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Abstract

Women's reproductive rights are intensely debated, with abortion laws in the U.S. constantly changing. However, the long-term economic consequences of abortion remain largely unknown due to a lack of robust research in this area. Drawing on lifespan career theory, we theorize that pregnancy during the early career period represents a pivotal inflection point. It initiates divergent reproductive pathways with lasting, path-dependent effects on women's economic trajectories. We conceptualize abortion as a distinct and constrained early-career event that may be associated with career development in ways that differ meaningfully from both parenthood and non-pregnancy. Using national longitudinal data from 6,218 participants (1979–2020), we examine how having an abortion, compared to becoming a parent or not experiencing pregnancy at all, is related to women's long-term economic trajectories. Results show that women who had an abortion, and those who did not become pregnant, earned significantly more over a 30-year period than those who became mothers, by an estimated $398,000 and $448,000, respectively (equivalent to $495,000 and $556,000 in 2025 dollars). These findings extend lifespan career theory by conceptualizing reproductive decisions during one's early career as critical but understudied career-defining events that are associated with women's economic mobility. The results also suggest several potential policy implications: protecting access to contraception and abortion, and providing mothers with structural family support mechanisms such a job-protected paid parental leave and subsidized childcare, may help women achieve sustained economic stability and career advancement.

Keywords: Abortion; Lifespan Career Theory; Motherhood Penalty; Early Career Professional; Pregnancy

Economic Trajectories of Women: The Relationship between Abortion and Women's Salary Growth

> *"There is no adequate credible evidence that women have enjoyed greater economic and social opportunities because of the availability of abortion."*
>
> *Collett, Alvaré, & Bachiochi, 2021, in Dobbs v Jackson*

Theories of career development across the lifespan identify the early career phase (between approximately 18 and 29; Koelet et al., 2015) as a defining period for long-term economic and professional outcomes. During this time, individuals navigate key workplace and life decisions shaped by both individual decision-making and contextual constraints (Super, 1957, 1980; Modestino et al., 2019; Gloor et al., 2023). In the early career phase, choices involving pregnancy and motherhood have well-documented consequences for women's career trajectories (Budig & England, 2001). However, not all pregnancies result in motherhood; approximately 25% of women in the U.S. report having had an abortion at some point in their lives (Jones, 2024), the majority of whom were in their early careers (Kortsmit et al., 2023). Despite its prevalence, abortion remains overlooked in lifespan career theory, which tends to focus on motherhood as the primary reproductive event shaping women's careers (Super, 1980).

This omission matters because in the U.S. delaying childbirth has become more difficult following the 2022 Supreme Court ruling in *Dobbs v. Jackson Women's Health Organization*, which effectively overturned the right to safe and legal pregnancy termination. Beyond its legal and political dimensions, abortion likely also functions as a critical event that influences women's economic trajectories and careers (Jones, 2021). Unlike non-pregnancy, abortion involves significant cognitive and psychological demands, alongside navigation of structural barriers such as stigma, limited access to care, and unsupportive healthcare systems. These

contextual factors suggest that abortion may shape women's early career experiences in a variety of ways that differ from non-pregnancy and motherhood. The present research explores how one particularly critical aspect of women's work—salary—is associated with having an abortion, avoiding pregnancy altogether, or having a child during their early careers.

This study contributes to a more inclusive understanding of lifespan career development by introducing abortion as a distinct, under-theorized reproductive decision with enduring effects on women's careers (Super, 1980; Gloor et al., 2023; Zacher & Froidevaux, 2021). We argue that experiencing pregnancy as an early career professional represents a pivotal inflection point, during which choosing abortion, like choosing motherhood, sets women on distinct long-term economic pathways. Importantly, abortion is not equivalent to avoiding pregnancy altogether. While both may defer motherhood and may yield financial benefits, abortion involves responding to a pregnancy already in progress—an interruption to the expected career trajectory. Lifespan career theory frames non-normative transitions as disruptions to development that demand adaptive responses, which can shape long-term career outcomes, especially when they occur during early formative stages (Super, 1980; Zacher & Froidevaux, 2021). By investigating the link between abortion and salary growth over time, this study brings reproductive decisions into the scope of lifespan career theory.

Further, we extend the motherhood penalty literature by shifting focus from post-birth wage suppression to the moment of pregnancy as a core career inflection point, highlighting the economic implications of delaying or forgoing motherhood. Given shifting policies governing abortion access, understanding the economic consequences of this decision is essential for both theory and policy. Thus, our central research question is: How is having an abortion during early-career employment associated with women's economic trajectories over time?

Abortion Policy and Practices in the U.S.

In light of the shifting legal landscape surrounding abortion in the U.S., it is essential to contextualize our research. In the U.S., abortion access has been highly politicized over the last 170 years, with the criminalization and restriction of abortion beginning in the 1800s (Mohr, 1978). Although *Roe v. Wade* (1973) federally protected pre-viability abortion rights in all 50 states, it was met with legal challenges. Initial challenges were largely unsuccessful because the *Roe* decision required state governments to demonstrate that pre-viability abortion restrictions were put in place to protect women's health (for an overview, see Wharton et al., 2006).

However, this changed after the Supreme Court's ruling in *Planned Parenthood of Southeastern Pennsylvania v. Casey* (1992), which allowed states to restrict abortion so long as they did not impose an undue burden on women seeking abortion care. Incremental restrictions emerged, including Targeted Restrictions on Abortion Providers (TRAP laws), that imposed rules on how clinics performing abortions can operate (Bahn et al., 2020). From 2013 onwards, 'heartbeat bills,' which ban abortion after approximately six weeks, further restricted access in multiple states (Sulzberger, 2013). These incremental constraints culminated in *Dobbs v. Jackson Women's Health Organization* (2022), which overturned *Roe* and enabled states to set their abortion policies (Berg & Woods, 2023).

Post-*Dobbs*, policy polarization emerged: some states enacted near-total bans, while others expanded access and enshrined abortion rights in law (Sherman & Witherspoon, 2024). In 2025, abortion access in the U.S. is fragmented with profound implications for women's career trajectories, wages, and economic mobility (Amnesty International, 2024; Edwards et al., 2024). For example, women living in states with TRAP laws are less likely than those in other states to move between occupations and to transition into higher-paying occupations (Bahn et al., 2020).

Despite these consequences, reproductive decision-making remains largely absent from theory on women's careers. This omission leaves both scholars and policymakers without empirical insight into how reproductive events shape women's career outcomes.

Reproductive Decisions and Careers Across the Lifespan

The early career phase is a critical period in a professional's life (Gloor et al., 2023) because those in early adulthood undergo significant role transitions when entering the labor market and establishing a meaningful, promising career (Akkermans et al., 2024; Modestino et al., 2019; Super, 1980). Lifespan theories of career development highlight that the early adult years, often referred to as the *novice phase* (Modestino et al., 2019), are particularly important as early career professionals are faced with a "decision tree portraying many decision points" (Super, 1980, p.283; Koelet et al., 2015). This period is pivotal for human capital accumulation, as individuals engage in education, skill development, and workforce participation that sets the foundation for their long-term economic trajectories (Adda & Dustmann, 2023; Blackburn et al., 1993). However, early career professionals must also navigate major life transitions beyond work, with career building and family formation often coinciding and interacting (Grandey et al., 2020; Koelet et al., 2015; Modestino et al., 2019).

In lifespan career theory, careers are viewed as a sequence of interconnected episodes shaped by individual agency and contextual factors across time (Super, 1980; Zacher & Froidevaux, 2021). There is a wide range of important career outcomes to consider, such as job attitudes, turnover, and subjective well-being (Akkermans & Kubasch, 2017; Zacher & Froidevaux, 2021). However, when considering how early reproductive decisions shape career development across the life course, career outcomes such as wage growth are particularly important. This is because salary provides an objective, cumulative, and externally validated

indicator of career progression (Ng et al., 2005). Unlike attitudinal or perceptual outcomes, which may reflect temporary changes in work that may not have enduring consequences, wage growth captures the enduring consequences of path-dependent processes (Verbruggen et al., 2015; Weisshaar, 2018).

This is important as early career choices shape long-term trajectories through path dependency, whereby initial steps create lasting advantages or constraints (Verbruggen et al., 2015; Weisshaar, 2018). For example, promotions early in one's career can have longstanding positive effects on later career success (Rosenbaum, 1979; Stumpf & Tymon, 2012), and those who start at higher wages experience faster wage growth over time (Abraham et al., 2024). Conversely, early career interruptions, including those driven by caregiving responsibilities, limit skill accumulation, reduce earning potential, constrain wage growth, and create economic disadvantages that persist across the lifespan (Foster, 2021; Koelet et al., 2015). Hence, an individual's decisions in response to critical early career events determine their trajectory: advancing upward, remaining stable, or experiencing long-term economic disadvantage (Verbruggen et al., 2015).

Compared to later career phases, such as the *maintenance phase* (years 45 to 65; Super, 1980), when careers typically stabilize and follow more predictable patterns, the early career phase is characterized by transitions and critical events (Gloor et al., 2023; Super, 1980). Research suggests that these critical events act as inflection points—key moments when individuals' career trajectories may diverge in different directions—with path-dependent consequences that shape their long-term economic mobility (Sexton et al., 2014; Verbruggen et al., 2015). While many critical events, such as pursuing graduate education or receiving a promotion, provide clear opportunities for career advancement (Seibert et al., 2013), others

introduce structural constraints that require individuals to navigate complex decisions. Pregnancy represents one such pivotal inflection point for women, when decisions such as to continue to parenthood, have an abortion, or adjust work commitments create lasting career consequences, shaping wage growth (Budig & England, 2001). Drawing on lifespan career theory (Zacher & Froidevaux, 2021), we extend its application by conceptualizing abortion as a constrained reproductive event shaped by both contextual limitations (e.g., access, stigma) and aspects of personal agency, making it a distinct inflection point in career development.

While some women may avoid pregnancy altogether during their early careers, those who do become pregnant face a qualitatively different career decision. Unlike career transitions that individuals can manage solely through workplace strategies, pregnancy introduces a career-defining decision point for early career workers shaped by external constraints, such as employer expectations, financial precarity, and policy constraints (Foster, 2021). While career research acknowledges the challenge pregnancy poses for working women, illustrating the need for organizational support post-motherhood (Little & Masterson, 2023; Sumpter et al., 2024), strategies for making mothers' careers sustainable (Herman & Lewis, 2012), and the economic consequences of parental leave on early career wage growth (Kramer et al., 2023), it has largely overlooked the distinct implications of abortion. Abortion has thus remained theoretically "unspeakable" (Hazen, 2006, p. 238), "muted," and forced into "silence" (Gatenby & Humphries, 1999, p. 290).

This omission is theoretically significant. Lifespan career development theory distinguishes between normative transitions, such as job entry or promotion, and non-normative, externally constrained events (Super, 1980; Zacher & Froidevaux, 2021). Compared to progressing to motherhood, which is socially sanctioned as a normative response to pregnancy

(Chrisler et al., 2013), abortion represents a constrained, non-normative response to a pregnancy already in progress, occurring during a formative stage of career development. Unlike non-pregnancy, in which the motherhood path is not initiated, abortion requires a decision within a set of options shaped not only by personal goals but also by external constraints. This makes abortion theoretically and practically distinct from motherhood and non-pregnancy, and deserving of explicit exploration within career development. Although motherhood often entails navigating structural barriers (i.e., reduced perceptions of a mother's competence; Masser et al., 2007), it is also widely regarded as a primary expectation for women, making it a normative role transition, often called the 'motherhood-mandate' (Szekeres et al., 2023).

Abortion and Motherhood as Career Inflection Points

Women stand at a crossroads when pregnancy occurs, leading to different career and economic paths (Foster et al., 2018). Women who take the motherhood path will likely be subject to the motherhood penalty, a set of disadvantages that hinder women's earning potential, introducing career barriers that slow wage growth (Correll et al., 2007; Livingston et al., 2025). This can limit upward mobility and reinforce employer biases regarding commitment and productivity (Correll et al., 2007; Lucifora et al., 2021). Mothers' career trajectories often become nonlinear, marked by part-time work or labor force exits (Cotter et al., 2001; Hewlett & Luce, 2005). Many mothers struggle to advance beyond low-paid, flexible roles designed to accommodate caregiving responsibilities, limiting their economic opportunities (Cotter et al., 2001). Further, caregiving often leads to career off-ramps, when women leave the workforce altogether due to childbirth and caregiving responsibilities (Hewlett & Luce, 2005).

Career off-ramps disrupt skill accumulation and career continuity, resulting in long-term reductions in wage growth and career mobility (Hewlett & Luce, 2005; Costa Dias et al., 2021).

The timing of these off-ramps is critical: early career exits tend to place women into lower-wage roles upon re-entry, restricting future earning potential (Blackburn et al., 1993). The disadvantages and penalties listed above are often compounded for early career professionals, as younger mothers are disproportionately perceived as less committed to their careers (King, 2008). Even when controlling for working hours, mothers experience restricted career advancement due to employer biases and structural constraints (Budig & England, 2001).

These trends illustrate how motherhood sets a path-dependent trajectory. However, there are other paths, like terminating a pregnancy, of which the consequences are less known. Women who obtain an abortion may avoid the skill loss and wage stagnation associated with early motherhood (Foster, 2021), instead maintaining career continuity and accruing human capital during these critical early career years (Brooks & Zohar, 2021). Indeed, women who have had abortions frequently cite economic reasons for doing so, including avoiding financial insecurity and job instability (Simmons-Duffin & Horsley, 2024). These decisions are critical. Even slight delays in childbearing can have considerable economic consequences, delaying motherhood by even a single year increases lifetime earnings by approximately nine percent (Miller, 2011).

While the motherhood penalty literature has extensively examined the economic effects of parenthood, it has largely overlooked how reproductive decisions made prior to motherhood—particularly abortion—may also shape long-term career outcomes (Grandey et al., 2020; Grimshaw & Rubery, 2015). Recent research in this domain has only just begun to examine the financial implications of reproductive experiences that do not result in the traditional view of ‘motherhood’, such as infertility, miscarriage and stillbirth, suggesting that these events shape women’s economic trajectories in unique ways (Bögl et al., 2025; Ichikawa et al., 2020; Rellstab et al., 2022). For example, following a still-birth, women experienced lower earnings for at least

five years, losing on average £13,581 (approximately US $18,000) across this period (Office for National Statistics [ONS], 2025). Similarly, following a miscarriage, women's earnings were significantly lower for at least five years, with an average total loss of £4,101 (approximately US $ 5,455) relative to their pre-event earnings (ONS, 2025).

In the U.S., approximately 40% of pregnancies are unintended (Kost et al., 2023), and roughly 40% of those pregnancies end in abortion (Finer & Zolna, 2016), indicating that a substantial number of women navigate career decisions in the context of unintended pregnancies. Abortion represents a constrained response to pregnancy, and is fundamentally different from not becoming pregnant at all. The experiences of women who have an abortion are distinct from women who become mothers or who do not experience pregnancy, likely leading to psychological strain and career decision-making differences. Yet, abortion and non-pregnancy may result in similar long-term career continuity (Brooks & Zohar, 2021), workforce participation (Hewlett & Luce, 2005), opportunities for human capital accumulation (Koelet et al., 2015), and, ultimately, economic outcomes. These financial outcomes can be contrasted with the trajectories of women who become mothers early in their careers. Specifically, we hypothesize:

Hypothesis 1: Women who become mothers early in their career will experience slower wage growth compared to women who have had an abortion and did not have children early in their career (H1a) and women who have neither children nor abortions (H1b).

Methods

Sample

The analysis leverages data from the National Longitudinal Survey of Youth 1979 (NLSY79; U.S. Bureau of Labour Statistics, 2024), which tracks Americans born between 1957

and 1964, initially surveying 12,686 participants in 1979, with annual follow-ups from 1979 to 1994 and biennial follow-ups thereafter. At the time of the first survey, participants ranged in age from 14-22 years, and, given the timing of *Roe v. Wade* (1973), this group experienced reproductive events before major shifts restricting abortion in the 1990s and 2000s. Because the data are de-identified and publicly available, this research is not considered human subjects research and is therefore exempt from IRB oversight. We included female participants from randomly selected homes who were born between 1957 and 1964 and resided in the U.S. in 1979. In total, there were 6,218 women in the study; 5,955 responded to the 1984 interview, the analysis baseline year, decreasing to 3,320 responding to the final 2020 interview (53% of the total). To account for incomplete data, we used Full Information Maximum Likelihood (FIML) analysis, which produces the least biased results in the presence of missing data in longitudinal analysis (Newman, 2003). 134 participants (2%) had no earnings data in the analysis years (i.e., six-year increments beginning in 1984 and ending in 2020 inclusive), and 694 (11.5%) in only one of these years; these cases were excluded as there was no data on earnings growth for them. After all exclusions, 5,390 women were included in primary analyses.

Variables

Earnings

Participants indicated their total earnings from employment in the previous 12 months. To ensure consistency across the years, we adjusted these figures for inflation using the average annual consumer price index (all items, not seasonally adjusted) for each year so that all were correct in 2020 real terms (U.S. Bureau of Labor Statistics, n.d.). Annual conversion rates were calculated by dividing the 2020 CPI by the CPI in each survey year, which was multiplied by respondents' total income during the corresponding year.

Abortion vs. Parenthood Status in Early Career

Based on the 1984 survey, which was the first survey to ask about abortion, and when all respondents were between the ages of 19 and 29 (median age = 24), we separated female participants into four groups: those who had had at least one child but no abortions, those who had had at least one abortion but no children, those who had had at least one child and at least one abortion, and those who had had neither[1]. Dummy variables for these groups were created, with women who have had child(ren) but no abortion as the reference group.

Control Variables

All analyses controlled for the participant's age, race (measured as Black = 1, another race = 0), and ethnicity (measured as Hispanic = 1, non-Hispanic = 0), as these factors are related to wages (e.g., Barnum et al., 1995; Cataldi et al., 2012). Growth curve models (GCMs) predicting earnings in each year controlled for total working hours in the previous 12 months, number of children, and marital status (married or not) at the time of the survey. Again, we controlled for these factors because of their established relationship with wages, particularly for working mothers (Avellar & Smock, 2003; Budig & England, 2001). Supplementary analysis additionally controlled for years of education and age at the time of the reproductive event. Both of these factors have been shown to influence mothers' earning trajectories (Taniguchi, 1999).

Analysis

We analyzed total annual earnings reported in interviews in six-year intervals (1984-2020) to strike a balance between ensuring multiple observation time points (seven in total), while not including so many that the model became overly complex or missing data became

[1] Hypotheses about women with a history of both childbirth and abortion were not made. This group is treated separately from women with a history of either childbirth or abortion alone for greater precision in group comparisons.

problematic. We chose 1984 as the initial time point because that was the first year that the survey asked about abortions, and it allowed us to capture data from early in participants' careers, which aligns with our focus on how early career decisions and parental status may contribute to long-term economic outcomes. We analyzed Hypothesis 1 using a latent GCM, with earnings adjusted for inflation so they were all in real terms equivalent to 2020 dollars, this being the final year of data that we used. For ease of comparison we also show our main conclusions in terms of 2025 dollars. We used this model to examine two key predictions of wage differences.

First, we examined the gross wage penalty, which captures the total observed wage disparity between groups by using observed differences in control variables, such as working hours, to produce an expected level of earnings for different groups based on real differences in the data. The gross comparison captures the overall economic differences associated with motherhood, encompassing factors like reduced working hours, career off-ramps, or part-time work. Second, we examined the net wage penalty, which uses sample-wide average levels of control variables to estimate expected earnings in each group. This model provides the expected earnings for women who work the same number of hours, have the same marital status, and have the same number of children, even though, in reality, these are not equivalent in the data. By controlling for these variables, this net model helps us to isolate the extent to which wage differences are due to observable factors, such as reduced working hours for mothers, versus other economic benefits associated with having an abortion.

Transparency and Openness

We described all data exclusions and relevant measures in the NLS survey data, and we adhered to the *Journal of Applied Psychology* methodological checklist. The analysis code and

all variable names used in analyses are available in the supplementary material at https://osf.io/x692v/?view_only=c9b59cc2a9a640f1b62e599dcbfe7b52. Data is publicly available, so we do not reproduce the dataset in our repository. However, the online supplementary material provides all the necessary information to reconstruct the dataset from the NLSY website. Data were analyzed using Mplus version 8.10 (Muthén & Muthén, 1998-2017). This study's design and its analysis were not pre-registered.

Results

Table 1 shows means, standard deviations, and correlations of all variables used in the study, other than control variables, for years later than 1984. A full table including all control variables is available in the supplementary material. Figure 1 shows how earnings (adjusted for inflation) change over time for four groups: women with no abortions and no children as of 1984 (n = 2,527); women with at least one abortion and no children (n = 259); women with at least one child and no abortions (n = 2,253); and women with both children and abortions (n = 351). It can be seen that the mean earnings of women with children were lower than those without children, and these earnings increased at a higher rate for women without children in 1984.

A latent GCM modeled earnings across time and allowed us to test Hypothesis 1. The model included baseline control variables (age and race), and three more control variables at each time period: working hours in the past year, number of children, and marital status. To check the best model to use, null models (featuring intercept only, linear growth and quadratic growth), both with and without control variables, were tested, and a full table of results is given in the supplementary material. Whether with or without controls, the model including quadratic growth fit was significantly better than a model including linear growth only (for the version with control variables, $\Delta\chi^2(7) = 544.2$, $p < .001$). This matches the pattern shown in Figure 1 for

most groups; the decrease in earnings in later years may be due to fewer working hours (which can be seen in the supplementary material) but may also have been affected by the COVID-19 pandemic in 2020. Therefore, we used this quadratic model to test the hypotheses.

We tested Hypothesis 1 using three dummy variables as predictors of the intercept, linear, and quadratic growth terms in the model. Full parameters from each model are included in the supplementary material; summaries of key parameters are shown in Table 2. The mean trajectories are depicted in Figure 2, including both the gross and net models for all four groups.

To test Hypothesis 1a, we examined the "Abortion(s), no children" variable which compares this group with the "Child(ren), no abortions" group. This had significant links with both the linear term, $b = 4.28$, $p = .002$, 95% CI: (1.63, 6.94), and the quadratic term, $b = -0.55$, $p = .015$, 95% CI: (-0.99, -0.22). As demonstrated in Figure 2, the expected earnings for women who had an abortion were higher at every point, with a steeper upward trajectory until 2008, after which the expected earnings tailed off slightly for both groups. The significant prediction of the quadratic term indicates that the greater rate of earnings growth for the "Abortion(s), no children" group slows over time. However, as shown in Figure 2, their earnings remain substantially higher than for mothers with at least one child and no abortions by 1984. Therefore, H1a was supported.

Similarly, to test Hypothesis 1b, we examined the "No abortion(s) or child(ren)" variable which compared this group with the "Child(ren), no abortions" group. This had significant links with both the linear term, $b = 4.09$, $p < .001$, 95% CI: (2.64, 5.53), and the quadratic term, $b = -0.44$, $p < .001$, 95% CI: (-0.68, -0.20). Figure 2 shows the nature of this effect; the expected earnings for women with no abortions or children were higher at every point, with a similarly steeper upward trajectory for the first 24 years, but as with Hypothesis 1a, the significant

negative prediction of the quadratic term means that this initial increased difference in earnings growth does not continue to increase at the same rate. Therefore, H1b was supported.

It is also possible to estimate the total difference in earnings between the groups over a period of time by using integral calculus on the difference in trajectories to calculate the area between these curves[2]. Predicted earnings over a 30-year period (1984-2014) for each of the four groups are shown in Table 3, based on both the gross penalty model (representing the actual observed difference) and the net penalty model (assuming they have the same values of control variables, including the number of working hours and the same number of children). Although our primary focus is on long-term economic outcomes, early differences in women's earnings were already observable: women who had an abortion earned approximately $9,000 more in 1984 alone than mothers (equivalent to $11,000 in 2025 dollars), and over the subsequent six years, both the abortion and never-pregnant groups earned around $68,000 to $69,000 more than mothers (equivalent to $84,000 to $86,000 in 2025). The total expected earnings of women who had an abortion but not a child by 1984 were $398,000[3] more than women who had a child but no abortion by 1984 using the gross penalty model (equivalent to $495,000 in 2025), or $206,000 more using the net penalty model (equivalent to $256,000 in 2025). This represents an increase of 58% or 26%, respectively. Similarly, comparing the expected earnings of those who had neither a child nor an abortion by 1984, to those who had a child but no abortion, revealed a difference of $448,000 using the gross penalty model (equivalent to £556,000 in 2025), or

[2] From the parameter in Table 1, the difference in trajectories between the groups for H1a is given by the equation: Expected earnings difference = $0.81 + 4.28t - 0.55t^2$, where t is a period of 6 years. This integrates to = $0.81t + 2.14t^2 - 0.28t^3$; evaluating the difference in this integral function between $t = 5$ and $t = 0$, multiplied by 6 to convert the time scale back, gives the expected total difference in earnings in the net model. For the gross model a similar process is used but to allow for the differences in control variables a numerical approximation to integration using the trapezoidal method is used.

[3] To the nearest $1000

$239,000 using the net penalty model (equivalent to $297,000 in 2025) - an increase of 65% or 30% respectively. Thus, the penalty (beginning in 1984) for a woman having a child was substantial, even after taking differences in working hours and number of children into account.

One of the disadvantages of the data is that there is no optimal way of controlling for the extent of education early in life: for those who had a pregnancy event (whether resulting in a child or an abortion) the amount of education can be measured at that event, but for those who did not, there is no clear equivalent stage at which to measure education. Therefore, we conducted a supplementary analysis to compare three groups: only those women who had a pregnancy event by 1984 (n = 2,842), including those who had a child first (n = 2,395), and those who had an abortion first (n = 447). This comparison excluded some women for whom the dates of their first child or abortion were not available. Education level was abstracted from variables indicating the highest grade of school completed by respondents as of each survey year, with responses ranging from 0 (no formal schooling) to 20 (eight or more years of college).

An equivalent GCM was fitted, and a summary of key parameters is shown in Table 4. Educational level was a significant predictor of all three growth terms, and the child first dummy variable was also significantly linked to both the linear term, b = -3.16, p < .001, 95% CI: (-5.32, -0.99), and the quadratic term, b = 0.37, p = .040, 95% CI: (0.02, 0.72). A similar analysis of expected earnings over a 30-year period revealed an expected advantage for women having an abortion first of $148,000 using the gross penalty model (equivalent to $184,000 in 2025) or $263,000 using the net penalty model (equivalent to $327,000 in 2025) – an increase of 40% or 22%, respectively. Therefore, even controlling for education level at the time of the pregnancy event, there was a substantial penalty in expected earnings for having a child early in the career

compared with having an abortion.

Discussion

The present research provides a longitudinal assessment of how reproductive decisions in the early career phase are associated with women's long-term economic trajectories. Women who avoided early motherhood, either through abortion or by not becoming pregnant, earned significantly more over their careers than early-career mothers, with gains of $206,000–$398,000 and $239,000–$447,000, respectively, even after adjusting for working hours. This work advances (a) lifespan career theory and (b) understanding of motherhood penalties by establishing abortion as a necessary consideration within these domains (Super, 1980; Zacher & Froidevaux, 2021). Specifically, we reframe pregnancy as a critical career event that does not always lead to motherhood, recognizing abortion as a distinct pathway shaped by legal restrictions, economic precarity, and workplace policies that influence women's economic trajectories across their lives.

Career research has examined how structural factors such as organizational policies (Bagdadli & Gianecchini, 2019), social capital (Seibert et al., 2001), and career shocks (Seibert et al., 2013), influence professional trajectories. Yet, relatively less attention has been paid to how reproductive decision-making is related to women's career pathways. Super's (1980) seminal lifespan career theory emphasizes that early career decisions establish path-dependent trajectories, but the implicit assumption that pregnancy results in a role transition to 'mother' has resulted in an incomplete conceptualization of how abortions shape women's careers (Arena et al., 2022). Researchers acknowledge that early career professionals must navigate personal and professional transitions simultaneously (Gloor et al., 2023; Koelet et al., 2015), but research has primarily focused on the impact of motherhood. For many women, the inflection point of

pregnancy occurs during the period when foundational career decisions are made, such as entering stable employment, selecting occupational pathways, or completing education (Adda & Dustmann, 2023; Foster, 2021). Navigating a pregnancy, including the decision to terminate, may impact these early career processes, shaping initial role entry, changing the timing of career advancement, or limiting opportunities for skill accumulation. Recognizing abortion as a response to pregnancy, not equivalent to avoiding pregnancy, clarifies its status as a career-structuring event that warrants explicit theorizing. Future research should therefore explore how constrained reproductive decisions impact early-stage career formation as well as long-term career outcomes. For example, large-scale longitudinal panel datasets could be used to examine how current state-level variation in abortion access shapes women's entry into employment and subsequent career advancement.

It is important to acknowledge that cumulative earnings differences are slightly higher for women who were never pregnant compared to those who had an abortion (by $33,000 to $49,000; equivalent to $41,000 to $59,000 in 2025 dollars), although this difference was not statistically significant. This suggests that both groups were similarly able to avoid the long-term wage penalties associated with early motherhood. However, our dataset cannot capture the theoretical distinctions between abortion and non-pregnancy, such as stigma, distress and external barriers surrounding abortion. These negative experiences may be counterbalanced by the benefits of avoiding early motherhood, resulting in similar long-term wage outcomes, despite theoretical distinctions and differences in lived experiences between the two groups.

Furthermore, demographic differences between the two groups may help explain the small difference observed: women who never became pregnant tended to have higher educational attainment and were less likely to be from racially minoritized backgrounds. These

factors may reflect structural advantages that reduced both the likelihood of unintended pregnancy and long-term economic precarity. Moreover, reproductive events like abortion likely shape careers in ways not visible in cumulative earnings. Disruptions to work, altered career decision-making, shifts in identity, and perceived loss of agency may distinguish the experiences of women who terminate a pregnancy from those who avoid pregnancy entirely. Future research should explore both how structural factors, such as socioeconomic background, shape reproductive outcomes and economic trajectories, and how constrained reproductive decisions affect broader career-related outcomes. For example, qualitative life-course autobiographical narrative methodologies (Hollstein, 2019) could be used to better understand how women's decision-making around abortion shapes other non-economic career outcomes such as perceptions of career agency and occupational choices. Importantly, considering the current political climate, such research should follow recommendations for qualitative work with hard-to-reach populations (Wilkerson et al., 2014), for example by using anonymous asynchronous voice-note recordings. Expanding existing career theories to include abortion and other less-researched reproductive decisions and events (i.e., infertility, miscarriage, stillbirth) will enable a more inclusive understanding of how reproductive timing and constraints are associated with changes to women's economic trajectories (Arena et al., 2022).

In addition to contributing to lifespan career theory, we extend research on the motherhood penalty by moving beyond post-birth wage suppression to examine how reproductive decisions that do not result in parenthood, specifically, abortion, are associated with long-term career outcomes. While prior research has established the wage penalties linked to motherhood due to career interruptions, caregiving responsibilities, and employer discrimination (Hewlett & Luce, 2005; Correll et al., 2007), we highlight the economic implications of forgoing

or delaying motherhood altogether. This contributes to an emerging body of research that moves beyond a binary conceptualization of motherhood by exploring how diverse reproductive experiences, including miscarriage and infertility, affect career trajectories (Bögl et al., 2025; Ichikawa et al., 2020; Rellstab et al., 2022). Our study builds on this by showing that abortion is not only a reproductive event but also a career-shaping decision that alters long-term earnings. In doing so, we broaden the motherhood penalty framework to account for the economic consequences of reproductive choices made at the moment of pregnancy, not just after childbirth.

Implications for Policy and Practice

Our findings highlight the long-term economic consequences of early-career reproductive decisions, with potential implications for both legislative and organizational policy. While we did not test policy interventions directly, our results suggest two key domains where policies could play a crucial role in protecting women's economic standing across different reproductive paths. First, policies that support women's ability to plan if and when to have children, such as ensuring access to contraception and safe abortion, may help safeguard women's economic stability by enabling continuity of employment and career development. Second, policies that support mothers' participation in the labor market or reduce financial burdens *after* childbirth—such as paid parental leave and subsidized childcare—could help to mitigate the long-term income losses associated with motherhood. Table 5 summarizes these potential policy directions, which we discuss in further detail below.

With regard to the first domain—women's ability to plan if and when to have children—we challenge the claim made by Collett et al. (2021) that the availability of abortion does not lead to greater economic opportunities for women. Rather, the data suggest that abortion may enable some young women to maintain their income trajectories (see also Brooks & Zohar, 2021;

Everett & Taylor, 2024). Hence, our findings suggest the importance of considering abortion access as one mechanism that may help safeguard women's economic standing and workforce participation. Policies may be most effective at the federal level, to ensure that all women have access. If instead, the status quo of state-by-state variation in access is maintained, then it could be helpful for organizations to provide options in terms of travel and healthcare costs.

Relatedly, reliable access to effective contraception empowers women with greater control over the timing of their first birth (or spacing of subsequent births) than would be otherwise possible without it (Murray Horwitz et al., 2019). Expanding access to long-acting reversible contraceptives (e.g., implants, intrauterine devices) is associated with declines in unintended pregnancies and abortions among young women (Peipert et al., 2012; Ricketts et al., 2014). In contexts where healthcare is employer-provided, insurance coverage of contraception may also play an important role in ensuring equitable access. As our theoretical and empirical analyses suggest, young adulthood is likely an important inflection point for career development. Greater control over reproduction may create opportunities for women to align childbearing with economic and career aspirations, potentially supporting sustained career development and earnings trajectories.

With regard to the second domain—supporting mothers' labor market continuity and reducing financial burdens after childbirth—access to job-protected paid leave may be a helpful policy instrument. Indeed, job-protected paid parental leave plays an important role in safeguarding women's incomes and earnings after birth (Nandi et al., 2018), yet only about 27% of workers currently receive paid leave from their employers (Casper et al., 2025). To prevent this benefit from being stratified by income, race, or employer generosity, federal statutory legislation (or, in its absence, expanded state-level schemes) may be necessary for guaranteeing

universal coverage. Furthermore, organizations may also play a role by introducing or extending parental leave policies. Employers can extend beyond statutory requirements by offering more generous paid parental leave, which may help retain and attract employees, especially in regions without statutory paid leave (Davison & Blackburn, 2023). Governments and organizations could also encourage shared parental leave, such as non-transferable "use-it-or-lose-it" entitlements for partners. Such policies, proven successful in Scandinavia, help redistribute caregiving more equally and reduce the disproportional burden placed on mothers (Brandth & Kvande, 2020). The impact of job-protected paid parental leave may extend beyond immediate, direct effects on income: illustrative evidence from California shows that the introduction of paid family leave increases women's labour force participation, with sustained effects lasting up to nine years (Jones & Wilcher, 2024).

In addition, to further support mother's labor force engagement and defray the costs of motherhood, federal and state governments could invest in publicly funded childcare. Government funded early childcare (0-3 years old) is positively associated with mother's labor market participation, specifically benefiting low-educated mothers the most (Schere & Pavolini, 2023; Morrissey, 2017). While the evidence in support of organizational childcare provisions is mixed (e.g., Casper et al., 2025), organizational initiatives like on-site childcare or childcare subsidies can still play an important role in supporting parents in lieu of current federal policies in this domain (International Finance Corporation, 2017).

Limitations and Future Directions

This study explores how reproductive decisions are associated with women's long-term economic outcomes, though several limitations should be noted. First, self-reports of abortion may be affected by stigma and the associated social desirability biases that lead to underreporting

(Jones & Kost, 2007; Major & Gramzow, 1999), which may render our estimates conservative. Future research should mitigate this through indirect questioning or anonymous methods (Desai et al., 2021; Jagannathan, 2001). Second, limited demographic data constrained our ability to examine intersectional differences, potentially obscuring how reproductive decisions affect women of different ethnicities (Jones et al., 2016) and different gender and sexual identities (e.g., non-binary people born female, bisexual, or pan-sexual people). Third, an important subset of women who experienced involuntary pregnancy loss (e.g., miscarriage, ectopic pregnancy, or stillbirth) cannot be separately identified in our analyses. Unlike abortion, which was consistently captured across survey waves, pregnancy loss was not systematically distinguished (NLSY79; U.S. Bureau of Labor Statistics, 2024). Because of this inconsistency across the study period, women who experienced pregnancy loss cannot be reliably analyzed and are not represented as a separate category, despite existing evidence suggesting these reproductive experiences carry unique economic consequences (e.g., ONS, 2025).

Fourth, while lifespan career theory emphasizes both personal and contextual mechanisms (Zacher & Froidevaux, 2021), our focus on wage outcomes means we did not empirically test these dual pathways. The dataset includes some relevant variables (e.g., occupation, hours), but limitations in measurement quality, sample size, and the scope of this report preclude a more comprehensive test. Future research should examine a broader set of outcomes (e.g., occupational mobility, job satisfaction) and mechanisms such as occupational sorting or perceived agency.

Fifth, we cannot fully account for alternative explanations such as occupational type, tenure, or job changes, which may independently influence wage growth (Ng et al., 2005; Livingston et al., 2025). While we controlled for key variables (i.e., age, race, marital status,

number of children, total working hours and years of education), residual confounding remains a possibility. Occupation, in particular, may act both as a mediator if reproductive decisions influence occupational sorting and as a confounder if different occupational paths yield varying wage growth. However, due to the broad occupational categories and the complexity of tracking occupational changes over time, we could not robustly test these dynamics. Tenure and job mobility are also relevant, but challenging to capture reliably with these data. Future research should examine how reproductive decisions intersect with occupational trajectories and job tenure to clarify the mechanisms driving long-term earnings differences. Finally, because respondents in our dataset had their first abortion before successful legal challenges to *Roe* (i.e., *Casey* in 1992, *Dobbs* in 2022), our data do not speak to the potential impact of recent restrictions.

Conclusion

The changing landscape of reproductive health in the U.S. is reshaping women's economic opportunities. Yet, career development theories have largely ignored how abortion relates to women's economic trajectories. Using national longitudinal data, this study finds that women who had an abortion or avoided pregnancy early in their careers were associated with significantly higher earnings over time compared to those who became mothers. Reproductive decisions are not just a health issue, but an economic one. Policies ensuring access to contraception and safe abortion. paid parental leave, and state funded childcare may be important for women's long-term economic stability.

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Data Transparency Appendix

The data reported in this manuscript were obtained from publicly available data, National Longitudinal Survey of Youth 1979 (NLSY79), https://www.bls.gov/nls/nlsy79.htm. A bibliography of journal articles, working papers, conference presentations, and dissertations using the NLSY79 dataset is available at https://nlsinfo.org/bibliography-start. This is the authors' first use of the dataset.

Table 1

Means, Standard Deviations and Intercorrelations of Main Study Variables

		Mean	SD	Correlations																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Earnings - 1984	$13,014	$14,930																			
2	Earnings - 1990	$22,788	$23,306	0.40																		
3	Earnings - 1996	$27,830	$30,923	0.28	0.59																	
4	Earnings - 2002	$34,214	$38,059	0.25	0.44	0.59																
5	Earnings - 2008	$35,573	$41,127	0.27	0.40	0.55	0.64															
6	Earnings - 2014	$32,265	$39,612	0.25	0.41	0.50	0.59	0.70														
7	Earnings - 2020	$32,533	$48,327	0.19	0.36	0.44	0.49	0.51	0.69													
8	No abortions, no children in 1984	47%	50%	0.22	0.27	0.21	0.17	0.17	0.19	0.19												
9	No abortions, at least one child in 1984	42%	49%	-0.23	-0.27	-0.21	-0.17	-0.18	-0.19	-0.18	-0.80											
10	At least one abortion, no children in 1984	5%	21%	0.08	0.08	0.04	0.03	0.04	0.04	0.03	-0.21	-0.19										
11	At least one abortion, at least one child in 1984	7%	25%	-0.06	-0.07	-0.05	-0.02	-0.04	-0.04	-0.05	-0.25	-0.22	-0.06									
12	Child first (vs. abortion first)?	84%	36%	-0.16	-0.18	-0.14	-0.12	-0.12	-0.11	-0.10	n/a	0.85	-0.73	-0.41								
13	Age in 1984	23.5	2.2	0.28	0.05	-0.01	0.01	-0.01	-0.02	-0.08	-0.21	0.16	0.02	0.09	0.01							
14	Hispanic race (1, 0 otherwise)	17%	38%	-0.04	-0.04	-0.03	-0.02	-0.04	-0.03	-0.03	-0.04	0.04	-0.03	0.03	0.03	-0.03						
15	Black race (1, 0 otherwise)	26%	44%	-0.15	-0.07	-0.08	-0.06	-0.07	-0.09	-0.08	-0.10	0.10	-0.07	0.05	0.10	-0.04	-0.27					
16	Years of education at 1st pregnancy (pre-1984)	11.5	1.9	0.33	0.29	0.21	0.21	0.23	0.24	0.20	n/a	-0.04	0.12	-0.09	-0.07	0.46	-0.16	0.01				
17	Age at 1st pregnancy (pre-1984)	19.6	2.7	0.23	0.14	0.07	0.08	0.11	0.11	0.10	n/a	0.18	-0.01	-0.22	0.12	0.32	0.01	-0.19	0.61			
18	Hours worked in last 12 months - 1984	1045	880	0.78	0.34	0.22	0.19	0.19	0.20	0.16	0.26	-0.27	0.09	-0.07	-0.17	0.18	-0.04	-0.15	0.29	0.18		
19	Number of children – 1984	0.8	1.1	-0.29	-0.29	-0.22	-0.17	-0.19	-0.21	-0.19	-0.74	0.72	-0.18	0.21	0.42	0.25	0.05	0.13	-0.22	-0.32	-0.34	
20	Married - 1984 (1, 0 otherwise)	38%	48%	0.02	-0.13	-0.09	-0.05	-0.03	-0.04	-0.06	-0.34	0.36	-0.09	0.04	0.16	0.23	0.05	-0.20	0.09	0.22	-0.03	0.29

Sample size varies due to different number of responses in different years – full details including statistics for control variables post 1984 available in the supplementary material

All correlations of magnitude at least 0.05 significant with $p < .001$

Notes:
“No abortions, no children in 1984” has value 1 if, at the time of the 1984 interview, the respondent had had no children, and had had no abortions; 0 otherwise
“No abortions, at least one child in 1984” has value 1 if, at the time of the 1984 interview, the respondent had at least one child, but had never had an abortion; 0 otherwise
“At least one abortion, no children in 1984” has value 1 if, at the time of the 1984 interview, the respondent had not had any children, but had had at least one abortion; 0 otherwise
“At least one abortion, at least one child in 1984” has value 1 if, at the time of the 1984 interview, the respondent had had at least one child, and had had at least one abortion; 0 otherwise
“Child first (vs. abortion first)?” has value 1 if, at the time of the 1984 interview, the respondent had at least one child, and they had been born before any abortions that might have taken place. It has value 0 if at the time of the 1984 interview, the respondent had had at least one abortion, and this (or the first of them) had occurred before the respondent had given birth to any children. If the respondent had neither children nor any abortions by the 1984 interview, there is no value for this variable

Table 2

Key Parameters From Latent Growth Curve Models: First Model With No Predictors Other Than Controls, Then Model To Test Hypotheses 1a and 1b

	First model		Hypothesis 1	
Term	*b*	95% CI	*b*	95% CI
Intercept	1.81***	(0.99, 2.62)	0.73	(-0.58, 2.03)
Linear term	12.57***	(11.19, 13.94)	8.94***	(7.09, 10.79)
Quadratic term	-1.65***	(-1.90, -1.41)	-1.26***	(-1.58, -0.94)
No abortion(s) or child(ren) predicting…				
Intercept			1.48**	(0.30, 2.66)
Linear term			4.09***	(2.64, 5.53)
Quadratic term			-0.44**	(-0.68, -0.20)
Abortion(s), no children predicting…				
Intercept			0.81	(-1.07, 2.69)
Linear term			4.28**	(1.63, 6.94)
Quadratic term			-0.55*	(-0.99, -0.22)
Abortion(s) and child(ren) predicting…				
Intercept			-0.01	(-1.42, 1.41)
Linear term			1.44	(-0.76, 3.64)
Quadratic term			-0.20	(-0.56, 0.17)

Table shows regression parameters from latent growth curve models needed to interpret results of hypotheses.
Outcome is Earnings/$1,000 to ensure variance is not too large for estimation procedure.
Each time unit is a six-year period.
"No abortion(s) or child(ren)" has value 1 if, at the time of the 1984 interview, the respondent had had no children, and had had no abortions; 0 otherwise
"Abortion(s), no children" has value 1 if, at the time of the 1984 interview, the respondent had not had any children, but had had at least one abortion; 0 otherwise
"Abortion(s) and child(ren)" has value 1 if, at the time of the 1984 interview, the respondent had had at least one child, and had had at least one abortion; 0 otherwise
Full model results available in the supplementary material
Sample size = 6,218
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 3

Estimated Average Earnings Between 1984 and 2014 for Each of the Four Groups Under Both the Gross Penalty Prediction Model (Adjusted for Working Hours, Number of Children and Marital Status) and the Net Penalty Prediction Model (With No Adjustment For Control Variables), given to the nearest $1,000

	Gross penalty prediction (Equivalent in 2025 dollars)	Net penalty prediction (Equivalent in 2025 dollars)
No abortion(s) or child(ren) by 1984	$1,132,000 ($1,406,000)	$1,038,000 ($1,289,000)
At least one abortion, no child(ren) by 1984	$1,083,000 ($1,345,000)	$1,005,000 ($1,248,000)
At least one child, no abortion(s) by 1984	$684,000 ($850,000)	$799,000 ($992,000)
At least one abortion and at least one child by 1984	$761,000 ($945,000)	$856,000 ($1,064,000)

Table 4

Key Parameters From Latent Growth Curve Models for Supplementary Analysis: First Pregnancy Event Being a Child (vs an Abortion) Predicting Earnings Growth 1984–2020, Controlling for Education and Age at First Pregnancy Event

Term	*b*	95% CI
Intercept	0.43	(-1.13, 1.99)
Linear term	11.19***	(8.94, 13.45)
Quadratic term	-1.45***	(-1.83, -1.07)
Child first (vs abortion first) predicting…		
Intercept	-0.18	(-1.92, 1.55)
Linear term	-3.16**	(-5.32, -0.99)
Quadratic term	0.37*	(0.02, 0.72)
Years in education (at first pregnancy) predicting…		
Intercept	0.46**	(0.11, 0.82)
Linear term	1.50***	(1.00, 1.99)
Quadratic term	-0.19***	(-0.27, -0.10)
Age (at first pregnancy) predicting…		
Intercept	-0.02	(-0.39, 0.36)
Linear term	-0.69*	(-1.19, -0.19)
Quadratic term	0.11*	(0.02, 0.19)

Table shows regression parameters from latent growth curve models needed to interpret results of hypotheses.
Outcome is Earnings/$1,000 to ensure variance is not too large for estimation procedure.
"Child first (vs. abortion first)?" has value 1 if, at the time of the 1984 interview, the respondent had at least one child, and they had been born before any abortions that might have taken place. It has value 0 if at the time of the 1984 interview, the respondent had had at least one abortion, and this (or the first of them) had occurred before the respondent had given birth to any children. If the respondent had neither children nor any abortions by the 1984 interview, there is no value for this variable
Each time unit is a six-year period.
Full model results available in the supplementary material
Sample size = 2,842
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 4

Potential Policy Implications for Supporting Women's Economic Trajectory

Support Domains		Potential Government-level Priorities	Potential Organizational-level Priorities
Pregnancy Prevention and Termination	Contraception	Contraception access can enable people to control whether and when they become pregnant, which can support sustained labor force participation and career continuity, thereby preserving women's long-term earnings trajectories.	Employer-sponsored health insurance can provide access to contraception.
	Abortion	Access to abortion may help to safeguard women's economic standing and workforce participation.	Because of state-level variation in access, employees may benefit from employer-sponsored travel and reproductive healthcare support.
Mothers' Labor Market Continuity and Financial Burdens	Parental Leave	Establish a statutory paid parental leave program with job protection to support mother's labor market continuity and reduce income losses post-birth.	Offer paid parental leave beyond statutory minimums to support women's career continuity and retention after birth.
	Childcare	Expand investment in subsidized childcare, especially for children aged 0-3, to increase mothers' labor market participation.	Provide on-site childcare or childcare subsidies to reduce costs associated with motherhood.

Figure 1

Observed Values of Mean Earnings for Four Groups (Based on Status at 1984), Over the Period 1984–2020

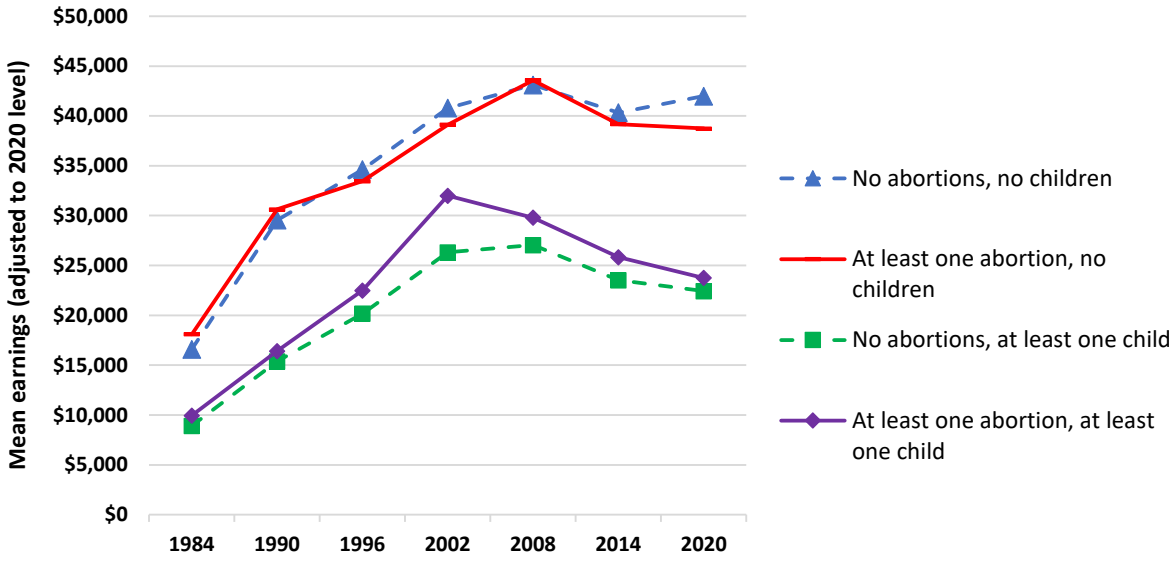

Figure 2

Predicted Trajectories of Earnings Over Time for the Four Groups of Women: Both the Gross Wage Penalty Prediction (Above) and the Net Wage Penalty Prediction (Below)