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15-08

NOVEMBER, 2008

THE FOERDER INSTITUTE FOR ECONOMIC RESEARCH
AND
THE SACKLER INSTITUTE OF ECONOMIC STUDIES

DO FINANCIAL INCENTIVES AFFECT FERTILITY? *

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This paper investigates whether financial incentives, and in particular government child subsidies, affect fertility. We take advantage of a comprehensive, non-public, individual-level panel data set that includes fertility histories and detailed individual controls for married Israeli women from 1999-2005, a period with substantial changes in the level of government child subsidies, but no changes in eligibility and coverage. We find a significant positive effect on fertility; the mean level of child subsidies produces a 6.9 percent increase in fertility, and we estimate the benefit elasticity to be in the range of 0.12-0.18 and the price elasticity to be in the range of 0.088-0.13. The positive effect of child subsidies on fertility is absent from the upper part of the income distribution, but it is present across all religious groups. Using a differences-in-differences specification, we find that a large, unanticipated reduction in child subsidies that occurred in 2003 had a substantial negative impact on fertility. Overall, our results are consistent with the view that fertility responds to financial incentives and they indicate that the child subsidy policies used in many countries can have a significant influence on incremental fertility decisions.

Key words: Fertility, child subsidies, child allowances.
JEL Classification: D1, H31, I38, J13, K36.

* We are grateful to Zvika Eckstein, Yona Rubenstein, Manuel Trajtenberg, Yoram Weiss, and seminar and conference participants at Chicago, Maryland, Tel-Aviv, Ben-Gurion, St. Gallan, Sussex, Cyprus, Haifa, and the annual meetings of European Association for Labor Economics and the Israeli Economic Association for helpful comments and suggestions. We thank Michal Goltzman for excellent research assistance, Yuri Homenko of the Central Bureau of Statistics for assistance in preparing the data, and Anat Katz and David Gordon of the Central Bureau of Statistics for facilitating our work on the project at the Central Bureau of Statistics. Alma Cohen gratefully acknowledges the financial support of the Foerder Institute for Economic Research.

1. Introduction

This paper investigates the effect of financial incentives on individual fertility decisions using a comprehensive, non-public, individual-level data set at Israel's Central Bureau of Statistics (CBS). Our data contains fertility histories and detailed individual controls for married Israeli women with two or more children during the six-year period 1999-2005. During this period, there was substantial variation in the level of government child subsidies, including one large and unanticipated reduction in levels, but no changes in eligibility or coverage.

Interest in the economics of fertility goes back at least to Thomas Malthus's critique of the Poor Law in the United Kingdom. More recently, since the now-canonical fertility model of Becker (1960), there has been significant interest among researchers in whether and to what extent fertility responds to financial incentives. Some researchers continue to believe that fertility decisions are shaped by social, religious, and cultural forces, and that financial incentives of the magnitude used in many countries cannot be expected to have a meaningful effect on such decisions (Gauthier [1996]). Our work examines, and provides evidence consistent with, a key prediction of Becker's model: that fertility will respond to changes in the price of children.

The question of whether fertility is responsive to financial incentives is not only of theoretical interest but also has significant policy implications. Facing sharp declines in birthrates in the recent decades, many developed economies have adopted either explicitly pro-natalist policies (France, Germany, Sweden, and the Canadian province of Quebec) or implicit subsidies to children through childcare (most Western European countries, the United States, and Canada). Despite the prevalence of these polices, the evidence of their

impact on fertility (reviewed in Section 2) has thus far been inconclusive. Our work demonstrates that monetary incentives can have significant effects on fertility.

Fertility rates in Israel (2.84 children per woman) are high relative to those in the United States (2.07) and Europe (significantly below 2 for most countries). Nonetheless, since 1959 Israel has maintained a generous system of child subsidies, referred to as "child allowances," paid monthly to eligible families with children. During the period we study, total payments from child allowances ranged from 0.8per cent to 1.5per cent of Israel's GDP.

The period we study (1999-2005) is of interest for two reasons. First, whereas child allowance benefits had been trending up prior to 2003, in 2003 there was a large, unanticipated reduction (discussed in detail in Section 3.2) in the generosity of the child allowance. Second, although there are substantial changes in the level of child allowance during the period we study, there were no changes in eligibility. This situation creates an ideal setting to examine the impact of the child allowance on fertility.

We merge several non-public data sets maintained by Israel's Central Bureau of Statistics (CBS), with restricted access allowed at the central office of CBS. We create in this way a comprehensive individual-level panel data set, with about 1.4 million observations, that includes fertility histories for Israeli women with two or more children between 1999 and 2005. Our data set also contains detailed individual controls including education, religion, immigrant status, and income for both the woman and her husband.

We use two approaches to identify the effect of the child allowance on fertility. First, we use variation across each of the six years in child allowance, controlling for the number of previous children, along with income, education, religion, immigrant status,

fertility trends, and either a time trend or year fixed effects. This approach exploits the between-year variation in the level of child allowance for a given number of children.

We find that the mean level of monthly child allowance for an incremental child (363 NIS, about $83[1]) leads to a 0.8 percentage point increase in the probability of an incremental pregnancy, or a 6.9 percent increase in fertility compared to the baseline probability of pregnancy. The effect is robust to controlling for time trends and time dummies. The effect of child subsidies on fertility is weakest for households in the upper part of the income distribution – the households for whom the allowances are least economically meaningful. The positive effect of child subsidies is largely present across all religious groups.

Our second approach focuses on the 2003 change in child allowance introduced by then-Treasury Minister Benjamin Netanyahu, which was the largest and most unexpected change in child allowance in this period. We use a differences-in-differences approach, looking at pre- and post-reform months in 2003 and comparing these to the same months in 2002. For a range of time windows, we find that the 2003 reduction in child allowance had a negative and significant effect on fertility.

The remainder of this paper is organized as follows. Section 2 reviews the literature. Section 3 describes our data set and the child allowance program in Israel. Section 4 discusses our identification strategy and specifications. Section 5 presents our results. Section 6 concludes.

[1] During the period of our study, the average exchange rate of NIS to US dollars was 4.4.

2. Literature Review

The literature on fertility goes back at least to Thomas Malthus and the 19th Century debate on the Poor Law (see Boyer [1989]). Malthus criticized the Poor Law on grounds that it subsidized marriage and fertility among the poor. He argued that supporting the poor removed natural checks on population growth, namely delayed marriage and abstention from sexual activity.

The seminal modern reference on fertility as an economic decision is Becker (1960). This canonical model has been extended in various directions by, for example, introducing family transfers (Cigno [1986]) and social dynamics (Manski and Mayshar [2003]). Some researchers, however, argue that financial incentives – at least incentives with the magnitude of those in fact used by governments – do not have a meaningful effect on fertility decisions, which are generally determined by social, religious, and cultural factors (Gauthier [1996]). Thus, it is important to test empirically whether and to what extent fertility responds to financial incentives. Researchers seeking to address this question have used both cross-country data sets and individual data within a single country.

Cross-Country Studies: Birth rates are currently below or close to the replacement level in many developed countries, and some countries have adopted policies that subsidize fertility directly, seeking to reverse some of the demographic trends toward lower birth rates. Demeny (1986) reviews the mixed evidence on pro-fertility policies in France, Romania, Germany, and Hungary. Gauthier and Hatzius (1997) provide cross-country evidence from 22 OECD countries; they find a small but significant effect of direct cash benefits, but an insignificant effect of maternity benefits in their analysis.

Studies using Individual Data: Because our study examines individual data from Israel, it is closest to single-country studies that use individual data and exogenous variation in policy variables to investigate the impact of financial incentives on fertility. Milligan (2005) examines the impact of a child subsidy introduced in the Canadian province of Quebec in the mid-1990s. He uses a differences-in-differences strategy comparing Quebec and other provinces, and finds a significant effect of the policy in the expected direction. Laroque and Salanié (2005) use cross-sectional French data and variation in the French tax code, concluding that tax incentives have an effect on fertility decisions in France.[2]

Although the United States does not offer direct child subsidies, several studies examine the effect on fertility created by the tax code, social security, and other childcare benefits in the United States. Whittington (1992) examines the effect of tax incentives and finds a positive effect. Blau and Robbins (1989) find that a greater availability of childcare encourages fertility. Several papers exploit changes in the Aid to Families with Dependent Children program and recent welfare reforms to study potential effects on fertility (see *inter alia* Acs [1996], Dyer and Fairlee [2003], Fairlee and London [1997], Groger, Karoly, and Klerman [2002], Rosenzweig [1999], Joyce, Kaestner, and Korenman [2002], and Kearny [2002]). Overall, this literature finds no, or modest, effects.[3]

[2] In addition, Schellekens (2006) examines data from the period 1983-1995 in Israel and seeks to estimate the effect of the child allowance on the hazard rate of childbirth. The length of the period examined makes it difficult for this study to disentangle the effect of child allowances from that of long-run fertility trends.

[3] In addition to single-country studies that use individual data, there are some single-country studies that discuss the potential effects of child subsidies on the basis of aggregate data. One noteworthy study is Manski and Mayshar (2003), which discusses why fertility rates in Israel could decline in the overall population while at the same time increase in the ultra-Orthodox Jewish population.

While previous studies using individual data have improved our understanding of the effect of financial incentives on fertility, our data and analysis have a number of advantages. First, Laroque and Salanié (2005) argue that existing studies are unable to control with sufficient detail for individual characteristics and family structure. Our access to a range of comprehensive, non-public CBS data sets allows us to address this issue. We are able to control for a rich set of individual and household covariates, as well as to study the responsiveness of fertility to financial incentives across religious and income groups.

Second, our panel data set covers a six-year period with changes in allowance levels at different birth parities and in both directions. These changes in allowance levels improve our ability to identify the effect of child allowances on fertility and to distinguish this effect from underlying time trends.

Third, the unanticipated and large 2003 reduction in allowance level provides a good setting for a differences-in-differences strategy. Because we are able to observe the exact date of birth, and thus the likelihood of incremental pregnancies just before and just after the reform, we can focus on a relatively short time period, which further mitigates the problem of long-run fertility trends that could be confounded with the effects of the child allowance reform.

3. The Data and Institutional Background

3.1 The Data

We use non-public individual-level data sets maintained by Israel's Central Bureau of Statistics (CBS) and to which the CBS allows restricted access in its central office. Our

extract from the data contains information on a 40 percent random sample of women in Israel who were married, under 45, and had at least 2 children during the period 1999-2005.[4] We restrict the sample in this way because there was little variation during our period in the child allowance for first- and second-born children (see Table 3) and most third and higher-parity births are to married women. The data follow each woman from the time she satisfied the conditions for inclusion in the data until 2005 or until the woman turned 45 (if earlier).

We merge a number of data sets, each separately maintained by the CBS, to create a comprehensive data set that includes fertility history, education, religious affiliation, ethnicity, and income (a detailed list of variables is presented in Appendix A). Below we describe briefly the process we follow and the information available about individuals in our data set

Fertility History and Basic Demographic Characteristics: From the Population Register's data set maintained by the CBS, we obtain information on the following: the woman's date of birth, country of origin and year of immigration for individuals not born in Israel, the country of origin and year of immigration for parents of Israel-born women, the number of children and their birth dates, a locality identifier, and information about the husband – date of birth, country of origin and year of immigration for men not born in Israel, and the country of origin and year of immigration for parents of Israel-born men.

Education: We compile data on education of mothers and husbands from various data sets maintained by the CBS. From the administrative records of Israel's higher-education institutions, we obtain information on the mother's and husband's most recent

[4] The sample excludes Arab Christians and others small minorities which account for less than five percent of the sample.

academic degrees and the institutions from which they obtained their degrees. For individuals missing in the higher education records, we gather the information on education from the school registry record (created when parents register their children in public schools and public kindergartens).

In Israel, virtually all primary schools and pre-school kindergartens are supported with public funds. Thus, information on parents' school years was obtained for parents who had children already enrolled in primary school or public kindergartens and recorded information regarding their own years of schooling when registering their children. For new immigrants who do not have information regarding education in one of the above sources, we obtain data on years of schooling from the immigration registry (data they are required to provide when immigrating to Israel). Because of difficulties comparing years of education among individuals educated in different countries, and in order to make the data on higher education degrees and years of schooling from the school/kindergarten registration process comparable, we code the mother's and husband's education as a categorical variable ranging from 1 to 4 (for primary school, high school graduate, college, and post-graduate education).

Religion: We infer the degree of religiosity for women in the Jewish population by using information on the kind of kindergarten and school that their children attend. Since in Israel the government maintains primary and secondary education systems for each religious group, the choice of school identifies the parents' ethnic group (Arab or Jewish) and degree of religiosity for the Jewish population (secular, religious, ultra-Orthodox). Each public kindergarten and school is coded as being secular, state-religious, ultra-Orthodox, or Arab-education (where the first three concern the Jewish population).

Income: Finally, income data was obtained from the matched employer-employee database, which is based on income tax files. For both the mother and the husband, we have the following information: employment status (self-employed or wage earners), the number of jobs held, the number of months worked, gross income, industry of employment, income tax, mandatory health insurance contributions, and social security contributions. We use this data to create socio-economic controls.

Appendix A provides a detailed description of the variables.

3.2 Institutional Background: The Child Allowance System in Israel

The child allowance is a non-taxable payment made to all mothers with children under the age of 18, with the amount of the payment a function of the number of children (see Table 3). The child allowance is one of Israel's most important welfare expenditures. In 2004, 947,000 mothers received child allowances, paid to support approximately 2.2 million children. Child allowance payments in 2004 totaled 4.6 billion NIS, which accounted for 0.9 percent of Israel's GDP. The percentage of GDP spent on child allowances peaked at 1.5 percent in 2000, but this percentage was substantially reduced in the 2003 reforms we describe below.[5]

The child allowance was first introduced in Israel in 1959, and since then it has undergone many changes in coverage (age, family size, veteran status) and levels. The program began with coverage for children below age 14, which was extended to age 18 in 1965. Coverage was initially limited to families with four or more children, but it was extended in 1972 to families with three or more children and in 1975 (the so-called Ben-

[5] For a review of the child allowance system and a wealth of descriptive statistics about it, see Frish (2004).

Shahar Reform) to all children under age 18. In the 1990s, child allowances for the first (and eventually second) child of families with three or fewer children were repealed, but eventually reinstated. Another feature of the program that has varied is eligibility based on military veteran status, which was required until the mid-90s but not afterwards.

The period we study (1999-2005) includes significant changes in the level of child allowances (see Table 3) but not in eligibility and coverage. In addition to incremental increases in the child allowance (mostly linked to inflation adjustment), there were two significant policy reforms that took place. First, the Halpert Law, implemented in November 2000, increased the benefit for fifth and higher-parity births by 33 to 47 percent.

The second, largest, and most unanticipated change in child allowance levels came in June 2003, following the unexpected appointment of Benjamin Netanyahu to the post of finance minister in the new government headed by prime minister Ariel Sharon. With Israel facing a difficult fiscal situation, brought about in part by the second Intifada in the West Bank and Gaza Strip, Netanyahu succeeded in passing a package of economic reforms including a substantial overhaul of the child allowance system. The passage of the reform bill, which was by no means guaranteed, produced a large and unanticipated shock to the child allowance system.

Under the 2003 reform bill, mothers of children born after June 2003 receive an allowance equivalent to that of the first two children in the family regardless of their birth parity. The bill established a transition for children born prior to the reform bill: It prescribed decreases in child allowances over the subsequent seven years (i.e., from 2003 to 2009) so that by 2009 every child will receive a uniform allowance irrespective of his or her birth parity. Although child allowance levels were reduced across the board, given the

pre-2003 non-linearity in the allowance, the biggest reduction in benefits post-2003 was for large families.

For example, a family with seven children received approximately 2500 NIS following the 2003 reform, compared to 3600 NIS in 2002. Furthermore, all children born after 2003 received 144 NIS regardless of the birth parity, whereas prior to 2003, all newborns to families with more than four children received 782 NIS. These are meaningful changes for many of the affected families, especially bearing in mind that the highest fertility groups (the ultra-Orthodox and Arab Muslims) are also the poorest.

A natural concern with exploiting changes in child allowance levels is that other government programs could have changed at the same time. However, the Halpert Law in 2000 focused on the child allowance and did not affect any other government programs. The 2003 change in the child allowance was accompanied by other fiscal reforms, but these reforms did not have a significant impact on married families with children.[6]

4. Theoretical and Empirical Framework

4.1 Theoretical Framework

We examine the fertility decision within the Becker (1960) framework. There is a demand for children along with other commodities. In this context, variation in the child allowance will have two effects. First, decreases in the child allowance increase the price of the marginal child and are expected to reduce fertility through a substitution effect. Second, reductions in the child allowance decrease payments received for intra-marginal children, leading to a reduction in income. For example: a family that had 4 children in 2002

[6] The "Netanyahu reforms" also included cuts in unemployment benefits and income-maintenance allowances, but very few families in our research sample could have been affected by these changes.

received an allowance of 1259 NIS, whereas such a family received 937 NIS in 2003 and received only 756 NIS in 2005. Thus, reductions in the child allowance also have an income effect, which, assuming that children are a normal good, can also be expected to reduce the demand for children. In our empirical strategy, which we outline below, we will identify the effect of the child allowance for the marginal child and control for income, including the intra-marginal child allowance, thereby identifying the first effect.

Much attention has recently been devoted to the quantity-quality tradeoff in fertility (see Angrist, Lavy, and Schlosser [2006] and Black, Devereux and Salvanes [2007]). In this regard, an important feature of our strategy is that benefits, and our estimate of their impact on fertility, are conditional on the number of children. This means that parents cannot use incremental child allowance income to reduce fertility and increase the quality of their children. Of course, it does not rule out the opposite possibility, namely that families can choose to increase the quantity of children at the expense of child quality.

There is also scope, potentially, for dynamic fertility effects and for effects on completed family size. The time window of six years available to us makes it difficult to study delayed fertility outside this window and in turn effects on completed family size; as explained below, we address these issues indirectly by examining effects on older women.

4.2. Empirical Strategy

Our empirical strategy is based on examining the relationship between the fertility decision and child allowance. Thus, we time births to the month of conception and use an indicator for having become pregnant in that year as the outcome.

Our key right-hand-side variable is the child allowance for the incremental child, i.e., the child allowance a woman would expect to receive for her next child given the number of children below age 18 that she has at that point. Thus, the incremental child allowance varies by number of prior children younger than age 18 and by year. As discussed above, there are two large substantial changes in the level of the child allowance in this period. We believe that it is reasonable to think of the incremental child allowance as being exogenous with respect to fertility choices. As discussed in Section 3, variation in child allowance was policy driven and largely unanticipated. Furthermore, at the individual level, incremental child allowance is not directly tied to the work and income decisions of the household, and thus is independent of labor decisions.

A possible concern is that by choosing their level of fertility households are implicitly choosing their level of child allowance; because of the non-linear increase in child allowance with the number of children, especially prior to 2003, households opting into high fertility are also selecting into a high child allowance. We address this concern by including a full set of dummies for the number of previous children. This implies that the remaining variation is between years for a given number of children and not between high and lower fertility individuals.

Given that we exploit the between-year variation in child allowance, another potential issue is that we could be confounding changes in the child allowance with time-varying factors omitted from our model, such as macro events or simply underlying time trends in fertility. We address this concern in several ways. We explicitly control for two key macro variables that have been shown to affect fertility choices, namely GDP growth and the unemployment rate. We also use three approaches for dealing with time trends and

other omitted time-varying variables in the data: we control for a fertility trend (which is constructed as the average number of children born five years ago within a reference group defined by a woman's religion, age, and education and by calendar year), we control for a time trend, and we control for year fixed effects in some specifications.

We also include a broad set of household controls: education (from the school registry), income dummies (and in some specifications log income) and work status (from IRS data), and detailed controls for religion (as described above: secular Jewish, religious Jewish, ultra-Orthodox Jewish, and Arab Muslim). Controlling for income ensures that we are identifying the effect of a change in the marginal child allowance, as opposed to changes income. As mentioned above, we also include a full set of dummies for the number of previous children. This is important for dealing not only with the selection effects mentioned above but also with any possible omitted variable bias with respect to fertility.

Thus our specification is of the form:

$$Pregnancy_{it} = \alpha + Child\ allowance_{it}\delta + X_{it}\beta + Fertility\ trend_{it}\varphi + Time\ effect_{t}\tau + \varepsilon_{it},$$

where we use a probit specification and the time effect is either a year trend or year fixed effects. We cluster standard errors by year × the number of children, which is the level of variation of the child allowance.

Given the six-year time horizon of our analysis, we are able to identify the short-run effects of financial incentives on fertility, i.e., we cannot distinguish between delayed fertility and a reduction in total fertility. To the extent that the reduction in child allowance was perceived as a permanent policy change, it is reasonable to believe that the short-run reduction in fertility would translate into an impact on total fertility. We can test this hypothesis to some extent by splitting our sample by age. Because of their longer fertility

horizon, younger woman can more readily postpone fertility, whereas for older women (e.g., 35 or older, and certainly 40 or older) a postponement in fertility is much more likely to imply a reduction in total fertility.

We also consider a differences-in-differences specification that uses only variation around the policy change in 2003, which was the largest and most unanticipated change in child allowance during the period we examine. In particular, we compare the fertility rate before and after the policy change (pre- and post-May 2003), using the same months in 2002 as a comparison:

$$Pregnancy_{i,t} = \alpha + postMay_{it}\beta + I_{it}^{2003}\tau + postMay_{it}\beta \times I_{it}^{2003}\delta + \varepsilon_{it},$$

where I_{it}^{2003} is 1 for *t*=2003 and 0 for prior years and post-May is 1 for months after May and 0 otherwise.[7]

5. Results

5.1 Summary Statistics

Table 1 presents summary statistics for our sample. The main sample consists of approximately 1.3 million person-year observations. Out of these observations, 50 percent are secular Jewish, 10 percent each are religious and ultra-Orthodox, and 20 percent are Arab Muslim. The average age of the sample is 35. Household income is approximately 120,000 (2006) NIS. It is notable that household income is 30 percent higher for the secular Jewish population and much lower for both the ultra-Orthodox and Arab Muslims. This is

[7] It is more difficult to use this strategy to estimate the effect of the Halpert Law, which increased the child allowance, because it takes varying lengths of time, typically from six months to a year, for a married woman to become pregnant once she decides to do so. In contrast, the decision to avoid pregnancy can be immediately implemented.

partly due to very low participation rates of ultra-Orthodox men and Arab women in the labor force (50 percent and 21 percent respectively).

Table 1 indicates that the average number of children per woman is 3.3.[8] This varies by income group and by religious group: fertility declines from 3.85 children among below-poverty-line mothers to 2.92 in the top 10 percent of income and ranges from 2.66 in the Secular Jewish population to 4.56 and 4.13 in the ultra-Orthodox Jewish and Muslim populations. In Table 2, which presents the distribution of the number of children for women age 40 to 45 in 2005, we see that the differences are most dramatic in the ultra-Orthodox and Muslim populations for very large families: for both groups, the modal family size is 6+, whereas in the secular and religious Jewish populations it is 3 and 4 respectively.

5.2 Baseline Specification

In Table 4, we regress an indicator for conceiving in a given year on the child allowance, including controls as described in Section 4.2. In column (1), controlling for a year trend, we find a positive and statistically significant effect of the incremental child allowance on the probability of pregnancy. We discuss the magnitude of the coefficient in Section 5.2, below. In Table 4, columns (2) and (3) we replace the year trend variable with year fixed effects. We begin, in column (3) of Table 4, by estimating the year fixed effects without including the child allowance. The profile of year fixed effects shows significant (and increasing) reductions in fertility compared to the excluded year (1999), with a particularly sharp reduction in 2003. When we add child allowance to the specification, the year fixed

[8] This is higher than the average level of fertility among Israeli women (2.8 children) because our sample consists of women with two or more children.

effects from 2003 on are now positive rather than negative, and child allowance enters as positive and statistically significant. The magnitude of the child allowance effect is about 30 percent larger compared to the fertility- and year-trend specifications.

The sign of other coefficients is largely in the direction we would expect. We find that the husband's age is negatively associated with pregnancy. We find a negative and significant coefficient of the fertility trend, indicating that groups that have experienced higher fertility in the past are currently less likely to become pregnant. The quadratic specification in months-from-previous birth shows an increasing likelihood of pregnancy until about sixty months.

The coefficients on the income dummies indicate that the probability of pregnancy is significantly higher in the top 10 percent of the income distribution. This is consistent with children being a normal good, although of course needs to be interpreted with caution since income and fertility are potentially jointly determined. To the extent that fertility reduces income, as women stay out of the labor force or reduce work in anticipation of pregnancy, we would expect a downward bias in the coefficient. One of the reasons we use income dummies rather than actual income as a control in our baseline specification is that a household is less likely to switch income categories in anticipation of pregnancy than to experience a reduction in the income level. (Nonetheless, we present results controlling for log income in Table 6 below.) Table 4, column (1) also shows the anticipated pattern of fertility by religion: relative to the excluded category of the secular Jewish population, the probability of pregnancy is 9.5 percent higher in the religious Jewish population, 24.5 percent higher in the ultra-Orthodox Jewish population, and 13.4 percent higher among Muslims.

5.3 The Magnitude of the Effect

We consider several alternatives to scale this effect in order to interpret the magnitude. The size of the coefficient in our baseline specification (0.000022) implies that the mean level of child allowance (363 NIS) leads to a 0.76 percentage point increase in the probability of pregnancy. Compared to the overall probability of pregnancy in the population (11.2 percent), this corresponds to a 6.88 percent increase in fertility for a typical woman. Table 4 and subsequent tables summarize the magnitude of the child allowance effect using a similar calculation.

It is also instructive to scale the effect by changes in the level of child allowance experienced by mothers due to the 2003 reform. For example, we can see from Table 3 that the child allowance paid for a fourth child to a woman with three children went down by 489 NIS between 2002 and 2003. This leads to a 1.03 percentage point reduction in the probability of pregnancy. (We split the sample and obtain estimates for each religious group in Section 5.5.) Given the distribution of family sizes in Table 1, it is probably most relevant to compare this effect to the 12 percent probability of pregnancy in the religious Jewish population, whose modal number of children is 4.

It is difficult to translate our results into a precise price elasticity because we do not have detailed data on the marginal cost of children. A back-of-the-envelop calculation is possible using Israel's National Insurance Institute's tabulations on the marginal cost of children. The estimated marginal financial cost of a child ranges from 980 NIS per month

for the first child to 770 NIS per month for the fifth or subsequent children.[9] To this we add the estimated foregone earnings as a result of childbearing. Since Israel provides 3 months of maternity leave, the primary foregone earnings from childbearing are for those mothers who transition out of the labor force. Thus, our back-of-the-envelop estimate of foregone earnings due to childbearing is average annual earnings among working mothers multiplied by the incremental proportion of mothers who leave work as result of an additional child.[10]

In this case, at the average level of fertility (three children), the child allowance for a fourth child decreased by 489 NIS per month in 2003, which then corresponds to a 106 percent increase in the cost of a child.[11] Based on Table 4, this is associated with a 9.2 percent reduction in fertility or an elasticity of 0.086 in the year trend specification (with a standard error of 0.011[12]), or a 14 percent reduction in fertility and an elasticity of 0.131 in the year fixed effects specification (with a standard error of 0.016).[13] We will revisit this calculation in Section 5.5 using child allowance effects broken down by income and religious groups, and will find that this average conceals considerable heterogeneity.

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[9] The National Insurance Institute estimates for 2003 are as follows, in NIS per month: first child 980; second child 900; third child 850; fourth child 800; and fifth and further children 770. See Sabag-Andelblad (2005).

[10] There are many reasons to be cautious about this imputation. Working and non-working mothers differ along an array of observable (and most likely unobservable) dimensions. This calculation does not account for either of these.

[11] We compute the price elasticity as follows. We consider an incremental child to a mother that already has three children. The change in child allowance was from 633 to 144 NIS. The financial cost of a fourth child is estimated at 800 NIS per month by the NIS. We estimate foregone earnings as earnings of mothers who work (approximately 60,600 NIS annually) times the incremental proportion of mothers who leave work because of a fourth child (0.058). Thus the total cost changed from 800+(60,600x0.058/12)-633=459.9 to 800+(60,600x0.058/12)-144=948.9, or a 106 percent increase in cost.

[12] Standard errors are computed using the delta method, assuming fertility is the only source of uncertainty and that cost data are not stochastic.

[13] For a 489 NIS change in child allowance, we get from Table 4, column (1), that the reduction in fertility is 0.000021x489=0.0103. Thus, for a baseline probability of pregnancy of 0.112 (see Table 1, column (1)), we get a percentage change of 0.092 and an elasticity of 0.086 (0.092/1.06).

An alternative would be to scale our results by household income. The 2003 reform cut the child allowance for the marginal child between 168 NIS and 638 NIS per month (or 2,016 NIS and 7,656 NIS annually), depending on the number of previous children, with a typical reduction being 400 NIS per month (or 4800 NIS annually). This is 4 percent of average annual income in the overall population. Ultra-Orthodox Jewish and Arab Muslim households typically have larger families and lower household income; the reduction in the child allowance for fifth or subsequent children corresponds to 6 percent of household income for the ultra-Orthodox and 8 percent of household income for the Arab Muslim populations. Compared to these reductions in incremental income for the next child, fertility decreased by 6.8 and 10.47 percent in our baseline specifications.

Finally, we can scale our results as a benefit elasticity. Again, focusing on the 2003 reduction in child allowance, a typical reduction in child allowance was 489 NIS per month for a fourth incremental child. This corresponds to an 77 percent decrease in the benefit, and based on column (1) led to a benefit elasticity of 0.12 when a year trend is used and in the year fixed effect specification, column (2), leads to a benefit elasticity of 0.177. Milligan (2005) finds a benefit elasticity of 0.107 for Quebec and notes that this falls into the range of previous estimates (a long-run cross-country elasticity of 0.16 in Gauthier and Hatzius [1997]; an elasticity of 0.05 to 0.11 for Canada in Zhang, Quan, and Meerbergn [1994]; and elasticities ranging from 0.127 to 0.248 in Whittington, Alm, and Peters [1990]; see Milligan [2005]).

5.4 Robustness Checks

In Table 5 we present a range of robustness checks for our baseline specification. In columns (1) and (2) we directly control for log income rather than use income dummies. The results are very similar to Table 4, and increase our confidence that the child allowance effect represents a price effect for the incremental child rather than an income effect. A concern with controlling for household income is that a mother's income is potentially endogenous with respect to the fertility decision. Recall however that since we time births to conception, this would be a concern only if mothers reduced work in anticipation of pregnancy. Nonetheless, in columns (3) and (4) we control for log household income excluding mother's income from the total. The results are again similar to Table 4.

In columns (5) to (8) we examine the robustness of our results to alternative specifications of the child allowance. In our main results, we use the level of the child allowance and control for income. This has the advantage that we focus on changes in the level of child allowance rather than use changes in its relative value which individuals are less likely to notice and respond to, but also has the disadvantage that we ignore another possible source of variation. We consider two alternatives: to scale the incremental child allowance by household income and to scale the incremental child allowance by household per capita income.[14] For both specifications we continue to find a positive and significant impact of the child allowance.

[14] Following CBS methodology, each parent is counted as an incremental individual. The first to fifth children are counted as 0.65, 0.55, 0.5, 0.45, and 0.40 incremental individuals respectively. Sixth and subsequent children are counted as 0.4 incremental individuals.

5.5 The Effect by Income Quartile and by Religious Group

In this section, we consider the effect of child allowance in subgroups defined by income and by religion.

There are several motivations for this. First, splitting the sample by income category provides an important plausibility check of our results. Since it is a smaller percentage of household income at the upper end of the income distribution, we would expect the child allowance effect to be smaller in this group as compared to the middle and lower ranges of the income distribution. Second, it is widely assumed in discussions of the subject in Israel that fertility patterns vary by religious group, and consequently reasonable to hypothesize that there would be variation in the child allowance effect among religious groups. Thus, it is important to ascertain whether our results are driven by any one subgroup.

The results are presented in Tables 6 to 8. Table 6 examines the child allowance effect when the sample is split by income groups. We find that the effect is positive and significant for below-poverty income and is a similar magnitude for individuals with income between the poverty line and the 90th percentile of income. In contrast, and as predicted, for the above-90th percentile income group, the child allowance coefficient is 40 percent lower.

In Table 7 we split the results by religious group. We find an interesting difference between the ultra-Orthodox Jewish population and the balance of the population. Among secular and religious Jews and Muslims, the probability of pregnancy decreases with the previous number of children. Instead, among the ultra-Orthodox, the probability of pregnancy increases with the previous number of children. This reflects the fact that there

is a large subset of high fertility mothers among the ultra-Orthodox. We find that the child allowance has a positive and significant effect in the secular and religious Jewish populations and among Arab Muslims, and is similar in magnitude for these groups; the effect is not significant among the ultra-Orthodox, a group whose members are subject to strong "be fruitful and multiply" norms.

In Table 8, we provide the breakdown by income and religious groups. We find a broadly similar pattern. There is a small or insignificant effect in the high-income category for all religious groups except Muslims. There is a significant effect in all four religious groups in the middle-income category. Finally, there is a significant effect in three of four religious groups in the low-income category. It is noteworthy that although the overall child allowance effect is insignificant for the ultra-Orthodox Jewish population, the effect is significant in the middle-income category. The difference between middle-income and low-income ultra-Orthodox families might be due to the fact that the families in which the husband does not work but engages in full-time religious studies in a Yeshiva, which are likely to be especially devout, are concentrated in the latter group.

Based on the results in Tables 6 and 7, we revisit our back-of-the-envelope calculation of the price elasticity of demand for children. From Table 6, we find a price elasticity of 0.039 (0.007 [standard errors are in parentheses]) with year trends or 0.058 (0.016) with year fixed effects in the low-income category, 0.11 (0.015) with year trends or 0.099 (0.010) with fixed effects in the middle-income category, and 0.11 (0.038) with year trends or 0.027 (0.026) with fixed effects in the high-income category. The low elasticity for the low-income category is explained by the fact that, even though this group is the most responsive to changes in the child allowance it also has the highest baseline level of

fertility. Likewise, the high-income group is the least responsive to changes in the child allowance, but also has the lowest baseline level of fertility.

From Table 7, the price elasticity of demand is 0.079 (0.015) with year trends or 0.118 (0.014) with year fixed effects for the secular Jewish population, 0.079 (0.015) with year trends or 0.139 (0.024) with year fixed effects for the religious Jewish population, 0.017 (0.020) with year trends or 0.001 (0.031) with year fixed effects for the ultra-Orthodox Jewish population, and 0.083 (0.013) with year trends or 0.076 (0.023) with year fixed effects for Muslims. Even though the absolute responsiveness is greatest among Muslims, this group also has a high fertility rate compared to the secular and religious Jewish population. The effect is smallest for the ultra-Orthodox population, although from Table 8 we note that there is considerable heterogeneity by income category (the price elasticity among middle-income ultra-Orthodox Jews is 0.06).

5.6 The Effect by Age

A qualification to the results we have presented thus far is that they pertain to the short-run impact of financial incentives on fertility. Over a longer horizon, two additional effects may come into play. First, the policy change can gain or lose credibility over time. In the case of the child allowance, anecdotal evidence suggests that, although there was initial uncertainty regarding the 2003 reform, it gained substantial credibility over the first few months of its implementation.

Second, our results identify the immediate impact of financial incentives on fertility, rather than the impact on total fertility. Women could be postponing pregnancies if they perceive the policy not be credible, or the policy could also affect age at first birth or

the optimal spacing and timing of children. Unfortunately, given the horizon of our data and that the change in child allowance that we are studying is recent, it is impossible to identify the impact on the total fertility rate for the overall population. However, for older women a temporary reduction in fertility is likely to translate into a permanent reduction in fertility.

Table 9 presents our results broken down by age. We find a significant and positive effect of the child allowance for each age category. The coefficient decreases with age. The coefficient for 20 to 25 year olds is more than three times the coefficient for 35 to 40 year olds and more than ten times the coefficient for 40 to 45 year olds. At the same time, since the probability of pregnancy significantly decreases with age, the magnitude of the effect is largest among women younger than 25 or older than 40. Younger women are more likely to be able to postpone childbearing since their horizon of fertility is much longer, whereas older women are most likely opting out of a final incremental child.

Overall, these results suggest that our average effect is comprised not only a postponed fertility effect but also of a reduction in total fertility.

5.7 Differences-in-Differences Estimation

In this section, we present results for a difference-in-differences specification that uses just variation around the 2003 change in child allowance. As was already mentioned in section 3.2, there were two large changes in the level of the child allowance during the period we examine but the change brought about by the 2003 reform was the most dramatic. Furthermore, as discussed previously, the 2003 reform was also the most unanticipated of

the policy changes during the period we study. Thus, the 2003 reform provides a natural window for examining the effect of the child allowance.

We compare the proportion of women who became pregnant among those women who could have become pregnant (i.e., who were not currently pregnant or had not just given birth) between January 2003 and September or December 2003. We use the same months in 2002 as a comparison group. We choose these months because they provide clean pre- and post-windows around the policy change in May 2003. Aside from inflation adjustment, there were no policy changes in 2002 that could have an effect on the studied group, rendering this a plausible comparison group. To test the plausibility of the diffs-in-diffs assumption, we compare January with June across 2002 and 2003; since the policy chance occurred in late May 2003, we do not expect to see any changes by June, and accordingly we expect to find no significant differences.

The results are presented in Table 10. In panels (a), (b), and (c), there is no significant difference in comparing January and June across 2002 and 2003, lending credence to the diffs-in-diffs assumption that 2002 and 2003 are comparable years in terms of fertility absent the change in child allowance.

In panel (a), we find a significant decrease in fertility between January and September for both a simple difference in means and a probit specification with additional controls. For the probit specification, we also find a negative and significant effect between January and December. The magnitude of the effect is approximately 0.1 percentage points, which compared to the one-month probability of pregnancy of 1 percent yields a similar magnitude to the results presented in Table 4. When we further split the results by income group and by religion, we face significantly reduced sample sizes within each cell, and thus

it is not surprising that the results tend not to be statistically significant. When splitting by income, all but one of the effects for the low- and middle-income groups is negative, with significantly negative effects for the middle-income group. When splitting by religious group, we find consistently negative effects, with the one exception being an increase in fertility among Muslims between December and January 2003.

6. Conclusion

This paper has examined the effect of changes in child allowance levels on fertility using a large panel data set from Israel. By merging several comprehensive individual-level data sets maintained by Israel's CBS for non-public use, we are able to match fertility histories with a rich set of individual and household controls.

We find that the child allowance has had a positive and significant effect on fertility. The effect is robust to controlling for fertility trends, year trends, and year fixed effects and is weaker among women above the 90^{th} percentile of income. There is a significant effect for women in three of the four religious groups we observe, and also middle-income women in the fourth group, the ultra-Orthodox, a group whose religious principles discourage family planning.

Using a differences-in-differences specification to analyze the effect of the 2003 reform, we find a significant reduction in fertility associated with the reduction in child allowance. The effect is not only statistically significant but is also economically meaningful. Based on our results, the reduction in child allowance in 2003 led to a 7 percent reduction in births compared to the birthrate in the absence of the 2003 reform.

Although the effect is statistically significant and large in magnitude, it is notable that when we scale it by changes in benefits or to the cost of a child that resulted from the 2003 reform estimated elasticities are low (on the order of 0.1 for both). This reflects the fact that, although our results show a decrease in fertility on the order of 10 percent, the magnitude of the policy intervention in 2003 was even larger (a 77 percent decrease in benefits or a 106 percent increase in the cost of the marginal child). Our low elasticity estimates accord both with previous evidence on the modest fertility response to policy changes and with the Becker theory of fertility, which suggests that the demand for children is akin to the demand for capital goods, whose price elasticity of demand is known to be low (see for example Chirinko [1993]).

Appendix A: Description of Variables

Variable	Description
Pregnant	Equal to 1 if the woman was pregnant in the calendar year and 0 otherwise. It is calculated by timing 39 weeks back from the child's birth date.
Child allowance	The value of child allowance that will be given to the next child if born.
Relative child allowance	Child allowance divided by household income.
Incremental child allowance	Percent increase in child allowance per capita.
Father's age	The age of the father in years.
Mother working	Equal to 1 if the mother had a positive annual salary and 0 otherwise.
Father working	Equal to 1 if the father had a positive annual salary and 0 otherwise
Max education	Maximum of father's and mother's years of education. Equal to 1 for primary school, 2 for high school graduate, 3 for college, and 4 for post-graduate education.
Age at first birth	The age of the mother in years at first birth.
Fertility trend	The average number of children born five years ago within a reference group defined by a woman's religion, age, and education, and year.
Months from last birth	The number of months since the last birth.
Mother of Sefardic origin*	Equal to 1 if the mother is Jewish born in one of the following places: Middle East, Asia, North Africa, Morocco, Ethiopia, or Africa. If the mother is Israeli native then we look at her father's place of birth. Defined only for the Jewish population.
Father of Sefardic origin*	Equal to 1 if the father is Jewish and born in one of the following places: Middle East, Asia, North Africa, Morocco, Ethiopia, or Africa. If the father was born in Israel we look at his father's place of birth. Defined only for the Jewish population.
New immigrant	Equal to 1 if either the mother or the father is Jewish and immigrated to Israel after 1990.
No. of kids=Y	A dummy variable which is equal to 1 of the number of children the women had at the beginning of the calendar year is equal to Y and 0 otherwise.
Below poverty income	Equal to 1 if net income is below the poverty income. This dummy is computed separately each year conditional on the year specific poverty threshold.
Above poverty income and below 90per cent	Equal to 1 if net income is above poverty income and below 90per cent. This dummy is computed separately each year.
Top 90per cent	Equal to 1 if net income is in the 90^{th} percentile. This is computed separately by year and by religious group if the specification splits by religion.
Net income	Parents' total income minus tax, plus annual child allowance for existing children.
Log net household income	Log of net income.
Log income excluding mother's income	Log of net income excluding mother's income.
Religion Jew	Equal to 1 if the women if Jewish and religious and 0 otherwise.
Ultra Orthodox Jew	Equal to 1 if the women is ultra-Orthodox Jewish and 0 otherwise.
Arab Muslim	Equal to 1 if the women is Arab Muslim and 0 otherwise.
Secular	Equal to 1 if the women is Jewish and secular and 0 otherwise. In the regression Secular is the base religion category.
Year dummy YYYY	Equal to 1 if the current year if equal to YYYY and 0 otherwise.
Year trend	Linear calendar year trend.
Unemployment rate	Unemployment rate by year.
GDP change	GDP growth by year.

Notes: * Included as controls for specifications restricted to the Jewish population. Coefficients are suppressed.

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Table 1: Sample Statistics

	Full sample	Below poverty line	Poverty line to 90th percentile	Above 90th pecentile	Secular Jews	Religious Jews	Orthodox Jews	Arabs
Number of children	3.33	3.85	3.05	2.92	2.66	3.42	4.56	4.13
	(1.67)	(1.97)	(1.41)	(1.13)	(0.84)	(1.38)	(2.28)	(1.85)
Probabilty of getting	0.112	0.153	0.093	0.064	0.053	0.116	0.261	0.164
pregnant	(0.32)	(0.36)	(0.29)	(0.25)	(0.22)	(0.32)	(0.44)	(0.37)
Mother's age	34.87	34.19	35.82	37.84	36.16	35.03	32.99	32.79
	(5.54)	(6.08)	(5.43)	(4.15)	(4.75)	(5.43)	(6.04)	(6.07)
Husband's age	38.45	38.17	39.41	40.95	39.49	38.90	35.88	37.22
	(6.31)	(7.20)	(6.13)	(4.89)	(5.60)	(6.40)	(6.85)	(6.88)
Max Education	2.38	1.89	2.53	3.38	2.75	2.60	1.76	1.69
	(1.14)	(1.08)	(1.06)	(0.86)	(1.05)	(1.11)	(0.81)	(1.08)
Missing Education	8.68%	14.35%	5.96%	1.76%	4.74%	5.67%	14.60%	16.50%
Household income	119,218	29,884	135,289	362,538	151,791	128,684	76,914	59,930
	(298,241)	(34,486)	(49,010)	(868,425)	(387,353)	(231,710)	(103,580)	(52,897)
Mother income	36,268	6,381	43,213	109,767	50,352	40,252	23,443	7,382
	(76,524)	(13,523)	(38,283)	(199,214)	(79,590)	(122,720)	(32,962)	(21,030)
Father income	73,216	11,166	83,755	245,370	95,479	78,527	35,660	38,670
	(283,866)	(31,364)	(46,782)	(848,750)	(374,706)	(195,141)	(94,979)	(44,217)
Child Allowance	811	1,028	693	617	497	825	1,484	1,157
income	(849)	(1,016)	(723)	(565)	(345)	(707)	(1,370)	(992)
Mother working	0.60	0.29	0.77	0.93	0.76	0.73	0.55	0.21
	(0.49)	(0.50)	(0.42)	(0.26)	(0.43)	(0.44)	(0.50)	(0.41)
Husband working	0.73	0.39	0.92	1.00	0.80	0.80	0.50	0.68
	(0.44)	(0.49)	(0.27)	(0.07)	(0.40)	(0.40)	(0.50)	(0.47)
Sample size	1,368,627	513,686	713,029	141,642	713,371	182,964	178,522	293,770

Notes: Summary statistics are for a 40 percent random sample of women less than age 45 who were married and had at least two children between 1999 and 2005.

Table 2: The Distribution of Children among Women Aged 40-45 in 2005

Number of children less than 18	Secular	Religious	Ultra Orthadox	Arab Muslim
2	39.7%	14.0%	7.5%	4.9%
3	41.8%	25.5%	9.8%	11.2%
4	14.5%	29.3%	12.5%	21.7%
5	2.9%	16.5%	14.0%	22.4%
6+	1.2%	14.7%	56.2%	39.9%

Table 3: The Evolution of the Child Allowance: Monthly Per Child Allowanced Based on Family Size

Number of children	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
1	169	171	171	157	144	120	120	144	144	144	144
2	169	171	171	157	144	120	120	144	144	144	144
3	338	342	343	312	195	168	156	173	159	152	144
4	683	693	694	633	454	417	360	320	248	197	144
5	574	582	856	782	522	479	401	320	248	197	144
6	633	642	856	782	522	479	401	320	248	197	144
7+	591	599	856	782	522	479	401	320	248	197	144
newborns, post 2003	--	--	--	--	144	120	120	144	144	144	144

Table 4: Average Effect of Child Allowance on the Probability of Pregnancy

	(1)	(2)	(3)
	Only Year dummies	**Year trend**	**Year dummies**
Child Allowance		0.000021***	0.000032***
		(0.000003)	(0.000004)
Father age	-0.006080***	-0.006058***	-0.006051***
	(0.000218)	(0.000208)	(0.000205)
Mother working	-0.012221***	-0.012145***	-0.012099***
	(0.000940)	(0.000912)	(0.000891)
Father working	-0.011364***	-0.011265***	-0.011168***
	(0.001162)	(0.001126)	(0.001105)
Max education	-0.001255	-0.001129	-0.001023
	(0.000844)	(0.000841)	(0.000843)
Age at first birth	0.001067***	0.001023***	0.000995***
	(0.000154)	(0.000154)	(0.000158)
Fertility Trend	-0.011368***	-0.011276***	-0.011187***
	(0.000798)	(0.000816)	(0.000831)
Months from last birth	0.001672***	0.001663***	0.001659***
	(0.000162)	(0.000160)	(0.000161)
Months from last birth^2	-0.000014***	-0.000014***	-0.000014***
	(0.000001)	(0.000001)	(0.000001)
No of kids=3	-0.023640***	-0.027320***	-0.029209***
	(0.001132)	(0.001207)	(0.001472)
No of kids=4	-0.027110***	-0.030668***	-0.032473***
	(0.001422)	(0.001750)	(0.002034)
No of kids=5	-0.020621***	-0.024582***	-0.026576***
	(0.001808)	(0.002125)	(0.002413)
No of kids=6	-0.011798***	-0.016171***	-0.018364***
	(0.002460)	(0.002867)	(0.003093)
No of kids=7	0.009632***	0.004199	0.001460
	(0.003542)	(0.003747)	(0.004067)
Above poverty income and below 90%	-0.000452	-0.000723	-0.000776
	(0.001485)	(0.001463)	(0.001459)
Top 10%	0.015047**	0.014608**	0.014416**
	(0.005952)	(0.005889)	(0.005887)
Religious Jews	0.095213***	0.094915***	0.094712***
	(0.004503)	(0.004597)	(0.004667)
Ultra Orthodox Jews	0.245093***	0.244533***	0.244176***
	(0.007910)	(0.008156)	(0.008385)
Muslim Arabs	0.134760***	0.134251***	0.133996***
	(0.005775)	(0.005846)	(0.005999)
Year dummy 2000	-0.002701**		-0.002725***
	(0.001329)		(0.000746)
Year dummy 2001	-0.002577		-0.004854***
	(0.001722)		(0.001035)
Year dummy 2002	-0.001577		-0.000716
	(0.001036)		(0.001452)
Year dummy 2003	-0.006263***		0.006896**
	(0.001089)		(0.002735)
Year dummy 2004	-0.007650***		0.006149***
	(0.001473)		(0.002133)
Year dummy 2005	-0.011028***		0.002581
	(0.001833)		(0.001876)
Year trend		-0.000165	
		(0.000304)	
Unemployment		0.258337***	
		(0.047941)	
Change in GNP		0.019164***	
		(0.007310)	
Observations	1,368,161	1,368,161	1,368,161
% effect at mean CA	---	6.88%	10.47%
meanconcept	0.1125	0.1125	0.1125
Adjusted R2	0.130	0.130	0.130

Notes: Marginal probit coefficients are presented. Standard errors are clustered by year x number of children. Stars denote the level of statistical signifance: * for 0.01, ** for 0.05, * for 0.10.**

Table 5: Child Allowance Effect, Robustness Checks

	Controlling for log income		Excluding mother's income		Child allowance relative to household income		Incremental child allowance per capita	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Child allowance	0.000018***	0.000027***	0.000019***	0.000031***				
	(0.000003)	(0.000004)	(0.000003)	(0.000004)				
Relative Child allowance					0.085579**	0.078720*		
					(0.037782)	(0.040777)		
Incremental child allowance per capita							0.012830***	0.012426***
							(0.004251)	(0.004455)
Father age	-0.006027***	-0.006021***	-0.006013***	-0.006006***	-0.006052***	-0.006051***	-0.006050***	-0.006050***
	(0.000217)	(0.000214)	(0.000221)	(0.000218)	(0.000222)	(0.000222)	(0.000221)	(0.000221)
Mother working	-0.021199***	-0.021115***			-0.021239***	-0.021263***	-0.021053***	-0.021075***
	(0.001238)	(0.001220)			(0.001214)	(0.001219)	(0.001194)	(0.001198)
Father working	-0.027155***	-0.026972***	-0.035356***	-0.035304***	-0.027229***	-0.027235***	-0.026912***	-0.026912***
	(0.002481)	(0.002476)	(0.005379)	(0.005414)	(0.002443)	(0.002433)	(0.002407)	(0.002396)
Max education	-0.001647*	-0.001549*	-0.001694*	-0.001588*	-0.001845**	-0.001843**	-0.001890**	-0.001887**
	(0.000879)	(0.000880)	(0.000914)	(0.000916)	(0.000875)	(0.000871)	(0.000878)	(0.000875)
Age at first birth	0.000958***	0.000933***	0.001102***	0.001071***	0.000971***	0.000974***	0.000958***	0.000959***
	(0.000165)	(0.000170)	(0.000181)	(0.000185)	(0.000161)	(0.000161)	(0.000160)	(0.000159)
Fertility Trend	-0.012233***	-0.012146***	-0.012609***	-0.012510***	-0.012292***	-0.012298***	-0.012296***	-0.012298***
	(0.000818)	(0.000836)	(0.000814)	(0.000836)	(0.000806)	(0.000805)	(0.000803)	(0.000803)
Months from last birth	0.001669***	0.001666***	0.001659***	0.001655***	0.001676***	0.001676***	0.001675***	0.001676***
	(0.000161)	(0.000162)	(0.000163)	(0.000165)	(0.000162)	(0.000163)	(0.000162)	(0.000163)
Months from last birth^2	-0.000014***	-0.000014***	-0.000014***	-0.000014***	-0.000014***	-0.000014***	-0.000014***	-0.000014***
	(0.000001)	(0.000001)	(0.000001)	(0.000001)	(0.000001)	(0.000001)	(0.000001)	(0.000001)
Unemployment	0.239760***		0.228051***		0.161458***		0.162796***	
	(0.042480)		(0.047863)		(0.058831)		(0.054933)	
Change in GNP	0.023020***		0.021942***		0.010977		0.011757	
	(0.006789)		(0.007508)		(0.008954)		(0.008503)	
Log net household income	0.009978***	0.009913***			0.011323***	0.011236***	0.011850***	0.011803***
	(0.001505)	(0.001516)			(0.001773)	(0.001804)	(0.001838)	(0.001867)
Log net income excluding mother			0.004690***	0.004696***				
			(0.001142)	(0.001150)				
Year trend	Yes	No	Yes	No	Yes	No	Yes	No
Year dummies	No	Yes	No	Yes	No	Yes	No	Yes
Religious dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No of kids dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,367,994	1,367,994	1,366,606	1,366,606	1,367,951	1,367,951	1,367,951	1,367,951
% effect at mean CA	5.86%	9.09%	6.44%	10.17%	---	---	---	---
meanconcept	0.1125	0.1125	0.1125	0.1125	0.1125	0.1125	0.1125	0.1125
Adjusted R2	0.131	0.131	0.130	0.130	0.131	0.131	0.131	0.131

Notes: Marginal probit coefficients are presented. Standard errors are clustered by year x number of children. Stars denote the level of statistical signifance: * for 0.01, ** for 0.05, * for 0.10.**

Table 6: Effect of Child Allowance by Income Groups

	Below poverty income		Above poverty income and below 90%		Top 10%	
	(1)	(2)	(3)	(4)	(5)	(6)
Child Allowance	0.000021***	0.000033***	0.000022***	0.000032***	0.000009**	0.000016***
	(0.000003)	(0.000004)	(0.000002)	(0.000003)	(0.000004)	(0.000005)
Father age	-0.006981***	-0.006977***	-0.005521***	-0.005510***	-0.003898***	-0.003890***
	(0.000103)	(0.000103)	(0.000077)	(0.000077)	(0.000148)	(0.000148)
Mother working	-0.015560***	-0.015570***	-0.012113***	-0.012039***	-0.008654***	-0.008599***
	(0.001009)	(0.001009)	(0.000790)	(0.000789)	(0.002127)	(0.002124)
Father working	-0.010354***	-0.010315***	-0.019143***	-0.018873***	-0.005134	-0.004985
	(0.000914)	(0.000914)	(0.001293)	(0.001292)	(0.008175)	(0.008153)
Max education	-0.005634***	-0.005500***	0.000282	0.000373	0.002431***	0.002471***
	(0.000472)	(0.000473)	(0.000290)	(0.000290)	(0.000596)	(0.000596)
Age at first birth	0.001440***	0.001417***	0.000953***	0.000923***	-0.001153***	-0.001174***
	(0.000166)	(0.000166)	(0.000105)	(0.000105)	(0.000188)	(0.000188)
Fertility Trend	-0.018217***	-0.018158***	-0.007782***	-0.007684***	0.004519	0.004885*
	(0.000914)	(0.000914)	(0.000740)	(0.000740)	(0.002791)	(0.002795)
Months from last birth	0.001960***	0.001956***	0.001629***	0.001625***	0.001362***	0.001358***
	(0.000047)	(0.000047)	(0.000028)	(0.000028)	(0.000050)	(0.000050)
Months from last birth^2	-0.000020***	-0.000020***	-0.000013***	-0.000013***	-0.000011***	-0.000011***
	(0.000000)	(0.000000)	(0.000000)	(0.000000)	(0.000000)	(0.000000)
Unemployment	0.177230**		0.299210***		0.144691*	
	(0.070819)		(0.049164)		(0.080000)	
Change in GNP	-0.009243		0.033031***		0.020285*	
	(0.011177)		(0.006933)		(0.012127)	
Year trend	Yes	No	Yes	No	Yes	No
Year dummies	No	Yes	No	Yes	No	Yes
Religious dummies	Yes	Yes	Yes	Yes	Yes	Yes
No of kids dummies	No	No	No	No	No	No
Observations	513,659	513,659	713,000	713,000	141,502	141,502
% effect at mean CA	5.25%	8.16%	9.06%	13.12%	5.16%	8.96%
meanconcept	0.153195	0.153195	0.092661	0.092661	0.064345	0.064345
Adjusted R2	0.130	0.130	0.111	0.111	0.121	0.121

Notes: Marginal probit coefficients are presented. Standard errors are clustered by year x number of children. Stars denote the level of statistical signifance: * for 0.01, ** for 0.05, * for 0.10.**

Table 7: The Effect of Child Allowance by Religious Groups

	Secular Jews		Religious Jews		Ultra-Orthodox Jews		Muslim Arabs	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Child Allowance	0.000020***	0.000030***	0.000021***	0.000036***	0.000007	0.000000	0.000025***	0.000023***
	(0.000004)	(0.000003)	(0.000004)	(0.000006)	(0.000008)	(0.000012)	(0.000004)	(0.000007)
Father age	-0.002573***	-0.002561***	-0.006150***	-0.006139***	-0.015536***	-0.015533***	-0.008371***	-0.008370***
	(0.000162)	(0.000160)	(0.000322)	(0.000317)	(0.000563)	(0.000562)	(0.000386)	(0.000386)
Mother working	-0.006983***	-0.006948***	-0.012129***	-0.012181***	-0.023216***	-0.023231***	-0.024064***	-0.024054***
	(0.000801)	(0.000796)	(0.001880)	(0.001858)	(0.002602)	(0.002600)	(0.001816)	(0.001815)
Father working	0.000227	0.000429	-0.004532*	-0.004013	-0.048616***	-0.048619***	-0.011230***	-0.011201***
	(0.001398)	(0.001401)	(0.002554)	(0.002520)	(0.003446)	(0.003446)	(0.001948)	(0.001964)
Max education	0.000867	0.000919	0.009448***	0.009656***	0.007087***	0.006952***	-0.007421***	-0.007461***
	(0.000665)	(0.000652)	(0.000745)	(0.000749)	(0.001997)	(0.002040)	(0.001337)	(0.001307)
Age at first birth	-0.001016***	-0.001046***	0.000400	0.000341	0.007530***	0.007541***	0.001145***	0.001147***
	(0.000109)	(0.000108)	(0.000405)	(0.000408)	(0.000813)	(0.000813)	(0.000332)	(0.000332)
Fertility Trend	0.001143	0.001381	-0.018379***	-0.017992***	-0.027876***	-0.027934***	-0.011889***	-0.011895***
	(0.002539)	(0.002509)	(0.004197)	(0.004168)	(0.004008)	(0.003990)	(0.003417)	(0.003415)
Months from last birth	0.001085***	0.001081***	0.001979***	0.001976***	0.006073***	0.006075***	0.002741***	0.002741***
	(0.000099)	(0.000101)	(0.000195)	(0.000197)	(0.000575)	(0.000576)	(0.000328)	(0.000329)
Months from last	-0.000008***	-0.000008***	-0.000019***	-0.000018***	-0.000064***	-0.000064***	-0.000029***	-0.000029***
birth^2	(0.000001)	(0.000001)	(0.000001)	(0.000001)	(0.000006)	(0.000006)	(0.000002)	(0.000002)
Above poverty income	-0.002724	-0.002756	-0.003430	-0.003456	0.000667	0.000676	-0.004537**	-0.004530**
and below 90%	(0.001939)	(0.001940)	(0.002412)	(0.002380)	(0.003334)	(0.003335)	(0.001895)	(0.001896)
Top 10%	0.008668***	0.008536***	0.001261	0.000963	-0.007224	-0.007126	0.002053	0.002086
	(0.003227)	(0.003215)	(0.004585)	(0.004549)	(0.004849)	(0.004879)	(0.003871)	(0.003877)
Unemployment	0.063288		0.312528***		0.730649***		0.349562***	
	(0.059405)		(0.107179)		(0.179900)		(0.111269)	
Change in GNP	0.022431***		0.038177***		0.021219		-0.013351	
	(0.008158)		(0.013837)		(0.029495)		(0.013837)	
Year trend	Yes	No	Yes	No	Yes	No	Yes	No
Year dummies	No	Yes	No	Yes	No	Yes	No	Yes
Religious dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No of kids dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	707,615	707,615	182,136	182,136	178,328	178,328	293,735	293,735
% effect at mean CA	12.76%	19.02%	7.00%	12.27%	1.05%	0.07%	6.33%	5.84%
meanconcept	0.0533	0.0533	0.1162	0.1162	0.2612	0.2612	0.1638	0.1638
Adjusted R2	0.075	0.075	0.066	0.066	0.080	0.080	0.083	0.083

Notes: Marginal probit coefficients are presented. Standard errors are clustered by year x number of children. Stars denote the level of statistical signifance: * for 0.01, ** for 0.05, * for 0.10.**

Table 8: Effect of Child Allowance by Economic Group and by Religious Group

	Below poverty income	Above poverty income and below 90%	Top 10%
	(1)	(2)	(3)
Secular Jew	0.000022***	0.000024***	0.000007
	(0.000005)	(0.000005)	(0.000006)
% effect	14.0%	15.3%	4.3%
Religious Jew	0.000032***	0.000017***	-0.000003
	(0.000011)	(0.000006)	(0.000010)
% effect	10.1%	5.9%	-1.2%
Orthodox Jew	0.000002	0.000017*	0.000007
	(0.000010)	(0.000009)	(0.000014)
% effect	0.3%	3.2%	1.7%
Muslim	0.000021***	0.000034***	0.000034***
	(0.000004)	(0.000008)	(0.000011)
% effect	5.1%	8.8%	12.2%

Notes: Additional controls include a religious group x age fertility trend, year trends, education controls, mother's age, fathers, age, mother's work status, mother's lagged pregnancy status, religous group dummies, and dummies for household income. Marginal probit coefficients are presented. Standard errors are clustered by year x number of children. Stars denote the level of statistical signifance: *** for 0.01, ** for 0.05, * for 0.10.

Table 9: The Effect of Child Allowance by Mother's Age

	(1)	(2)
	Year trend	**Year dummy**
Womed under 25	0.000032***	0.000027***
	(0.000010)	(0.000010)
% effect	3.68%	3.16%
Women between 25-30	0.000024***	0.000023***
	(0.000006)	(0.000008)
% effect	4.32%	4.19%
Women between 30-35	0.000023***	0.000028***
	(0.000004)	(0.000005)
% effect	6.35%	7.87%
Women between 35-40	0.000010***	0.000018***
	(0.000004)	(0.000004)
% effect	5.87%	10.33%
Women above 40	0.000003*	0.000005**
	(0.000001)	(0.000002)
% effect	5.99%	10.22%

Notes: Additional controls include a religious group x age fertility trend, year trends, education controls, mother's age, fathers, age, mother's work status, mother's lagged pregnancy status, religous group dummies, and dummies for household income. Marginal probit coefficients are presented. Standard errors are clustered by year x number of children. Stars denote the level of statistical signifance: *** for 0.01, ** for 0.05, * for 0.10.

Table 10: Difference in Differences Effect of Child Allowance, 2003 reform

	Full population	
	Difference in means no controls)	Probit with controls
June - January,	0.00046	0.0011
2002 vs. 2003	(0.00091)	(0.00071)
September - January,	-0.0019**	-0.0016**
2002 vs. 2003	(0.00091)	(0.00070)
December - January,	-0.00081	-0.00098**
2002 vs. 2003	(0.00073)	(0.00050)

	Below povery line		Between poverty line and 90th percentile		Above 90th percentile	
	Difference in means (no controls)	Probit with controls	Difference in means (no controls)	Probit with controls	Difference in means (no controls)	Probit with controls
June - January,	0.0023	0.0035	-0.00020	0.000062	0.0018	0.0014
2002 vs. 2003	(0.0018)	(0.0015)	(0.0011)	(0.00089)	(0.0021)	(0.0015)
September - January,	-0.0014	-0.0014	-0.0021*	-0.0018**	0.00041	0.00026
2002 vs. 2003	(0.0018)	(0.0014)	(0.0011)	(0.00088)	(0.0020)	(0.0015)
December - January,	0.00060	-0.00081	-0.00057	-0.0013**	0.00075	0.00091
2002 vs. 2003	(0.0015)	(0.001019)	(0.00090)	(0.00064)	(0.0016)	(0.0011)

	Secular		Religious		Orthodox		Muslim	
	Difference in means (no controls)	Probit with controls	Difference in means (no controls)	Probit with controls	Difference in means (no controls)	Probit with controls	Difference in means (no controls)	Probit with controls
June - January,	0.00037	0.00031	-0.0011	-0.00056	-0.00028	0.0033	0.0049	0.0046
2002 vs. 2003	(0.00086)	(0.00072)	(0.0025)	(0.0022)	(0.0040)	(0.0036)	(0.0024)	(0.0021)
September - January,	-0.00077	-0.00074	-0.00033	-0.00033	-0.020**	-0.0077**	-0.00090	-0.0019
2002 vs. 2003	(0.00086)	(0.00071)	(0.0026)	(0.0022)	(0.0028)	(0.0035)	(0.0024)	(0.0020)
December - January,	-0.00019	-0.00014	-0.00070	-0.0010	-0.0062**	-0.0055**	0.0032*	-0.0011
2002 vs. 2003	(0.00069)	(0.00054)	(0.0020)	(0.0017)	(0.0032)	(0.0026)	(0.0019)	(0.0015)

Notes: * Probit specifications present marginal cofficients and additional controls include a religious group x age fertility trend, year trends, education controls, mother's age, fathers, age, mother's work status, mother's lagged pregnancy status, religous group dummies, and dummies for household income. Stars denote the level of statistical signifance: *** for 0.01, ** for 0.05, * for 0.10.

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