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 taken into account 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.

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. This outcome persists across various robust specifications, including looking only at households that have both girls and boys. This outcome proves that gender bias is reversed when economically worthwhile. 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) does not have an additional effect and is not the primary determinant of the main outcome. Furthermore, our findings reveal that when mothers are high earn-

ers in the Ultra-Orthodox Jewish population, investment bias towards girls is even more pronounced but there is no such effect for other populations. This additional evidence strengthens the argument that parents' decisions regarding savings are significantly influenced by considerations related to their children's future economic prospects. 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.

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. 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, 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

¹This 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.

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' investment in 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 investments in them during their childhood.

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.²

This paper aims to provide additional evidence on the source of gender bias using a unique case study and setup that allows to entangle economic incentives and cultural

²An 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 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.

preferences. The unique setup will help determine whether, when parents encounter a cultural bias in one direction and economic incentives in another, which factor prevails over the other.

3 Setup

3.1 SECP

In 2017, the Israeli National Insurance Institute (Henceforward, NII) introduced the Savings for Every Child Program (Henceforward, 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 (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 \approx US\$3,000 to \approx US\$20,000 depending on parents choices (additional deposit and saving track) (Pinto and Gottlieb 2019). A year of college in Israel is \approx US\$2,500, meaning estimated funds can cover costs of 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. 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). Both populations face high poverty rates. 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, underscoring 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 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 for women and men stands at 29% and 19%, respectively. In the non-Ultra-Orthodox Jewish population there are higher academic attainment figures, with 37% for women and 43% for men.

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

³In Israel, you cannot use an IVF procedure to choose the sex of the child unless you have four children of the same gender.

⁴Forty-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.

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).⁵ 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 incentives to support breadwinners. These incentives stem from factors such as considerations related to the marriage market or the potential support that children can provide to their parents as they age.

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).

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.

⁵Cultural 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.

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 SECP, along with the unique features and within Israel's minority populations, presents a distinctive opportunity to investigate gender bias and favoritism concerning children. The framework employed in this paper offers several notable advantages. It relies on random selection if boy or girl and a clean financial setting of parents monetary investments in children and comprehensive administrative data that encompasses the entire child population of the country, 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.⁶ 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.⁷ The data set includes information on decisions made within the SECP, particularly regarding

⁶The 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).

⁷We 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.

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 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.

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 selection, as the gender of the first child in the family is random. ⁸ 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.

As part of our robustness checks, we extend our analysis by running regressions on

 $^{^8}$ As this is a logit regression, pseudo R^2 is calculated using: $1-\exp 2[\log L(M)-\log L(0)]/n$. Where $\log L(M)$ and $\log L(0)$ are the maximized log likelihood for the fitted model and the "null" model containing only an intercept term, and n is the sample size.

Table 1: Statistical Summary

Population and N Obs	Variable	Mean	Std Dev	Minimum	Maximum
Ultra-Orthodox Jew 384,916	ish 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 Jew 1,423,840	ish 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.

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 ad additional analysis we used family fixed effects and outcomes remain the same (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: mother's bargaining power and other considerations affecting parents expectations, including motives stemming from the marriage market. These investigations will include additional analysis of both administrative data and survey data, as explained below.

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 population 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, using 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, girls save at a rate of 64% as much as the non-Ultra-Orthodox Jewish population, while boys save at a rate of 60%. In the Arab population, girls save at a rate of 31% compared to the non-Ultra-Orthodox Jewish population, and boys save at a rate of 36%. Despite these minority populations showing relatively higher savings for girls and 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.⁹

The results above highlight variations in parental savings for girls and boys across different minority groups. In the following section, we will delve into the mechanisms that contribute to these observed differences.

⁹The '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. For the Ultra-Orthodox population, both the 'Girl' variable and the 'Percent of girls' variable are statistically significant.

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

6 Mechanisms

6.1 Bargaining power

The literature provides evidence that households were 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 primary regressions, augmenting them with an interaction term to gauge maternal bargaining power. Initially, we introduced a variable derived from dividing the mother's income by the father's, directly measuring the mother's economic influence. The outcomes, outlined in Table 5, indicate that, overall, increased maternal bargaining power has no additional impact on savings for girls in both the Jewish populations. Even more contradictory to the thesis that mother's bargaining power should lead to higher savings for girls, there is a statistically significant negative effect on savings for girls in the Arab population when mother's have more bargaining power. It's worth highlighting that the baseline effect of the child's gender remains consistent across all groups, suggesting that the outcomes presented earlier in the main specification are not influenced by maternal bargaining power; the effect persists regardless.

To gain deeper insights into maternal influence, we modified the interaction term from the ratio of mother's income to father's income to two indicators of whether the mother or father income falls within the top 20% of wage earners in their respective gender group. In this regression, presented in Table 6, we observe a positive statistically

significant economic effect for mothers being high earners on contributing additional funds for girls, but exclusively in the Ultra-Orthodox Jewish population. For this population, the underlying effect of gender remains consistent, and the impact of mothers having high wages adds an extra layer. For the Arab population and the non-Ultra-Orthodox population, the effects of child gender and the interaction term of the mother's being a high earner and the child being a girl is not statistically significant.

Collectively, these findings indicate that the fundamental impact of depositing more or less funds for girls is not rooted in maternal bargaining power. However, for the Ultra-Orthodox population, if mothers earn more, there is additional savings for daughters, suggesting that monetary incentives and the potential for higher wages for girls may be driving the higher deposit rate for girls.

Table 5: 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	0.022***	-0.02***	0.00
	(0.00)	(0.00)	(0.00)
Mother's Bargaining power * Girl	0.00	-0.00*	0.00
	(0.00)	(0.00)	(0.00)
Mother's Bargaining power	0.00***	0.00**	0.00***
	(0.00)	(0.00)	(0.00)
Controls	YES	YES	YES
Observations	384,892	537,023	1,423,281
Pseudo R ²	0.05	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 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

6.2 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. This distinction arises from differential monetary expectations concerning daughters and sons within the respective populations. Furthermore, high-wage mothers in the Ultra-Orthodox community display an increased likelihood of depositing

Table 6: Depositing additional funds for child in SECP by populations and parents being high earners

	Logit	average marginal e	effects
	Ultra-Orthodox Jewish	Arab	Other Jewish
Girl	0.04*	-0.01	0.00
	(0.02)	(0.01)	(0.00)
Mother high wage earner * Girl	0.03**	0.01	0.00
	(0.01)	(0.01)	(0.00)
Father high wage earner * Girl	0.01	0.00**	0.00***
	(0.02)	(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 and an indicator variable if mothers or father's income is in the top 20% of earners by gender. 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

additional savings for girls, providing additional evidence that expectations regarding future income of daughters is driving the effect.

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.

To address alternative explanations, we present evidence from additional survey data collected at the beginning of the SECP program. This evidence aims to demonstrate parents' anticipation of the use of funds by their children, indicating that the need to provide for higher human capital is a driving factor in the observed outcomes.

As previously mentioned, 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.

6.2.1 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 7 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 queried about expectations for all their children, and considering that parents may have both boys and girls, expectations for both genders are noisy averages. However, they still offer insights into parents' tendencies regarding expectations for both boys and girls.

The results in Table 7 reveal that within the Ultra-Orthodox Jewish population, expectations are more diversified, with a significant emphasis on both weddings (housing)¹⁰ and education. Delving deeper into these expectations based on the gender of the child unveils a nuanced pattern. Ultra-Orthodox Jewish parents exhibit a stronger inclination to associate girls with expectations related to educational purposes, while expectations for boys are more geared towards weddings. Conversely, in the Arab population, there is a prevalent overall expectation that funds from the SECP will be used for educational purposes, but with a higher inclination towards boys. This observation adds further support to the notion that the investment in the SECP is driven by the desire to invest in the human capital 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. Moreover, not only are the effects small, but they also appear to be in the opposite direction: Ultra-Orthodox Jewish parents are more likely to expect support from boys, while Arab parents anticipate support from girls.

6.2.2 Subgroup of Ultra-Orthodox Jewish population investigation

Although there is survey evidence suggesting that Ultra-Orthodox Jewish parents invest more in girls due to the investment in the human capital of future breadwinners, we conducted a deeper examination of marriage motivation using attributes of a specific subgroup within the Ultra-Orthodox Jewish population. The marriage market for men

¹⁰The answers to the survey were too general and do not allow to differentiate between marriage and real-estate concerns as these two are combined for the Ultra-Orthodox Jewish community.

Table 7: Parental Expectations Regarding the Use of Child Savings Account Funds by Population and Gender

Population	Gender	Higher Education (%)	Wedding (%)	Support parents (%)
Ultra-Orthodox Jewish	Girl	19.6	28.7	0.0
	Boy	10.2	37.7	0.4
Arab	Girl	75.2	0.9	0.1
	Boy	82.6	0.5	0.0
Non-Ultra-Orthodox Jewish	Girl	53.2	2.5	0.0
	Boy	49.8	2.9	0.0

Notes: Source data is the National Insurance Institute Savings for Every Child Survey from 2017.

completely devoted to religious studies, known as "Avrechim," places greater emphasis on dowry and the wife's ability to support the husband (Zupnik 2022; Gordon 2022).¹¹ It is interesting to explore whether fathers who are "Avrechim" show additional investment in girls due to a tight marriage market. As shown in Table 8, no such additional effect exists, providing further evidence that the marriage market is not driving the outcome of higher investment in girls.

Table 8: Depositing additional funds for child in SECP if father is a religious scholar, only Ultra-Orthodox Jewish population

Logit average marginal effects	
	Ultra-Orthodox Jewish
Girl	0.03***
	(0.01)
Father religious scholar * Girl	0.01
	(0.01)
Father religious scholar	-0.11***
	(0.01)
Controls	YES
Observations	110,302
Pseudo R ²	0.04

Notes: Data on first born child in 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, 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

 $^{^{11}\}mathrm{Additionally,}$ around 50% of "Averechim" are from the Lithuanian religious segment, where the marriage market is known to be tight for women.

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.

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. 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 fi-

nancial 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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