	46.65	898
Recourse rate (proxy for enforcement)	0.21	0.07	0.36	0.06	0.05	0.03	669
(Re)marriage (1=married; 0=otherwise)	0.29	0	1	0.45	0.36	0.26	836
No. of new bio children	0.21	0	3	0.56	0.35	0.37	898
New bio children (1=yes;0=no)	0.14	0	1	0.35	0.22	0.24	898

Notes: All sums of money are in year 2000 real €. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9).

Table A.27: FE-IV (2SLS) regressions for having new biological children, non-resident parents younger than 45 years old

	New biological children (1 = yes; 0 = no)					
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Parents with CASMIN ≤ 5						
Child support <i>Obl</i>	-0.0089** (0.0044)	-0.0102** (0.0046)	-0.0106** (0.0046)	-0.0088** (0.0034)	-0.0095** (0.0037)	-0.0095** (0.0037)
Control variables	no	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes	yes
Full-time empl. (1=yes;0=no)	no	no	no	no	no	yes
Mean, dep. var.	0.1322	0.1322	0.1322	0.1285	0.1323	0.1323
Fst. stage coef.	0.526***	0.521***	0.521***	0.557***	0.528***	0.5296***
Fst. stage F-stat.	35.56***	35.76***	34.43***	39.53***	32.54***	33.70***
Underid. tests	H ₀ : equation is underidentified; H _a : identified					
KP rk LM stat.	20.28***	19.67***	19.47***	20.33***	18.52***	18.82***
SW fst. stage χ^2	H ₀ : endogenous regressor <i>Obl</i> is unidentified					
	36.44***	36.70***	35.35***	40.78***	33.64***	34.86***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid					
AR Wald test F-stat.	4.81**	5.96**	6.49**	6.75**	6.95***	6.92***
AR Wald test χ^2	4.92**	6.11**	6.67***	6.97***	7.18***	7.16***
SW LM S stat. χ^2	7.90***	9.14***	10.00***	12.51***	16.83***	17.17***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous					
End. test stat. χ^2	4.640**	5.524**	5.921**	6.617**	6.969***	6.891***
N	1,452	1,452	1,452	1,339	1,277	1,277
Av. obs per parent	6.1	6.1	6.1	6.1	5.9	5.9
Non-resident parents	237	237	237	221	217	217
Panel B: Parents with CASMIN ≤ 3						
Child support <i>Obl</i>	-0.0132** (0.0060)	-0.0169** (0.0076)	-0.0174** (0.0075)	-0.0122** (0.0050)	-0.0149** (0.0062)	-0.0153** (0.0064)
Control variables	no	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes	yes
Full-time empl. (1=yes;0=no)	no	no	no	no	no	yes
Mean, dep. var.	0.1448	0.1448	0.1448	0.13664	0.1418	0.1418
Fst. stage coef.	0.588***	0.535***	0.531***	0.586***	0.535***	0.5250***
Fst. stage F-stat.	32.09***	24.13***	23.03***	31.32***	22.01***	22.41***
Underid. tests	H ₀ : equation is underidentified; H _a : identified					
KP rk LM stat.	14.38***	13.20***	12.98***	13.79***	12.22***	12.31***
SW fst. stage χ^2	H ₀ : endogenous regressor <i>Obl</i> is unidentified					
	33.40***	25.17***	24.06***	32.96***	23.27***	23.73***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid					
AR Wald test F-stat.	6.41**	7.71***	8.57***	6.55**	6.81**	6.88***
AR Wald test χ^2	6.68***	8.04***	8.95***	6.90***	7.20***	7.28***
SW LM S stat. χ^2	12.44***	14.23***	15.51***	16.86***	18.43***	20.55***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous					
End. test stat. χ^2	6.070**	6.660***	7.050***	6.689***	6.574**	6.572**
N	898	898	898	827	776	776
Av. obs per parent	6.5	6.5	6.5	6.4	6.2	6.2
Non-resident parents	139	139	139	129	126	126

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference. Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

A.7. Hours invested in childcare

Table A.28: FE and FE-IV regressions for parents' hours spent on childcare, without minor children in the household

	Hours spent on childcare on an average weekday					
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: FE models						
Child support <i>Obl</i>	-0.0025 (0.0025)	-0.0031 (0.0025)	-0.0031 (0.0025)	-0.0030 (0.0028)	-0.0026 (0.0028)	-0.0022 (0.0029)
Control variables	no	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes	yes
Full-time empl. (1=yes;0=no)	no	no	no	no	no	yes
Mean, dep. var.	0.3215	0.3215	0.3215	0.3248	0.3213	0.3213
N	1,835	1,835	1,835	1,709	1,634	1,634
Av. obs per parent	5.3	5.3	5.3	5.3	5.3	5.3
Non-resident parents	343	343	343	321	310	310
<i>Adj. R</i> ²	0.01654	0.01724	0.01670	0.01740	0.01011	0.01056
Panel B: FE-IV models						
Child support <i>Obl</i>	-0.0019 (0.0046)	-0.0038 (0.0050)	-0.0038 (0.0050)	-0.0045 (0.0055)	-0.0039 (0.0055)	-0.0043 (0.0054)
Control variables	no	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes	yes
Full-time empl. (1=yes;0=no)	no	no	no	no	no	yes
Mean, dep. var.	0.3215	0.3215	0.3215	0.3248	0.3213	0.3213
Fst. stage coef.	0.743***	0.724***	0.719	0.709***	0.707***	0.721***
Fst. stage F-stat.	177.93***	174.96***	166.76***	149.16***	139.79***	148.30***
Underid. tests	H ₀ : equation is underidentified; H _a : identified					
KP rk LM stat.	45.97***	48.06***	47.25***	44.35***	42.63***	43.77***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified					
SW fst. stage χ^2	181.31***	178.49***	170.22***	152.76***	143.41***	152.23***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid					
AR Wald test F-stat.	0.18	0.57	0.56	0.67	0.52	0.63
AR Wald test χ^2	0.19	0.58	0.58	0.69	0.53	0.65
SW LM S stat. χ^2	0.32	1.05	1.02	1.25	0.95	1.16
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous					
End. test stat. χ^2	0.024	0.031	0.032	0.116	0.091	0.229
N	1,835	1,835	1,835	1,709	1,634	1,634
Av. obs per parent	5.3	5.3	5.3	5.3	5.3	5.3
Non-resident parents	343	343	343	321	310	310

Notes: Standard errors are clustered at individual level. Singletons are excluded. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference.

Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

A.8. Labor supply

Table A.29: FE-IV (2SLS) regressions for the likelihood working full-time, non-resident parents younger than 56 years old

	Full-time employed (1 = yes; 0 = no)				
	(1)	(2)	(3)	(4)	(5)
Child support <i>Obl</i>	-0.0017 (0.0011)	-0.0015 (0.0012)	-0.0015 (0.0012)	-0.0013 (0.0013)	-0.0011 (0.0013)
Control variables	no	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes
Household category	no	no	no	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes
Mean, dep. var.	0.8425	0.8425	0.8425	0.8403	0.8361
Fst. stage coef.	0.723***	0.710***	0.708***	0.696***	0.687***
Fst. stage F-stat.	155.41***	156.58***	146.67***	121.99***	110.99***
Underid. tests	H ₀ : equation is underidentified; H _a : identified				
KP rk LM stat.	57.65***	59.21***	57.43***	53.40***	50.87***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified				
SW fst. stage χ^2	157.69***	159.40***	149.38***	124.62***	113.54***
Weak-I-robust inf.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid				
AR Wald test F-stat.	2.66	1.77	1.77	1.10	0.66
AR Wald test χ^2	2.70	1.80	1.81	1.13	0.68
SW LM S stat. χ^2	3.44*	2.71*	2.80*	2.02	1.20
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous				
End. test stat. χ^2	22.853***	22.173***	21.726***	18.247***	16.522***
N	2,451	2,451	2,451	2,241	2,141
Av. obs per parent	6.5	6.5	6.5	6.3	6.2
Non-resident parents	377	377	377	353	344

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification), youngest non-resident child's age as a second order polynomial, and parent's age group (≤ 25 years old, 26-30, ..., 51-55 years old). No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference. Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

A.9. Robustness checks for fertility

Table A.30: FE-IV (2SLS) regressions for having new children, parents younger than 50 years old, at least one non-resident child ≤ 17 years old

	New biological children (1=yes; 0=no)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Child support <i>Obl</i>	-0.0070** (0.0031)	-0.0073** (0.0032)	-0.0076** (0.0032)	-0.0072** (0.0027)	-0.0072** (0.0028)	-0.0072** (0.0028)	-0.0087*** (0.0033)	-0.0075** (0.0030)
Control variables	no	yes	yes	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes	yes	yes
(Re)married (1=no;0=yes)	no	no	no	no	yes	yes	yes	yes
Full-time employed (1=no;0=yes)	no	no	no	no	no	yes	yes	yes
Work experience	no	no	no	no	no	no	yes	yes
Difference in incomes	no	no	no	no	no	no	no	yes
Mean, dependent variable	0.1143	0.1143	0.1143	0.1134	0.1165	0.1165	0.1165	0.0950
Fst. stage coefficient	0.537***	0.545***	0.549***	0.563***	0.544***	0.542***	0.491***	0.491***
Fst. stage F-stat.	35.27***	35.36***	33.47***	32.46***	28.23***	28.23***	18.78***	19.18***
Underidentification tests	H ₀ : equation is underidentified; H _a : identified							
Kleibergen-Paap rk LM stat.	19.78***	19.54***	19.09***	18.63***	16.96***	16.94***	13.04***	13.18***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified							
Sanderson-Windmeijer fst. stage χ^2	36.10***	36.23***	34.33***	33.43***	29.14***	29.16***	19.42***	19.91***
Weak-instrument-robust inference	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero							
Anderson-Rubin Wald test F-stat.	5.50**	5.64**	6.33**	7.10***	6.88***	6.88***	8.60***	7.00***
Anderson-Rubin Wald test χ^2	5.63**	5.78**	6.49**	7.31***	7.10***	7.11***	8.89***	7.27***
Stock-Wright LM S stat. χ^2	7.49***	8.04***	9.14***	13.02***	15.30***	15.46***	18.24***	15.31***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous							
Endogeneity test stat. χ^2	5.063**	5.190**	5.856**	6.629**	6.562**	6.498**	7.338***	5.541**
N	1,531	1,531	1,531	1,411	1,348	1,348	1,348	1,232
Av. obs per parent	6.1	6.1	6.1	6.1	6.0	6.0	6.0	5.6
Non-resident parents	249	249	249	231	226	226	226	221

Notes: See Appendix Table A.31.

Table A.31: FE-IV (2SLS) regressions for having new children, parents younger than 50 years old, without years with self-employment

	New biological children (1=yes; 0=no)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Child support <i>Obl</i>	-0.0049** (0.0020)	-0.0057*** (0.0020)	-0.0060*** (0.0020)	-0.0052*** (0.0017)	-0.0056*** (0.0017)	-0.0055*** (0.0016)	-0.0059*** (0.0017)	-0.0048*** (0.0016)
Control variables	no	yes	yes	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes	yes	yes
(Re)married (1=no;0=yes)	no	no	no	no	yes	yes	yes	yes
Full-time employed (1=no;0=yes)	no	no	no	no	no	yes	yes	yes
Work experience	no	no	no	no	no	no	yes	yes
Difference in incomes	no	no	no	no	no	no	no	yes
Mean, dependent variable	0.1091	0.1091	0.1091	0.1066	0.1098	0.1098	0.1098	0.0916
Fst. stage coefficient	0.679***	0.667***	0.672***	0.694***	0.680***	0.687***	0.662***	0.670***
Fst. stage F-stat.	99.96***	102.25***	98.44***	100.08***	89.67***	94.00***	72.47***	74.49***
Underidentification tests	H ₀ : equation is underidentified; H _a : identified							
Kleibergen-Paap rk LM stat.	36.02***	35.68***	35.21***	34.77***	32.87***	33.52***	30.03***	31.01***
	H ₀ : endogenous regressor <i>Obl</i> is unidentified							
Sanderson-Windmeijer fst. stage χ^2	102.09***	104.54***	100.72***	102.80***	92.28***	96.80***	74.74***	77.06***
Weak-instrument-robust inference	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero							
Anderson-Rubin Wald test F-stat.	6.48**	8.19***	9.26***	8.91***	10.38***	10.37***	11.74***	8.58***
Anderson-Rubin Wald test χ^2	6.62**	8.37***	9.47***	9.15***	10.69***	10.68***	12.11***	8.88***
Stock-Wright LM S stat. χ^2	10.57***	12.60***	14.74***	16.41***	22.09***	22.39***	23.65***	21.72***
Endogeneity test	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous							
Endogeneity test stat. χ^2	5.859**	6.933***	7.889***	7.244***	8.279***	8.445***	8.575***	6.344**
N	1,696	1,696	1,696	1,557	1,485	1,485	1,485	1,364
Av. obs per parent	6.4	6.4	6.4	6.3	6.1	6.1	6.1	5.7
Non-resident parents	267	267	267	247	242	242	242	238

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. Work experience includes years of full-time work as a second order polynomial. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9).

Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30

Table A.32: FE-IV (2SLS) regressions for having new biological children, non-resident parents with CASMIN ≤ 5 , without residents of Bavaria

	New biological children (1 = yes; 0 = no)					
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Parents younger than 50 years old						
Child support <i>Obl</i>	-0.0045** (0.0022)	-0.0050** (0.0022)	-0.0052** (0.0022)	-0.0048*** (0.0018)	-0.0051*** (0.0018)	-0.0051*** (0.0018)
Control variables	no	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes	yes
Full-time empl. (1=yes;0=no)	no	no	no	no	no	yes
Mean, dep. var.	0.1251	0.1251	0.1251	0.1241	0.1271	0.1271
Fst. stage coef.	0.667***	0.655***	0.657***	0.669***	0.653***	0.654***
Fst. stage F-stat.	75.62***	77.45***	75.30***	74.12***	65.88***	66.49***
Underid. tests	H ₀ : equation is underidentified; H _a : identified					
KP rk LM stat.	31.00***	30.51***	30.10***	29.50***	27.87***	27.86***
SW fst. stage χ^2	H ₀ : endogenous regressor <i>Obl</i> is unidentified					
Weak-I-robust inf.	77.50***	79.49***	77.35***	76.51***	68.15***	68.84***
AR Wald test F-stat.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid					
AR Wald test χ^2	4.27**	5.36**	5.78**	6.51**	7.13***	7.11***
SW LM S stat. χ^2	4.38**	5.50**	5.93**	6.72***	7.37***	7.36***
Endogeneity test	7.49***	9.38***	10.01***	15.86***	21.52***	22.05***
End. test stat. χ^2	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous					
N	2.829*	3.465*	3.785*	4.737**	5.280**	5.224**
Av. obs per parent	1,447	1,447	1,447	1,313	1,259	1,259
Non-resident parents	6.3	6.3	6.3	6.2	6.1	6.1
	229	229	229	211	208	208
Panel B: Parents younger than 45 years old						
Child support <i>Obl</i>	-0.0078* (0.0046)	-0.0084* (0.0046)	-0.0086* (0.0046)	-0.0072** (0.0032)	-0.0079** (0.0035)	-0.0080** (0.0036)
Control variables	no	yes	yes	yes	yes	yes
No. of children	no	no	yes	yes	yes	yes
Household category	no	no	no	yes	yes	yes
(Re)married (1=yes;0=no)	no	no	no	no	yes	yes
Full-time empl. (1=yes;0=no)	no	no	no	no	no	yes
Mean, dep. var.	0.1403	0.1403	0.1403	0.1364	0.1398	0.1398
Fst. stage coef.	0.535***	0.533***	0.535***	0.576***	0.541***	0.536***
Fst. stage F-stat.	30.03***	30.15***	29.53***	34.35***	27.80***	27.66***
Underid. tests	H ₀ : equation is underidentified; H _a : identified					
KP rk LM stat.	19.06***	18.54***	18.42***	20.16***	18.42***	18.12***
SW fst. stage χ^2	H ₀ : endogenous regressor <i>Obl</i> is unidentified					
Weak-I-robust inf.	30.95***	31.12***	30.51***	35.70***	28.96***	28.85***
AR Wald test F-stat.	H ₀ : coef. of endogenous regressor <i>Obl</i> in the main equation is zero and orthogonality conditions are valid					
AR Wald test χ^2	3.02*	3.58*	3.80*	4.43**	4.48**	4.49**
SW LM S stat. χ^2	3.11*	3.69*	3.92*	4.60**	4.67**	4.68**
Endogeneity test	5.99**	7.15***	7.64***	12.06***	15.08***	16.85***
End. test stat. χ^2	H ₀ : endogenous regressor <i>Obl</i> can be treated as exogenous					
N	2.552	2.960*	3.152*	3.958**	4.167**	4.096**
Av. obs per parent	1,176	1,176	1,176	1,078	1,030	1,030
Non-resident parents	5.9	5.9	5.9	5.8	5.7	5.7
	199	199	199	185	182	182

Notes: Standard errors are clustered at individual level. Singletons are excluded. Underidentification, weak identification and weak-identification-robust test statistics are cluster-robust. All sums of money are in year 2000 real units of €10. Individual's age as a second order polynomial and year fixed effects are always included. Additional control variables include the highest educational attainment (CASMIN-classification) and youngest non-resident child's age as a second order polynomial. No. of children stands for the number of minor children who are entitled to child support and live outside the household. The household categories are: Living alone; living with a partner who does not work full-time nor part-time; living with a partner employed part-time; living together with a partner who works full-time. The CASMIN educational classification distinguishes between inadequately completed education (1), general and vocational certification at the compulsory level (2, 3), intermediate level of education (4, 5), general and vocational certification at the maturity level (6, 7), and tertiary education (8, 9). SW fst. stage χ^2 stands for Sanderson-Windmeijer first stage χ^2 . AR Wald test stands for Anderson-Rubin Wald test, KP rk LM for Kleibergen-Paap rk LM statistic, SW LM S for Stock-Wright LM S statistic, and Weak-I-robust inf. for Weak-instrument-robust inference. Significance levels: * 10%; ** 5%; *** 1%; Data: SOEPlong v30