Do parents save more for a daughter or a son? Evidence on gender favoritism from a child savings program

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Abstract

This paper provides empirical evidence that there are disparities in parental savings for their children based on gender and highlights that parents tend to allocate more financial resources to children who are perceived as future breadwinners. We specifically examine the case of a government-sponsored savings program in Israel, focusing on two religious/ethnic minorities (Ultra-Orthodox Jewish and Arab populations) characterized by similar cultural gender biases but distinct economic incentives concerning the future earning potential of girls versus boys. By investigating these minorities, we uncover motivations behind gender favoritism around the world. Our findings reveal that Ultra-Orthodox Jewish parents tend to make additional deposits for girls, anticipating their role as primary breadwinners, while Arab parents allocate extra funds for boys, reflecting their expectations regarding future income prospects. Administrative and survey data provide additional evidence suggesting that the primary driving factor behind this effect is economic incentives and investment in future breadwinners. This outcome proves that gender bias is reversed when economically worthwhile. Such insights should be considered when designing savings programs or when thinking of labor market programs. Biases in the early stages of life impact and are influenced by future economic abilities, potentially leading to significant effects on gender inequality.
Keywords/JEL Codes: Gender bias, Culture, Savings/ D14, J16, G51

1 Introduction

This paper empirically demonstrate disparities in parental savings for children based on their gender and sheds light on the mechanism behind parents favoritism. We find that economic incentives matter more than cultural preferences. The issue of gender bias and favoritism in parental financial transfers and investments in their children is well-documented in the literature. However, there is still an open discussion on the origin of gender favoritism, whether it primarily arises from cultural preferences and norms or is significantly influenced by economic incentives and expected returns(e.g.Mishkin 2021; Jayachandran 2015; Ongena and Popov 2016; Duflo 2012; Jensen 2012; Light and McGarry 2004; Chu 1991) This paper aims to provide additional evidence on the source of gender bias and favoritism using a unique case study and setup that allows to entangle economic incentives and cultural preferences.

In 2017, the Israeli National Insurance Institute (NII) introduced the Savings for Every Child Program (SECP). Under the SECP, the government deposits approximately US$ 15 (NIS 50 indexed) per month into a savings account for every Israeli child under the age of 18 and covers the associated account fees until the child reaches the age of 21. While defaults are in place, parents have the option to actively participate in the program. They can exercise control over where and how to invest these funds, and to

make additional monthly deposits of approximately US$ 15 to the SECP account. Given the program's tax benefits, government-covered fees, and the ability for parents to tailor their level of risk and choose their preferred financial institution, the SECP represents an attractive savings vehicle.

Israel encompasses two significant religious and ethnic minority groups: the Ultra-Orthodox Jewish community and the Arab population which constitute approximately 12% and 21% of the 2021 population, respectively (CBS 2022). The Ultra-Orthodox Jewish population is recognized for its religiously insular nature, featuring unique cultural elements (Goldfarb and Neuman 2023, 2020; Lehmann and Siebzehner 2009). Within this community, a patriarchal structure is evident, with an intriguing twist: while men primarily concentrate on religious studies, it falls upon the women to assume the responsibility of providing for the household income. The Arab population in Israel (which is mainly Muslim) is a religious and ethnic minority, adhering to a patriarchal structure that bears similarities to other minority groups worldwide. While the distinctive perspective of the Ultra-Orthodox Jewish community highlights women's role in providing for the household, both the Ultra-Orthodox Jewish and Arab populations exhibit a pronounced cultural gender bias and a preference for males (Ahmed 2021; Radford 1999; Lehmann and Siebzehner 2009, Haddad and Esposito 2020; Jayachandran 2015).

The examination of parents' additional deposits into children's savings accounts within the SECP, is a unique setup to directly investigate parents decisions to financially invest in children. This clean setup combined with the significant contrast between cultural preferences and financial incentives within Israel's minority populations, offers a unique opportunity to explore motivation behind gender bias and favoritism regarding children. In this case study, child's gender is random, we have two populations characterized by similar cultural preferences but distinct economic incentives, both participating in the same program, accessing the same infrastructure, and enjoying equal access to information.

We analyze administrative NII data covering all children in Israel, comprising a total of 2,345,882 observations. Among these, 537,126 are from the Arab population, while 384,916 are from the Ultra-Orthodox Jewish population. Employing logit estimations and controlling for various household attributes such as income, education, and family size, we examine the interaction between minority affiliation and the gender of the child impact on the likelihood of additional savings. We find that Ultra-Orthodox Jewish parents deposit additional funds for girls while Arab parents deposit additional funds for boys. These findings are economically and statistically significant results. Specifically, there is a 16% higher rate of savings for girls in the Ultra-Orthodox population and an 18% decline in savings for girls in the Arab population. However, for non-Ultra-Orthodox Jewish populations, the effect is neither statistically nor economically significant. The parental favoritism persists across various robust specifications, including households with

both girls and boys. This outcome indicates that gender bias can be reversed when economically incentivized. We then delve into investigating mechanisms, demonstrating that women's bargaining power within the household (when women contribute a larger share of income to the household e.g. Dizon-Ross and Jayachandran, 2022; Duflo, 2003) is not the primary determinant of the main outcome. Using survey data from the inception of the savings program in 2017, we offer evidence that parents' expectations regarding these funds revolve around investment in human capital and education. Additionally, we leverage a unique aspect of the Ultra-Orthodox population to illustrate that the marriage market is not a predominant factor in the observed outcomes.This additional evidence strengthens the argument that parents' decisions regarding savings are significantly influenced by considerations related to their children's future economic prospects.

Extrapolating from the case study's crucial outcomes to more general observations highlights important factors to consider when implementing savings or labor market programs. Biases experienced in the early stages of life not only impact but are also shaped by future economic incentives and labour market programs, potentially resulting in substantial effects on gender inequality.

2 Literature review

The issue of gender bias and favoritism in parental financial transfers and investments in their children is well-documented in the literature (e.g.Carlsson Hauff and Hermansson 2023; Tani et al. 2023; Mishkin 2021; Jayachandran 2015; Barcellos et al. 2014; Ebenstein and Leung 2010; Chu 1991). Historically, the practice of bequeathing the entirety of an estate to male children was widespread and continues to be prevalent in many developing societies (see, for instance Kaul 2018; Chu 1991; Guinnane 1992). But contemporary evidence suggests that parental gender bias and favoritism persists even in modern developed countries such as the US (Mishkin 2021).

There is still an open discussion on the origin of gender bias, whether it primarily arises from cultural preferences and norms or is significantly influenced by economic incentives and expected returns.[1]

There is evidence suggesting that gender bias is predominantly associated with cultural preferences rather than being dependent on local infrastructure and economic opportunities. For instance, Ongena and Popov 2016 provides evidence that gender biases in the use of credit by US immigrant women tends to be more pronounced when cultural gender bias in country of origin is higher. Alesina et al. 2013 examine gender preferences and attitudes towards gender roles and demonstrate that they are influenced by historical patterns of women's ability to participate in the labor force. Additionally, other studies,

[1]This is also connected to a wider discussion on gender bias in the working force e.g Ater et al. 2023; Jayachandran et al. 2023; Sherman and Tookes 2022; Kessler et al. 2019.

indicate that increased control of household income by women is associated with greater investments in girls, highlighting a gender preference (e.g. Dizon-Ross and Jayachandran 2022; Duflo 2003; Qian 2008).

There is also a large literature pointing to the importance of economic incentives and expected returns on gender bias. Economic incentives can be influenced by various underlying mechanisms that contribute to gender bias. Firstly, in societies with patriarchal cultural and societal structures, males may utilize monetary transfers and inheritance to secure higher expected income than females (e.g. Tani et al. 2023; Kaul 2018; Qian 2008; Ebenstein and Leung 2010; Qian 2008; Chu 1991). Within this same patriarchal societal framework, parents might invest more in male children if they are expected to reciprocate monetary support in their parents' older age and provide economic assistance (e.g. Ebenstein and Leung 2010; Qian 2008; Light and McGarry 2004; Cox 1987). In contrast, care-giving responsibilities, which are typically performed by females, may result in greater transfers for girls (e.g. Loxton 2019; Light and McGarry 2004; Cox 1987).

Related to this topic is research on patrilocality and matrilocality, which explores where children reside after marriage. Typically, patrilocality is more prevalent were sons tend to stay near their parents, while daughters often relocate to their husband's hometown. This dynamic can influence parents' inclination to invest in their children, as they benefit more when their children live nearby (e.g. Zhao 2023; Bau 2021; Ebenstein 2021). Dowries and bride-prices can also impact parents' inclination to invest in their children and their education, as these factors can contribute to securing a more favorable marriage arrangement and a higher bride-price (e.g. Khalifa 2022; Ashraf et al. 2020; Anderson 2007; Anderson and Bidner 2015; Ambrus et al. 2010; Botticini and Siow 2003).

Further evidence from developing countries indicate that parents' level of care for their children responds to changing economic incentives. Jayachandran and Lleras-Muney 2009; Jensen 2012 and Shrestha and Palaniswamy 2017 find that when girls or boys are faced with better financial prospects later in life, there is an increase in parental care during their childhood, and they are more likely to receive schooling.[2].

Another mechanism related to economic incentives involves parents providing unequal monetary transfers to fund education attainment (e.g. Kaul 2018; McGarry 2016; Wong 2013; Loxton 2019). For example, Wong 2013 provided evidence of different inter-vivos transfer trends between boys and girls, with larger gifts for boys in South Korea and higher gifting for girls in the United States. This disparity is explained by the need to finance varying levels of education when there are gender-based inequalities in educational attainment.[3]

[2]Furthermore, there is evidence indicating that economic incentives influence inter-household decision-making between men and women. However, it appears that cultural preferences still play a significant role in these contexts (e.g., Paredes et al. 2024; Hancock et al. 2023)

[3]An additional explanation offered in the literature for unequal transfers is that parents may allocate additional funds to children who are in greater need of support due to specific life events. (e.g. McGarry

This paper aims to provide additional evidence on the source of gender bias using a unique case study and setup that allows us to disentangle economic incentives and cultural preferences. The data and setting also enable us to investigate additional mechanisms such as mothers' bargaining power, patrilocality and matrilocality, level of care for parents, and the marriage market. The unique setup will help determine whether, when parents encounter a cultural bias in one direction and economic incentives in another, which factor prevails.

3 Setup

3.1 SECP

In 2017, the Israeli National Insurance Institute (NII) introduced the Savings for Every Child Program (SECP). Under the SECP, the government deposits approximately US $15 (NIS 50 indexed) per month into a savings account for every Israeli child under the age of 18 and covers the associated account fees until the child reaches the age of 21. Additionally, there are bonuses awarded at age milestones until age 18, totaling approximately US $130. An additional bonus of approximately US $130 is provided if savings remain in the account until the age of 21. While defaults are in place, parents have the option to actively participate in the program. They can exercise control over where and how to invest these funds and make additional monthly deposits of approximately US $15 to the SECP account. Given the program's tax benefits, government-covered fees and bonuses, and the ability for parents to tailor their level of risk and choose their preferred financial institution, the SECP represents an attractive savings vehicle (Butrica 2015). Active enrollment in the SECP program can be done online, via phone, or in person. During the initial installation of the program, parents actively enrolled for two thirds of child account and fifty percent choose to deposit additional funds to these accounts. These rates dropped over time but still remain relatively high. As of January 2020, overall parents choose to deposit additional funds in 49% of child accounts. Despite general high levels of program enrollment and participation, economically vulnerable households—minority groups and especially the Arab minority, tended to engage less with the program, and do not deposit additional funds to the account (e.g. Haran Rosen and Sade 2022a, Haran Rosen et al. 2021), Berkely 2019).

Estimated account size at age 18 can range from ≈US $3,000 to ≈US $20,000 depending on parents choices (additional deposit and saving track) (Pinto and Gottlieb 2019). A year of college in Israel is ≈US $2,500, meaning estimated funds can cover costs of

2016, Dunn and Phillips 1997). However, in this paper, we focus on analyzing savings and transfers to children, and since future life events are unpredictable, they should not significantly impact the outcomes we are examining.

between 1- 6 years of tuition.

3.2 Ultra-Orthodox Jewish and Arab populations

Israel encompasses two significant religious and ethnic minority groups, each characterized by distinct attributes: the Ultra-Orthodox Jewish and the Arab populations. The Ultra-Orthodox Jewish and the Arab populations constitute approximately 12% and 21% of the 2021 population, respectively (CBS 2022; Kasir and Romanov 2017). The Ultra-Orthodox Jewish population is recognized for its religiously insular nature, featuring unique cultural elements (Goldfarb and Neuman 2023; Zupnik 2022; Gordon 2022; Kasir and Tsachor-Shai 2016; Lehmann and Siebzehner 2009). Within this community, a patriarchal structure is evident, with an intriguing twist: while men primarily concentrate on religious studies, it falls upon the women to assume the responsibility of providing for the household income. This is a relatively recent shift in the last decades, influenced in part by government subsidies for religious studies, present a unique opportunity to explore a scenario where women emerge as the main breadwinners, despite prevailing cultural preferences that continue to prioritize men. The Arab population in Israel (which is mainly Muslim) is a religious and ethnic minority, adhering to a patriarchal structure that bears similarities to other minority groups worldwide.

The Ultra-Orthodox Jewish and Arab populations have high fertility rates. Ultra-Orthodox Jewish women fertility rate was 6.62 and was 2.82 for Arab women in 2020, while the distribution between females and males aligns with that of the general population CBS 2020).[4] Both populations face high poverty rates.[5] Among the Ultra-Orthodox Jewish population, poverty is primarily attributed to the low levels of education and workforce participation among men, whereas in the Arab population, it predominantly emanates from the lower workforce participation rates among women (BOI 2022). In the Ultra-Orthodox Jewish community, workforce participation stands at 89% for women, while for men, it is notably lower at 49%. In contrast, among the Arab population, workforce participation rates for women and men are 45% and 71%, respectively, highlighting a distinct gender-based division of labor. In comparison, the non-Ultra-Orthodox Jewish population exhibits higher workforce participation levels, with rates of 84% for women and 87% for men. Furthermore, academic attainment levels reveal disparities within these minority groups. Among Ultra-Orthodox Jewish women, academic attainment is notably higher at 33% in comparison to a mere 7% among men. In the Ultra-Orthodox community, education for men is predominantly free, primarily centered on religious studies. However, this focus results in minimal emphasis on other vocational subjects. Upon

[4]In Israel, you cannot use an IVF procedure to choose the sex of the child unless you have four children of the same gender.

[5]Forty-two percent of Ultra-Orthodox households and 45% of Arab households lived in poverty in 2018, with less than half of the median household income.

completing 12 years of education, male students possess limited knowledge in math, science, and no proficiency in English. In contrast, women in the same community graduate with vocational knowledge comparable to other populations, demonstrating proficiency in math, science, and English. This proficiency significantly impacts their eligibility and success in academics. For the other populations their are no such disparities in the education system by gender. Within the Arab population, academic attainment is also higher for women, although the difference is less pronounced. Academic attainment for women and men stands at 29% and 19%, respectively. In the non-Ultra-Orthodox Jewish population there are higher academic attainment figures, especially for men with 37% for women and 43% for men. These disparities in education are further evident when analyzing the 2022 test scores from the Program for International Student Assessment (PISA, Ministry of Education 2023). PISA assesses the knowledge and skills of 15-year-old students in mathematics, reading, and science in Israel, revealing the low level of academic attainment among Ultra-Orthodox Jewish boys and the relatively high level of academic attainment among Ultra-Orthodox Jewish girls.

While the distinctive perspective of the Ultra-Orthodox Jewish community highlights women's role in providing for the household, both the Ultra-Orthodox Jewish and Arab populations exhibit a pronounced cultural gender bias and a preference for males (e.g. Ahmed 2021; Haddad and Esposito 2020; Jayachandran 2015; Kasir and Tsachor-Shai 2016; Lehmann and Siebzehner 2009; Radford 1999). This bias is also evident in CBS survey data, where a significant portion of individuals from these communities report that women are primarily responsible for laundry and cleaning, while a smaller proportion mention women's involvement in household finances (CBS 2009).[6] Specifically, 81% of the Ultra-Orthodox Jewish population and 91% of the Arab population indicate that women handle laundry duties in their households, in contrast to 71% in the general population. Additionally, 63% of the Ultra-Orthodox Jewish population and 84% of the Arab population state that women are responsible for cleaning the household, as opposed to 51% in the general population. Conversely, only 9% of the Ultra-Orthodox Jewish population and 11% of the Arab population indicate that women are in charge of household finances, in contrast to 20% in the general population. Furthermore, former research reveals that in both minorities women are less financially literature (e.g. Dresler and Hurwitz 2023; Haran Rosen and Sade 2022a,b). Indicating additional aspects of financial gender bias in these households.

As previously mentioned, there are specific incentives that can influence parents' investment choices in their children, extending beyond direct economic incentives and cultural preferences. These incentives stem from factors such as mother's bargaining power, considerations related to the marriage market or the potential support that children can

[6]Cultural bias toward housework appears to be prevalent in many communities (e.g. Hancock et al., 2023); however, these populations exhibit a higher bias than the rest of the population.

provide to their parents as they age. In the following, we describe the relevant additional incentives in the specific Israeli setting.

Marriage incentives for Ultra-Orthodox Jewish and the Arab populations have changed over time. Dowry was common in both cultures but is not prevalent or substantial nowadays in these communities in Israel (e.g. Lehmann and Siebzehner 2009; Jayachandran 2015). This is inline with the literature that shows that such practices decline in developing countries (e.g. Anderson and Bidner 2015). On the other hand, as real estate prices go up it seems that the marriage market for the Ultra-Orthodox Jewish population is putting a bigger emphasis on the women's ability to provide capital for housing. This is especially true for a specific type of Ultra-Orthodox Jewish community that have a higher rate of men completely devoted to religious studies and being payed a small allowance from the government to do so (e.g. Zupnik 2022; Gordon 2022). Therefore, while dowry practices are not widespread overall, there may be comparable motivations to save for girls within the specific sub-group of the Ultra-Orthodox Jewish community.

Culturally and historically, it is common for young couples in the Ultra-Orthodox Jewish population to move next to the bride's family (Matrilocality) and next to the groom's family for the Arab population (Patrilocality). However, Israel is a small country (most places are less than a 4-hour drive even with traffic), and additionally, these populations tend to reside in specific areas, leading to even less dispersion. The rise in housing prices has also affected the ability of the bride and groom to stay close to family, as they move to more peripheral and less expensive localities (Haj-Yahya et al. 2022; Regev and Gordon 2022). Hence, it seems that patrilocality and matrilocality should have a mitigated effect on parents' investment decisions for these populations nowadays and should be similar across both populations.

Survey data reveals that within both minority communities, men are more inclined to offer financial support to their parents compared to women (CBS 2019) but women are generally more likely to physically support parents (e.g. Arazi et al. 2023; Brodsky et al. 2011). It should also be noted that both minority communities have a strong communal structure, and many family and community members offer support to the elderly (e.g. Halperin 2015; Shulyaev et al. 2020). Hence, for these communities, children's future assistance for parents appears similar. High fertility rates also lead to a mitigated effect on parents' expectations of help from each specific child.

The administrative data utilized for this investigation will enable us to examine the indirect effects that may still be influencing parents investment in children in the Israeli context. Specifically, we will explore the Ultra-Orthodox Jewish sub-group, where the dynamics of the marriage market may have a more pronounced impact on parents' savings for girls and mothers' bargaining power.

The SECP, along with the unique features within Israel's minority populations, presents a distinctive opportunity to investigate gender bias and favoritism concerning children

and offers several notable advantages. It relies on random assignment of whether the child is a boy or girl, as well as a clean financial setting of parental monetary investments in young children. Additionally, it utilizes comprehensive administrative data covering the entire child population of the country, thereby eliminating any potential sample selection bias. Moreover, all parents are subject to the same program, presented with identical choice architectures, and provided with uniform information regarding the program.[7] The Ultra-Orthodox Jewish and the Arab populations share similar cultural gender preferences but diverge in terms of their economic incentives to invest in boys versus girls. Should we detect disparities in household savings within the program based on children's gender (and minority affiliation), we can affirm that gender bias and favoritism in savings exists in a modern economy. Furthermore, we can leverage the distinctive characteristics of the Ultra-Orthodox Jewish population to discern whether they exhibit a preference for girls or boys, thereby shedding light on whether cultural preferences (resulting in more savings for boys) or economic incentives (resulting in more savings for girls) take precedence and have a predominant effect. This case study and unique populations offer a setup that provides insights into the mechanisms underlying gender bias and the factors contributing to its persistence.

4 Data

Data for this research comes from the NII administrative data on all SECP accounts and households. The database covers all children between the ages of 0.5-15 in Israel.[8] The data set includes information on decisions made within the SECP, particularly regarding the deposit of additional funds into the account. Additionally, it comprises administrative data concerning various household characteristics and attributes. These attributes include the marital status of the child's parents (whether they are married to each other or not), the number of children in the household (we grouped households with over seven children), the age of each child, the average age of parents, the income of each parent, indicators for whether each parent attended a university or college, indicators for whether each parent receives social security income (e.g., disability and income assurance benefits), and the household's minority affiliation, primarily determined by their residential address according to the NII classification.

In our administrative NII data set, we have a total of 2,345,882 observations. This

[7]The ability to observe transfers can affect the ability of parents to transfer funds unequally (e.g. Bernheim and Severinov 2003; Lundholm and Ohlsson 2000; Stark and Zhang 2002; Stark 1998; Dunn and Phillips 1997). In the SECP, information includes an annual letter detailing the savings accounts, and authenticated users can access quarterly data online through the financial institution's website. Additionally, general program information, rather than specific account details, is available in media outlets and publications from the National Insurance Institute (NII).

[8]We examined children aged 0.5 and above, after defaults took effect, and before they reached the age of 15, at which point the child's savings horizon is relatively short.

data set includes 384,916 observations from the Ultra-Orthodox Jewish population and 537,126 observations from the Arab population. Notably, in 39% of Ultra-Orthodox Jewish children accounts, parents chose to make additional deposits into their child's account. For the Arab children, this percentage was 23%, while for the non-Orthodox Jewish accounts, it was notably higher at 62%. Summary statistics of the administrative data is presented in Table 1.

Table 1: Statistical Summary

Population and N Obs	Variable	Mean	Std Dev	Minimum	Maximum
Ultra-Orthodox Jewish 384,916	Deposit additional funds	0.39	0.49	0.00	1.00
	Age of child	7.02	4.11	0.51	15.00
	Parent's married	0.98	0.14	0.00	1.00
	Parent's average age	36.13	7.08	18.27	71.01
	Father academic attainment	0.06	0.24	0.00	1.00
	Mother academic attainment	0.62	0.49	0.00	1.00
	Mother in top 20% of woman earnings	0.11	0.31	0.00	1.00
	Mother in low 20% of woman earnings	0.19	0.39	0.00	1.00
	Father in top 20% of woman earnings	0.03	0.16	0.00	1.00
	Mother in low 20% of woman earnings	0.55	0.50	0.00	1.00
	Mother has income from social security	0.11	0.31	0.00	1.00
	Father has income from social security	0.07	0.26	0.00	1.00
	Number of children in household	2.78	1.68	1.00	7.00
Arab 537,126	Deposit additional funds	0.23	0.42	0.00	1.00
	Age of child	7.62	4.18	0.51	15.00
	Parent's married	0.91	0.28	0.00	1.00
	Parent's average age	37.84	6.97	16.77	90.75
	Father academic attainment	0.16	0.37	0.00	1.00
	Mother academic attainment	0.24	0.42	0.00	1.00
	Mother in top 20% of woman earnings	0.06	0.23	0.00	1.00
	Mother in low 20% of woman earnings	0.47	0.50	0.00	1.00
	Father in top 20% of woman earnings	0.07	0.25	0.00	1.00
	Mother in low 20% of woman earnings	0.19	0.39	0.00	1.00
	Mother has income from social security	0.12	0.32	0.00	1.00
	Father has income from social security	0.19	0.39	0.00	1.00
	Number of children in household	1.96	1.14	1.00	7.00
Non-Ultra-Orthodox Jewish 1,423,840	Deposit additional funds	0.62	0.48	0.00	1.00
	Age of child	7.53	4.12	0.51	15.00
	Parent's married	0.87	0.34	0.00	1.00
	Parent's average age	40.26	6.43	17.80	84.75
	Father academic attainment	0.48	0.50	0.00	1.00
	Mother academic attainment	0.59	0.49	0.00	1.00
	Mother in top 20% of woman earnings	0.28	0.45	0.00	1.00
	Mother in low 20% of woman earnings	0.10	0.30	0.00	1.00
	Father in top 20% of woman earnings	0.30	0.46	0.00	1.00
	Mother in low 20% of woman earnings	0.11	0.31	0.00	1.00
	Mother has income from social security	0.12	0.32	0.00	1.00
	Father has income from social security	0.11	0.31	0.00	1.00
	Number of children in household	1.83	1.04	1.00	7.00

Source: NII administrative data.

4.1 Empirical investigation

We estimate the following linear model for all population groups in Israel: Ultra-Orthodox Jewish population, Arab population, and non-ultra-Orthodox Jewish population. For each child i we estimate (Y_i), dummy value of 1 or 0 for depositing an additional NIS 50 per month to the child's account.

$$Y_i = \alpha_0 + \beta_1 * I_i + \beta_2 * X_i + _i \tag{1}$$

Where I_i is the indicator if the child is female (0 is male). And we denote by X_i household's characteristics as stated above.

In our primary specification, we utilize a logit model exclusively for the first child in the family providing average marginal effects, addressing the interdependence of observations within the same household and random assignment, as the gender of the first child in the family is random.[9] To explore potential variations in parental interactions with the program across distinct populations, we conduct separate regressions for the Ultra-Orthodox Jewish, Arab, and non-Ultra-Orthodox Jewish populations. This approach enables us to discern if there are nuanced differences in program dynamics among these demographic groups, particularly concerning the gender of the children.[10]

As part of our robustness checks, we extend our analysis by running regressions on the second child within the family. Additionally, we explore alternative specifications using a linear model instead of a logit model. Notably, these robustness checks yield consistent outcomes, reinforcing the reliability of our findings. We then continue to examine parents' choices within the same household, conducting a logit regression on families with both girls and boys. This analysis helps us provide further evidence that parents intentionally make non-equitable choices when it comes to saving and investing in their children, favoring specific children based on their gender. In this analysis, we use family fixed effects to account for the interdependence of observations within the same household. In additional analysis, we employed cluster-robust standard errors by family, and the outcomes remained unchanged (not presented).

In additional specifications, we offer further insights into the mechanisms influencing parents' disparate investment in their children based on gender. We specifically address the following mechanisms: marriage market considerations and mother's bargaining power as well as investigate survey data on parents' expectations regarding the funds.

[9] As this is a logit regression, pseudo R^2 is calculated using: 1-exp2[logL(M)-logL(0)]/n. Where logL(M) and logL(0) are the maximized log likelihood for the fitted model and the "null" model containing only an intercept term, and n is the sample size.

[10] It should be noted that the outcome can be viewed from both an extensive and intensive perspective. On the extensive margin, the investigation explores whether parents are willing to invest additional funds out of pocket for girls compared to boys. Conversely, on the intensive margin, it examines whether parents save additional funds for girls compared to boys.

5 Main results

The regression results presented in Table 2 show that Ultra-Orthodox Jewish parents are statistically significantly more likely to deposit additional funds for their girls, while Arab parents are less likely to deposit additional funds for girls. For non-Ultra-Orthodox Jewish population, there is no significant effect by gender of child. All outcomes are after controlling for an array of household and child attributes. Given that the regression is a logit regression, Table 3 presents the odds ratios of the outcomes, revealing not only statistical significance but also economic significance. Specifically, the results show a 16% higher rate of savings for girls in the Ultra-Orthodox population and a 18% decline in savings for girls in the Arab population. For non-Ultra-Orthodox Jewish populations, the effect is neither statistically or economically significant.

It should be noted that when investigating overall savings differences between populations using a regression covering the entire sample, which included fixed effects for minority populations and an interaction term between minority populations and a dummy variable indicating whether the child is female, along with all specified control variables, we find that overall minority populations are less likely to deposit additional funds for children (regression not presented). Among the Ultra-Orthodox Jewish population, parents save for girls at a rate of 64% as much as non-Ultra-Orthodox Jewish parents, and at a rate of 60% for boys. In the Arab population, parents save for girls at a rate of 31% compared to the non-Ultra-Orthodox Jewish population, and at a rate of 36% for boys. Despite these minority populations showing relatively higher savings for girls or boys, they still exhibit an overall lower likelihood of making additional deposits for any of their children compared to the non-Ultra-Orthodox Jewish population.

Table 2: Depositing additional funds for child in SECP by populations

	Logit average marginal effects		
	Ultra-Orthodox Jewish	Arab	Other Jewish
Girl	0.03***	-0.02***	0.00
	(0.01)	(0.00)	(0.00)
Controls	YES	YES	YES
Observations	110,302	239,067	693,615
Pseudo R^2	0.08	0.10	0.10

Notes: Data on first born child. Average marginal effects are reported with standard errors in parentheses. The dependent variable is an indicator for depositing additional funds for a child in the SECP. The primary explanatory variable is an indicator if the child is female. Other controls, not presented here, include indicators for parents being married, the age of the child, indicators for the father's and mother's academic attainment, father's and mother's income, indicators if the father and mother receive an allowance from social security, and the parent's average age. The first column displays outcomes for the Ultra-Orthodox Jewish population, the second column for the Arab population, and the third column for the non-Ultra-Orthodox Jewish population. $^{***}p < 0.01$

Table 3: Odds-ratio for regression in Table 2

	Odds Ratio	**95% Lower**	**95% Upper**	**Average %**	**Change in %**
Ultra-Orthodox Jewish	1.068	1.042	1.094	39%	16%
Arab	0.954	0.936	0.972	25%	8%
Non-Orthodox Jewish	1.008	0.998	1.018	64%	1%

Note: Table shows odds-ratio outcomes for savings for girls versus boys disparities between girls and boys, from regression in Table 2, across the three distinct populations. "Average %" column presents average deposit rate for first child within each population. "Change in %" column quantifies the percentage shift in savings for girls relative to boys calculated dividing the odds-ratio difference from 1 from the average deposit rate for each population.

5.1 Family with both boys and girls

When looking into the differences in savings based on the child's gender within families that have both girls and boys, we see similar results (Table 4). This suggests that the favoritism of girls or boys is happening within the same household and not coming from selection. Even when we include the percentage of girls among all children in the family in the regression, the results stay consistent.[11]

Table 4: Depositing additional funds for child in SECP by populations, only for families that have both girls and boys

	Logit average marginal effects		
	Ultra-Orthodox Jewish	Arab	Other Jewish
Girl	0.02***	-0.02***	0.00
	(0.00)	(0.00)	(0.00)
Controls	YES	YES	YES
Observations	384,906	384,906	1,423,411
Pseudo R^2	0.06	0.07	0.08

Notes: Data only on families with both girls and boys using family fixed effects to account for the interdependence of observations within the same household. Average marginal effects are reported with standard errors in parentheses. The dependent variable is an indicator for depositing additional funds for a child in the SECP. The primary explanatory variable is an indicator if the child is female. Other controls, not presented here, include indicators for parents being married, the age of the child, indicators for the father's and mother's academic attainment, father's and mother's income, indicators if the father and mother receive an allowance from social security, and the parent's average age. The first column displays outcomes for the Ultra-Orthodox Jewish population, the second column for the Arab population, and the third column for the non-Ultra-Orthodox Jewish population. $^{***}p < 0.01$

The results above highlight variations in parental savings for girls and boys across different groups in the population. The fact that parents' favoritism arises even in families

[11]The 'Percent of girls' variable is calculated based on all children aged 0.5-15. Regression results show that both the 'Girl' variable and the 'Percent of girls' variable have the same direction: positive for the Ultra-Orthodox Jewish population and negative for the Arab population. The impact of the child's gender is shared between the 'Girl' dummy variable and the 'Percent of girls' variable; each variable is less significant on its own.

with both girls and boys demonstrates the robustness of this outcome. In the following section, we will delve into the mechanisms that contribute to these observed differences.

6 Mechanisms

6.1 Parent's expectations and additional considerations

So far, we have obtained evidence indicating that Ultra-Orthodox Jewish parents allocate higher savings for girls, while Arab parents exhibit a preference for boys. This initial evidence suggests that this outcome is influenced by parental expectations regarding future earning potential. We claim that this distinction arises from differential monetary expectations concerning daughters and sons within the respective populations and the need to invest in education.

However, as discussed in the literature mentioned earlier and upon exploring the attributes of the populations, there may be additional motivations affecting parents' willingness to invest in their children. Specifically, the marriage market could be influencing outcomes directly (and not only through human capital), along with factors such as the proximity of children to parents and expectations of support in old age. Other factors, such as mothers' bargaining power, may also influence outcomes, and we address this question through additional data investigations.

To address alternative explanations, we present evidence from additional survey data collected at the inception of the SECP program, as well as further investigations using administrative data.

6.1.1 Survey data

Between July and December of 2017, following the initial implementation of the SECP, NII conducted a telephone survey targeting a random sample of parents with children eligible for the SECP. The survey sample was used based on a stratified random sampling approach and aimed to oversample minority groups, ensuring adequate representation of Arab and Ultra-Orthodox populations for focused investigations. Out of approximately 10,000 families invited to participate, 4,838 parents completed the survey, representing 11,215 children and yielding a response rate of nearly 50%. Table 5 presents statistics on parents' expectations regarding how children will use funds in the future, categorized by minority affiliation and the gender of the child.

As parents were asked about expectations for all their children, and given that parents may have both boys and girls, examining expectations for both genders across all families yields noisy averages. Therefore, we present parents' expectations for boys and girls only within families that have either all girls or all boys.

The results in Table 5 highlight that the primary expectation among parents regarding how children will use the SECP funds is for academic education and vocational training (most answers focus on academic education and not vocational training). Within the Ultra-Orthodox Jewish population, expectations are more diversified, with a significant emphasis on both weddings[12] and education. However, the survey clearly indicates that Ultra-Orthodox parents intend to allocate savings for girls towards academic and vocational training (43.3% for girls compared to only 11.1% for boys), while savings for boys are intended for wedding-related expenses (44.4% of parents anticipate savings for boys to be used for wedding expenditures versus only 16.7% for girls). In the Arab population, parents' expectations for both girls and boys lean towards education; however, they are more inclined to anticipate savings for boys being used for educational purposes (89% of parents with boys expect children to utilize funds for education compared to 74.2% for parents of girls). The marriage market appears to have less influence within this population. For the non-Ultra-Orthodox Jewish population, education expectations remain significant, but differences between girls and boys are less pronounced, with parents tending to indicate that the funds will be used for whatever the child wishes to do with them. These observation further supports the notion that investment in the SECP is driven by the desire to invest in the human capital and education of future breadwinners.

In addition, the survey helps to show that other mechanism do not seem to be driving outcomes as education and marriage are the only leading expectations found in the survey. Specifically, all populations show a limited emphasis on parental support, providing further evidence that this factor is not a driving force behind the observed effects. In the sub-population of parents with either boys or girls, no parent answered that they expect the funds will be used for parental support. In the whole sample, only three parents responded that they expect funds to be used for parental support. Another potential factor influencing parental savings for children could be a reluctance to provide funds to children whom parents seek to control more tightly, in order to curb independence, potentially maintaining a more conservative environment. For example, Ultra-Orthodox Jewish parents may refrain from saving for boys as they could potentially use these funds to depart from the closed community, and similarly, Arab parents may be hesitant to save for girls. Survey results suggest that this explanation is less likely to influence outcomes. Among Ultra-Orthodox Jewish parents, there remains a relatively high percentage of parents who expect boys to have autonomy over the funds as they wish, and although this response is more common for girls, the difference between girls and boys is smaller compared to academic and vocational attainment (16.7% for boys versus 26.7% for girls). In the Arab population, parents are actually less likely to indicate that funds could be

[12]The answers to the survey regarding marriage were too general, making it difficult to distinguish between marriage and real estate concerns as they are combined for the Ultra-Orthodox Jewish community.

used at the child's discretion for boys, and the percentage of parents who provide this response for girls is also relatively high (4.9% for boys and 17.7% for girls), suggesting that this explanation is unlikely to be the primary driver of parental favoritism in investments within this population.

Table 5: Parental Expectations Regarding the Use of Child Savings Account Funds by Population and Gender

Population	**Gender**	**N**	**Academic and vocational attainment (%)**	**Wedding (%)**	**What the child wants (%)**	**Other or no answer (%)**
Ultra-Orthodox Jewish	Girl	30	43.3	16.7	26.7	13.3
	Boy	36	11.1	44.4	16.7	27.8
Arab	Girl	62	74.2	3.2	17.7	4.8
	Boy	82	89	0	4.9	6.1
Non-Ultra-Orthodox Jewish	Girl	706	54.1	1.8	28.3	15.7
	Boy	792	51.7	1.3	31.1	16

Notes: Source data is the National Insurance Institute Savings for Every Child Survey from 2017. Parents that have either only boys or only girls.

6.2 Religious scholars investigation - marriage market considerations

As previously mentioned in the setting and following the survey outcomes, the marriage market appears to be a significant concern, particularly in the Ultra-Orthodox Jewish population, where there seem to be more frictions leading to higher dowries or down payments for apartments Zupnik, 2022; Gordon, 2022; Regev and Gordon, 2022. To further explore the impact of the marriage market, we examine a subgroup within the Ultra-Orthodox Jewish population based on the administrative data and empirical investigation mentioned earlier. This additional analysis provides further evidence that the marriage market is not the primary driver of the observed outcomes.

The marriage market for men completely devoted to religious studies, known as "Avrechim," (or "Avrech") places greater emphasis on dowry and the wife's ability to support the husband (Zupnik 2022; Gordon 2022).[13] These men receive a governmental allowance to practice religious studies, typically around USD 220 or NIS 800, and are less likely to earn external income. If they do receive external income, it tends to be relatively low (Zupnik 2022; Gordon 2022). Given that these religious scholars receive an allowance from the government, information on this status is available in the NII administrative data. Hence, for the Ultra-Orthodox Jewish population we explore whether fathers who

[13]Additionally, around 50% of "Averechim" are from the Lithuanian religious segment, where the marriage market is known to be tight for women.

are religious scholars show additional investment in girls due to a tight marriage market. We utilize the specified main empirical investigation on all children and incorporate a variable indicating whether the father is a religious scholar, along with an interaction term between the father's scholar status and the child being a girl.[14] As shown in Table 6, no additional effect exists for the interaction term, and the original overall tendency to save for girls remains, providing further evidence that the marriage market is not driving the outcome of higher investment in girls.

Table 6: Depositing additional funds for child in SECP if father is a religious scholar, Ultra-Orthodox Jewish population

Logit average marginal effects	
	Ultra-Orthodox Jewish
Girl	0.024***
	(0.004)
Father religious scholar * Girl	0.003
	(0.004)
Father religious scholar	-0.11***
	(0.007)
Controls	YES
Observations	384,902
Pseudo R^2	0.05

Notes: Data on Ultra-Orthodox Jewish population. Average marginal effects are reported with standard errors in parentheses. The dependent variable is an indicator for depositing additional funds for a child in the SECP. The primary explanatory variable is an indicator if the child is female and if father is a religious scholar "Avrech". Other controls, not presented here, include indicators for parents being married, the age of the child, indicators for the father's and mother's academic attainment, mother's income, indicators if the father and mother receive an allowance from social security, and the parent's average age. $^{*}p < 0.1$ $^{**}p < 0.05^{***}p < 0.01$

6.3 Bargaining power

The literature provides evidence that households where mothers have stronger bargaining power in family decision-making due to higher income, tend to allocate more resources to girls (e.g Dizon-Ross and Jayachandran 2022; Duflo 2003; Qian 2008). This observation is linked to the notion that mothers exhibit greater altruism towards their daughters compared to fathers. In order to investigate this mechanism, we conducted our prior regressions from the main specification on all children, augmenting them with an interaction term to gauge maternal bargaining power. Initially, we introduced a variable of mother's percent of wage out of household wage (derived from dividing the mother's income from work by the sum of the father's and mother's income from work), which should directly

[14] In the presented specification, we investigate all Ultra-Orthodox Jewish children in the data in order to investigate the effect of being a scholar throughout the lifetime. Additionally in the specification bellow father's income is not controlled for, given its high correlation with being a religious scholar" However, similar outcomes are observed even when incorporating additional controls for father's income.

measuring the mother's economic influence. The outcomes, as outlined in Table 7, indicate that overall, increased maternal bargaining power, as measured by the interaction term between the mother's bargaining power variable and the child being a girl, has no additional impact on savings for girls in all populations. Additionally, the baseline effect of the girl dummy variable on it's own remains consistent across all groups. This indicates that the outcomes presented earlier in the main specification are not stemming from maternal bargaining power. It should also be noted that for the Ultra-Orthodox Jewish population, the mother's bargaining power variable has a negative effect on the tendency to deposit additional funds to the child's account. This indicates that the variable might be capturing some of the unique features of the Ultra-Orthodox Jewish population and not just the mother's bargaining power. Given that women are the main breadwinners, the mother's percent of overall household income could indicate either that mothers have higher income or that fathers are more devoted to religious studies.

Hence, to gain deeper insights into maternal influence, we modified the interaction term from the ratio of the mother's income to household income to two indicators of whether the mother or father's income falls within the top 20% of wage earners in their respective gender group. If the mother is a high wage earner, this could provide more direct evidence of the mother's bargaining power within the household. In this investigation (not presented) for the Ultra-Orthodox Jewish population, the interaction term between the mother's high wage earner variable and the dummy variable indicating if the child is a girl is also not statistically significant, and only the girl dummy variable on its own is statistically significant and similar in size to previous investigations. For the other populations, none of the effects were statistically significant, perhaps due to the fact that the child gender effect is spread between three terms. However, it should be noted that even in this specification, there is no indication of a positive effect for mother's bargaining power within the household on savings for girls.

Collectively, these findings indicate that the fundamental impact of depositing more or less funds for girls is not rooted in maternal bargaining power.

Table 7: Depositing additional funds for child in SECP by populations and mother's bargaining power in household

	Logit average marginal effects		
	Ultra-Orthodox Jewish	Arab	Other Jewish
Girl	0.014*	-0.02***	0.00
	(0.01)	(0.01)	(0.00)
Mother's Bargaining power * Girl	0.01	-0.01	-0.01
	(0.01)	(0.00)	(0.01)
Mother's Bargaining power	-0.23***	0.23***	0.29***
	(0.05)	(0.04)	(0.02)
Controls	YES	YES	YES
Observations	384,892	537,023	1,423,281
Pseudo R^2	0.07	0.10	0.08

Notes: Data only on families with both girls and boys using family fixed effects to account for the interdependence of observations within the same household. Average marginal effects are reported with standard errors in parentheses. The dependent variable is an indicator for depositing additional funds for a child in the SECP and mother's income divided by father's income. The primary explanatory variable is an indicator if the child is female. Other controls, not presented here, include indicators for parents being married, the age of the child, indicators for the father's and mother's academic attainment, father's and mother's income, indicators if the father and mother receive an allowance from social security, and the parent's average age. The first column displays outcomes for the Ultra-Orthodox Jewish population, the second column for the Arab population, and the third column for the non-Ultra-Orthodox Jewish population. $^{*}p < 0.1$ $^{**}p < 0.05^{***}p < 0.01$

7 Conclusions

This paper provides crucial evidence about the root causes of gender bias in today's economies. We use administrative data and a unique case study in Israel to examine how parents make financial decisions regarding their children's savings accounts, specifically focusing on gender differences. This setting allows us to look at a very clean and direct financial decision - parents' decision to invest additional funds in their child's account. We zero in on parents from religious/ethnic minorities, the Ultra-Orthodox Jewish and Arab populations, who share similar cultural gender biases but have different economic motivations regarding their daughters and sons' future earning potential.

Our findings show that economic factors take precedence. Ultra-Orthodox Jewish parents tend to invest more in their daughters' accounts, expecting them to become primary breadwinners, while Arab parents put extra money into their sons' accounts, reflecting their expectations of higher future income for the boys. These patterns persist even in families with both boys and girls, indicating that parents are intentionally saving more for some children based on their gender.

When we dig into the underlying factors and reasons behind these decisions, more insights emerge that all point to economic incentives leading overall effect. Specifically, it appears that the main reason parents save more for children is to fund higher academic attainment and vocational training. Therefore, they are investing in the future breadwinner's human capital.

Understanding the source of gender bias can assist policymakers in targeting policies to mitigate potential disparities. As we show, parents are mainly influenced by economic incentives. This provides evidence of the importance of policy implications in the workforce and educational opportunities, including affirmative actions. Offering women better opportunities affects parental expectations and can lead to a change in parental investment in girls, resulting in even better labor market outcomes for girls. Additionally, policies promoting financial literacy and awareness can help individuals make informed decisions, thus reducing the impact of gender bias. Our observation that economic incentives and monetary returns play a more significant role provides optimism that as communities develop and economic conditions evolve, gender bias can be effectively mitigated through a combination of these policy efforts. This research agenda is also aligned with the research agenda of the 2023 Nobel laureate in economics, Claudia Goldin, and her work on the impact of future income expectations on women's participation in the labor market and education (e.g. Goldin and Katz 2015; Goldin 2014; Goldin et al. 2006; Goldin 2006; Goldin and Katz 2002; Goldin 1990; **?**).

The importance of researching savings for children has additional implications for economic development and gender inequality. Providing access to funds in young adulthood can have large direct economic implications throughout the life-cycle (e.g. Zewde 2023; Brown et al. 2023; Caucutt and Lochner 2020; Stein and Yannelis 2020; Lee and Seshadri 2019; Loibl 2017). Specifically, child saving accounts (or similar child savings facilities such as baby bonds and 529 education savings plans) have been found to have a positive effect on financial behaviour and savings in adulthood (e.g. Li et al. 2023; Zewde 2020; Huang et al. 2021; Friedline et al. 2014; Friedline 2014; Ashby et al. 2011). Child saving accounts have also been found to positively impact college attainment (e.g. Blumenthal and Shanks 2019; Elliott et al. 2011). The effect on college attainment was found to be larger for low-income minorities and evidence shows that even small amounts of savings can have a strong effect (e.g. Huang et al. 2021; Elliott et al. 2013). Additionally, there is an indirect affect from accessing financial institutions and savings accounts in a young age from financial inclusion, financial literacy and financial behavior (Huang et al. 2021,Brown et al. 2019, Demirgüç-Kunt and Singer 2017, Grohmann et al. 2018, Sherraden 1991). Given that institutional savings programs often aim to reduce inequality and grant financial access to young adults from lower socioeconomic backgrounds, the potential influence of gender bias on savings amounts can exacerbate long-term gender disparities.

It is crucial for policymakers to identify populations with pronounced gender bias and address the perception that investing in girls is less profitable. By fostering a supportive environment and offering targeted incentives to specific demographics, policymakers can motivate families and communities to invest in girls and acknowledge the long-term economic advantages of such investments

At this point , it is important to highlight that the findings of this research align with prior studies (e.g. Haran Rosen and Sade 2022a), indicating that minority populations, irrespective of gender, exhibit an overall reduced likelihood to deposit additional funds for their children. An important discrepancy for policymakers to consider and account for.

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