Does China's Fertility Policy Induce Employment Discrimination against Women in Labor Market? A Nationwide Correspondence Experiment

Xun Li
Wuhan University

Dan Wen
Peking University

Lin Ye
Central China Normal University

Jiang Yu (✉️ yujiang@whu.edu.cn)
Wuhan University  https://orcid.org/0000-0001-8844-5108

Research Article

Keywords: Fertility policy, Employment discrimination, Correspondence experiment, Two-child policy, Three-child policy

Posted Date: September 13th, 2022

DOI: https://doi.org/10.21203/rs.3.rs-1161948/v2

License: ☕️ ☀️ This work is licensed under a Creative Commons Attribution 4.0 International License. Read Full License
Does China’s Fertility Policy Induce Employment Discrimination against Women in Labor Market?
A Nationwide Correspondence Experiment

Li Xun\textsuperscript{a}, Wen Dan\textsuperscript{b}, Ye Lin\textsuperscript{c,*}, Yu Jiang\textsuperscript{d,*}

September 2022

\textsuperscript{a} School of Economics and Management, Wuhan University, China (li.xun@whu.edu.cn).
\textsuperscript{b} Guanghua School of Management, Peking University, China (wendan@whu.edu.cn).
\textsuperscript{c} Center for Cultural Industry Research, Central China Normal University, China (yelinlin@ccnu.edu.cn).
\textsuperscript{d} Center of Economics Development Research, Wuhan University, China (yujiang@whu.edu.cn).

* Corresponding author.
Abstract

We apply a two-wave nationwide correspondence experiment to assess the effects of the *two-child* and *three-child* policies on employment discrimination against women in China’s labor market. Using 13,751 observations collected through this experiment, we find that the announcement of the two-child policy led to a 4.9% decrease in total interview callbacks overall, and decreases of 4.3%, 5.7%, and 5.6% for single women, those married with no children, and those married with one child, respectively. The implementation of the three-child policy led to a 10.4% decrease, but only for married women with two children. The callback rates of women who even didn’t disclose marriage and fertility status information decreased by 4.5% under the universal two-child policy and 6.6% after the three-child policy. Our findings point to the importance of tailoring supplementary policy towards firms and women in specific group.

**Keywords:** Fertility policy; Employment discrimination; Correspondence experiment; Two-child policy; Three-child policy

**JEL Classification:** C93, J71, M51
1. Introduction

As a great policy revision to address the problem of ageing population and a sharp drop of fertility rate, at the start of 2016, the Chinese government replaced one-child policy with two-child policy. In 2021, three-child policy has been brought up as a new fertility policy. To the best of our knowledge, the discussion on the impacts of these two policy changes on employment discrimination against women in labor market remains a blank in the relevant literature (Firth, 1982; Angrist and Evans, 1998; Correll et al., 2007; Goldin, 2014; Blau & Kahn, 2017; Bygren et al., 2017; Becker et al., 2019; Kleven et al., 2019; He et al., 2022).

The intuition that the two policies induce fertility discrimination against women in labor market is straightforward. On the one side, China’s female participation rate in labor force is relatively high, especially in some position such as accounting. According to the annual statistics of registrations for accounting certificate, the ratio of women to men for primary accounting title exam is nearly 9:1, and the ratio of that for the CPA exam is 7:3.\(^1\) As a result, in China’s accounting job market, especially for junior accountant jobs, female job seekers are much more than male ones in quantity. The high competition among female job seekers in this market makes a position very selective, and consequently lead to employment discrimination against women. The discrimination can be based on their fertility conditions, which is underlyingly relevant to the cost of childbearing and childcare (Kleven et al., 2019). On the other side, when the two-child policy was enacted in 2012, employers may be concerned about the possibility of a woman with one child having another, which will induce an extra cost (e.g., maternity leave with payment) as well as a lower productivity. Similarly, women with two children may be discriminated against after the implementation of the three-child policy.

Evaluating the impacts of fertility policies on women in labor market is meaningful and important, as many good characteristics and important role of women in business world are identified in a broad literature (Francis et al., 2015; Adhikari et al., 2019). This paper focuses on these two policy changes and contribute to the literature by exploring the following questions. First, do the two fertility policies induce employment discrimination in labor market? Addressing this question can contribute unique evidence from China to the relevant literature such as He et al. (2021), as well as encourage further investigations into the side effects of the new fertility policy. Second, if such effects do exist, which women suffer more after the implementation of the two policies? Answering this question can help policy makers target a specific group with supplementary policies. Third, can discrimination be avoided

\(^1\) [https://www.kuaiji.com/ye/2001929.html](https://www.kuaiji.com/ye/2001929.html) for a review.
through not disclosing marriage and fertility information? If not, it indicates that women in general are discriminated against, and policy intervention is necessary.

To answer these questions, traditional empirical identification strategies or complex algorithms for identifying discrimination is challenging due to endogeneity and other issues (Rich & Riach, 2002; Mincer & Polachek, 1974; Kunze, 2008), as employers never disclose any instance of discrimination in public recruitment under China’s current legal framework. While correspondence experiments can be effectively applied when exploring employment discrimination against women with children or who are or may in future be pregnant (Bertrand & Duflo, 2017). Through a large-scale correspondence study nationwide with 13,751 customized fictitious resumes sent out in 148 cities across 26 provinces in China, we evaluate the fertility discrimination induced by the two policies respectively. Using a difference-in-differences (DID) method, we find that women subject to the universal two-child policy have 4.9% fewer callbacks. Married women with no children and those with one child are discriminated against the most, with 5.7% and 5.6% fewer callbacks. The implementation of the three-child policy led to a 10.4% decrease, but only for married women with two children. In addition, we find that women who do not disclose their marriage and fertility information are discriminated against, with a 4.5% reduction in callbacks under the universal two-child policy, and with a 6.6% reduction after the three-child policy.

Our research is different from He et al. (2022) in several aspects. First, He et al. (2022) investigate the heterogenous impacts of two-child policy across gender using a correspondence experiment. We focus on the period between January 2015 and December 2016, which allows a before-and-after investigation of the implementation of the universal two-child policy, as well as the period between June 2020 and September 2021, which does likewise for the three-child policy. Second, our experimental design significantly differentiates from He et al. (2012). Our customized resumes are designed to contain identical personal details except for marital and childbearing status. Third, our experiment considers the case of no fertility information disclosure. This design can help identify the existence of statistical discrimination. Fourth, He et al. (2022) choose the three job categories, which are sales, administrative assistant, and customer service. While we focus on accountant position.

The remainder of this paper is organized as follows. Section 2 consists of a review of the background and literature and in Section 3 we develop the experimental design. Section 4 introduces the data. Section 5 discusses our empirical strategy. Our main findings are presented in Section 6. We explore various heterogeneities in the discrimination effects of the fertility policies in Section 7. Section 8 concludes.
2. Background and Literature

2.1 China’s fertility policy

As Fig. 1 illustrates, the one-child policy became fully operational in China in 1979, and it not only effectively reduced the population growth rate but also had a significant impact on female employment (Zhang, 2017). It reduced the costs of hiring women, and more importantly, made the potential fertility costs that companies would face clearer and more stable. Thus, to some extent, the one-child policy successfully increased the participation rate of the female labor force.

However, the one-child policy also brought problems such as aging and an unbalanced sex ratio at birth. The Chinese government initiated a universal two-child policy in 2016 to address these social issues. The policy restricted couples to having no more than two children, thus ending the previous one-child policy, and the government encouraged citizens to have a second child, with extended maternity leave as the main incentive. This policy also potentially increased women’s responsibilities to their families and society, and the pressure on them to have children, thereby posing a challenge to fair employment. The All-China Women’s Federation conducted a survey and noted that after the universal two-child policy was implemented, 24.7% of those surveyed thought that employers were reluctant to hire women of childbearing age who had not yet had children (Wang, 2019).

Unexpectedly, the Chinese government subsequently proposed a three-child policy due to the rapid decline in the population growth rate. From May 31, 2021, this policy allowed a family to have three children. However, without clear supporting policies, such as subsidies for companies hiring women of childbearing age, this incentive potentially increased both employment costs and uncertainty, which may lead to fertility discrimination against women of childbearing age.

2.2 Relevant literature

Correspondence experiments are widely applied in the literature (Banerjee & Duflo, 2017; Gaddis, 2018). Their applications in social sciences and other fields are described by Bertrand and Duflo (2017). Neumark (2012; 2018) investigates in detail their widespread application in the field of labor market discrimination. Bertrand and Mullainathan (2004) conduct a resume experiment and find that white people are 50% more likely to be called for an interview than black people. Galarza and Yamada (2014) and Lee and Khalid (2016) take similar approaches when investigating the discrimination faced by indigenous people in Peru and Chinese people in Malaysia, respectively. Oreopoulos (2011) examines
the nationality of applicants to assess discrimination against foreign names in Canada, and notes that the level of discrimination faced by an applicant with a Chinese, Pakistani, or Indian name is almost as severe as that Bertrand and Mullainathan (2004) identify for black people. This kind of discrimination has also been identified in Ireland (McGinnity & Lunn, 2011), Sweden (Bursell, 2014; Carlsson & Rooth, 2007), and France (Edo et al., 2019). In addition, appearance can cause discrimination in the labor market. Galarza and Yamada (2019) randomly assign photos to a fictitious resume and find that attractive candidates are 82% more likely to be successful than less attractive candidates, but the extent of the advantage varies by job category.

Our research extends the literature on employment discrimination against women due to their marital and childbearing status. Arceo-Gómez and Campos-Vazquez (2014) respond to job advertisements with fictitious resumes that include randomized information about the applicants and find that married women receive fewer interview callbacks than single women, but marital status has no effect on men. He et al. (2022) employ a correspondence experiment before and after the implementation of two-child policy, and find that women but not men in China are subject to labor market discrimination due to expected family responsibilities. Firth (1982) finds that applicants who have finished bringing up their children are preferred by employers, and those who are potentially reproductive men are discriminated against much less than women. Similar findings are also documented in various European countries. Correll et al. (2007) investigate the motherhood penalty that can result from the perceived risk of potential fertility using a laboratory experiment and find that women without children are more favored by employers. However, Bygren et al. (2017) conduct a resume experiment involving 2,144 employers in the Swedish labor market and find that whether a woman has children makes no difference to her job-hunting success. Becker et al. (2019) conduct a multinational resume experiment focused on accounting and secretarial positions in Germany, Switzerland, and Austria. They find that among married women seeking part-time work, those with older rather than younger children are significantly preferred.

In addition to marital and childbearing status, the perceived risk of a woman's potential fertility can also be evaluated by her age. Thus, whether it is age or childbearing status that leads to employment discrimination is difficult to ascertain. Some studies consider that age conveys the likelihood of future marriage as well as childbearing, and age groups can be used to represent whether a female applicant is of childbearing age. Duguet (2005) and Petit (2007) conduct resume experiments in France, and categorize virtual job hunters into those who are young without children (25 years old), older without children (37 years old), and older with two children (37 years old). The results suggest that there is no gender discrimination in the older category, but for the younger group, or those applying for higher-
paid jobs, women are much less likely to be invited to interviews than men. Helleseter et al. (2016) propose the “age twist” in employers’ gender selection, which indicates that when employers choose older (as opposed to younger) workers, their gender selection will shift sharply from female to male due to the differences in family responsibility.

Indirect evidence has been provided regarding whether there is a penalty for potential maternity in the labor market. Although some studies show that lesbian applicants are less likely to receive callbacks than heterosexual women (Drydakis, 2009, 2011, 2012, 2014; Ahmed et al., 2013), the consideration that homosexual women are less likely to have children can reverse this perception. For example, by examining different ages and sexual orientations in addition to marital status, Baert (2014) compares the relative likelihoods of hiring heterosexual and homosexual women who are young or middle-aged through a resume experiment, and finds that young lesbians are preferred to other young women, while there is no preference in terms of middle-aged women with different sexual orientations.

3. Experimental Design

3.1 Timeline and locations of the experiment

As shown in Fig. 1, the first wave of our experiment was conducted between January 2015 and December 2016, and the second wave between June 2020 and September 2021. On October 29, 2015, the Chinese government announced that the universal two-child policy would be implemented on January 1, 2016. The government then allowed families to have a third child from May 31, 2021, only five years after the two-child policy was enacted. We timed our two-wave experiment to enable before-and-after investigations of the two fertility policies.

The study was conducted in 148 prefectural Chinese cities, including the four first-tier megacities (i.e., Beijing, Shanghai, Guangzhou, and Shenzhen), along with other 23 provincial capital cities and 121 other cities. As shown in Fig. 2, most of these cities are in southeast China, below the Hu Line2. They accounted for 94.41% of the population and 94.13% of China’s GDP in 2010 (Chen & Gong et al., 2016).

--- Fig. 2 ---

--- Footnote ---

2 The Hu Line named after Hu Huanyong, a famous Chinese population geographer. He proposed it to demonstrate the different population densities of the areas either side of the line in 1935.
3.2 Design of fictitious resumes

Potential fertility. The virtual applicants in our experiment were all aged 30\(^3\) and categorized into the following marital and childbearing statuses: unmarried without children, married without children, married with one child, married with two children, and married with three children.\(^4\) The levels of discrimination against women in these categories under a given fertility policy can be expected to be different. For example, since the universal two-child policy was fully implemented in 2016, married women with no children could in future have two children, and married women with one child were allowed to have one more child. Married women with two children could have no more children at that time, but were able to have a third when the universal three-child policy began. In addition, unmarried women are less likely to give birth than married women, as illegitimate children bring a social stigma in China.

In addition, we included resumes that provided no information on the candidates’ marital and childbearing statuses. These “no information” job hunters were incorporated to assess whether female applicants can avoid discrimination by omitting information about their marital and childbearing status in their resume, under the assumption that employers may statistically discriminate against job-hunting women who lack fertility information.

Other personal information. Other than marital status, all applicants provided identical information including name, age (30), appearance, ethnicity (Han), education, work experience (5 years), and relevant skills (junior accountant certificate and accounting software). We set all aspects of personal information to an ordinary level (i.e., the job hunters were 30-year-old women with 5 years working experience) to prevent any strong substitution effects on marital status. The name and appearance of our applicant were randomly generated by software and set to normal levels. In terms of education and skills, the applicant was an undergraduate with a junior accountant certificate. The applicant was of Han ethnicity as this is China’s major ethnic group and accounted for more than 91.51% of the population in 2010 and 91.11% in 2020. This group is therefore the most affected by the family planning policy (National Bureau of Statistics of China [NBSC], 2021). As in studies of female employment

\(^3\) The age of obtaining a Bachelor’s degree in China is generally 22, and the average marriage age of women with a Bachelor’s degree is 27 (although in Beijing, the average age of first marriage for women with a Bachelor’s degree increased from 26.5 years in 2011 to 30.1 years in 2019). The marriage and childbearing statuses of women aged 30 can vary, and 5 years of work experience is typical. In addition, 30 is a typical age setting in other studies (Becker et al., 2019), which enables us to compare our results.

\(^4\) Our virtual applicants are limited to women of childbearing age. We focus on employment discrimination against women of childbearing age due to their potential fertility risk; studies have shown that the impacts of marital status on female and male job hunters are opposite and difficult to compare (Firth, 1982). Thus, we do not include male applicants.
discrimination in other countries (Riach & Rich, 2010; Rich & Riach, 2002), we focused on one job type, namely, accounting positions. We focus on accounting positions because most companies have them and thus the volume of employees ensures we can collect the required quantity of data. Second, accountancy tasks are generally similar. There is no need to control the work content.

Quality control of resumes. We invited an HR employee from Fortune Global 500 with 10 years’ work experience to help us design the resumes and thus ensure their quality. However, we still need to ensure that the virtual resumes appeared sufficiently realistic to other HR staff, which required that the disclosure of marital status and fertility information would not appear deliberate. Thus, we invited five HRs from different companies (with eight years’ experience on average) to confirm the authenticity of our resumes before we started the experiment. We presented the five HR employees with our designed resume and four real resumes and clearly stated that one was fake. Only one out of the five employees correctly identified the fake. Thus, the quality of our fake resume is guaranteed.

3.3 Resume delivery and data collection

Delivery process and information record. We conducted our study on 58.com, which was one of the largest recruitment websites in China. This company was listed on the New York Stock Exchange in 2013. According to its website, 58.com currently has more than 600 million registered users and 96 million resumes. We selected the job posts that met our selection criteria and recorded company information, which included name, email address, expected salary, number of job applicants, company size, resume feedback rate, city location, and ownership of company. Next, we randomly delivered resumes to the email addresses we had collected and recorded the delivery time (including date, day of the week, and 24-hour time) to control for the fixed effect of time. Each email was entitled “Job application + Accounting + Candidate Name + five years of work experience” and included a covering letter (see A3) with the resume in PDF format attached (see A4).

Record of HR response. Employers typically invite prospective candidates to an interview (or preliminary test for other job types) after receiving a resume. The invitation is made through a phone call or text message, and rejection is generally conveyed by email (see A1). We recorded whether each delivered sample received an interview invitation. Following Bertrand and Mullainathan (2004), we defined an application as a success if it received a callback from the recruiter within 14 days of resume submission and marked as “1”. If no response or a rejection was received within two weeks of sending the resume, the result was marked as “0”. We closed the process as soon as we got an invitation by replying to the HR that we had already gotten an offer (see A2).
4. Data

4.1 Overall descriptive statistics

The experimental sample includes 13,751 observations, covering 148 Chinese cities in 26 provinces that are mainly concentrated in the southeast (the spatial distribution of sample posts is shown in Fig. 2a). In our experiment, each company only receives one resume. To the best of our knowledge, our sample is larger than others in the literature, and particularly in terms of the number of companies (Becker et al., 2019). In addition, the numbers of resumes within each category of women are controlled to be as close as possible. The final totals for women who are unmarried without children, married without children, married with one child, married with two children, married with three children, and those who offer no marital information are 2,575, 2,565, 2,414, 2,449, 1,226, and 2,472 resumes, respectively. Fig. 2 compares the geographic distribution of our sample with the total number of accounting posts in 58.com. It illustrates that our sample and the total accounting posts are very close in terms of spatial distribution, indicating that our sample is a good representative. We also check the sample balance in Table 1, which shows that in terms of enterprise size, property rights, and city scale the proportions of samples are statistically almost the same across the categories. For example, the overall proportion of candidates applying for jobs with small firms (1-49 employees) is 36.94%, and 38.1% for single women, 36.26% for married women without a child, and 34.92%, 39.18%, and 38.34% for those with one, two and three children, respectively. For the group with no information disclosure, the proportion is 35.48%.

— Table 1 —

4.2 In-principle test

To identify changes in the callback rate before and after the two policies, we visualize our data in Fig. 3. We find that before the universal two-child policy, the overall callback rate is 17.46%, while after the policy the rate is 13.45%, demonstrating a significant decrease of 4.01 percentage points (p = 0.000). After the universal three-child policy the overall callback rate (excluding married women with three children) decreases from 13.52% to 7.90%, representing a 5.62 percentage point (p = 0.000) decrease.

— Fig. 3 —

6 Married women with three children were in the second wave experiment (2020-2021), the number of observations was half that of the other groups due to the shorter time period.
**Fig. 4** visualizes monthly callback rates of the overall sample and of women in each group. In the left panel, before the announcement of the universal two-child policy, the lines for all categories share a very similar trend, while after the policy, women who were married with two children remained at a similar level while the callback rates of the other groups declined. Hence, we find no significant difference between the callback rates for married women with two children before and after the two-child policy ($p = 0.968$). The right panel displays the fluctuations in callback rates for the overall sample and each group before and after the three-child policy. Married women with two children experienced the most significant change, even though they had not been affected by the two-child policy. As expected, married women with three children received the fewest callbacks and this remained unchanged after the policy was implemented ($p = 0.951$).

--- **Fig. 4 ---

5. Methodology

We use the DID method to provide a clean estimate of the impact of fertility policy on employment discrimination. Specifically, a linear probability model is applied to estimate the causal effect of fertility policy on callback rates.

\[
Callback_i = \beta_0 + \beta_1 \text{Treat} + \beta_2 \text{Post} + \beta_3 \text{Treat} \times \text{Post} + Z_i \delta + FE + \epsilon_i
\]  

In the model, $Callback_i$ measures the job-search status, which denote whether an interview invitation is received for resume delivery $i$ (receiving an invitation = 1, otherwise = 0). We use the marital status of female job hunters to reflect their potential fertility. Those in the treatment group take the value of 1 if they are exposed to the impact of the policy, and 0 if not. In the first wave, our control group is married women with two children, as this group is unlikely to be affected by the two-child policy. In the second wave, the control group is married women with three children. $Post$ is a dummy that denotes the time after the policy. $Z_i$ refers to a series of influencing factors including monthly expected salary, number of historical applicants, company’s industrial classification, property rights, and scale. We further control the fixed effects ($FE$) of city, day of week, and resume delivery time. Standard error clustered at city level is used.

---

Note that the Chinese Lunar Festival is generally in February, and thus companies are usually closed for the holiday. Callback rates are therefore typically at their lowest in February.
6. Main findings

6.1 The fertility policies led to employment discrimination

Fig. 5 reports the results of the two waves. The left panel displays the effect of the universal two-child policy overall and for each category. We find that on average, the two-child policy decreased the callback rates by 4.9% (p = 0.003). The right panel illustrates the effect of the three-child policy. The policy induced an overall decrease of 5.3% in callback rates (p = 0.008). These findings confirm that the fertility policies led to more employment discrimination against women in China’s labor market. They also indicate that the three-child policy led to more discrimination than the two-child policy. More details of the regression analysis are given in Table 2.

Table 2

6.2 The “cut-off” group suffered more discrimination after the policies

As shown in Fig. 5, callbacks received by single women decreased by 4.3% (p = 0.024) after the universal two-child policy. For married women without children or with one child, callbacks decreased by 5.7% (p = 0.009) and 5.6% (p = 0.010), respectively. We find no significant difference between the two effects (p = 0.925). We also find that the three-child policy only affected married women with two children with a sharp decline of 10.4% (p = 0.000). It may be due to employers’ expectation that women with two children have a higher likelihood of having a third child. The effects are negative and insignificant for single women, married women without children, and those with one child. Combining these findings, we conclude that the “cut-off” groups (i.e., married women with one child in the two-child policy and married women with two children in the three-child policy) suffered more discrimination than other groups.8

— Fig. 5 —

6.3 Discrimination affects all women, whether they disclose their information or not

Interestingly, Fig. 5 shows that in the first wave, the received callbacks decreased by 4.5% (p = 0.044) for women who did not disclose their marriage and fertility information. In terms of the policy effect, this positions them between single women and married women without children or with one child. This implies that even a female candidate does not disclose fertility and marriage information, an employer tends to discriminate statistically against her. In the second wave, the callback rate for women

8 Note that no statistical difference between married women without children and those with one child. They are both largest ones (5.7% and 5.6%).
who did not disclose this information decreased by 6.6% (p = 0.022), indicating that the three-child policy led to further discrimination against this category. More details of the regression analysis are given in Supplementary Table 3 and Table 4.

---Table 3---

---Table 4---

7. Further analysis

7.1 Parallel trends and placebo test

As we use a standard DID implementation, we check whether we meet the assumption of parallel trends. We develop a dynamic model that captures the effects in each month before the policy. Fig. 6 illustrates the dynamic effects over the four months before the policy, and we find these insignificant, indicating that the parallel trend assumption is met. The average effects become significant after the policy.

---Fig. 6---

We also conduct a placebo test to rule out the possibility that our findings are coincidental. We randomly assign the beginning point of the policy to another date, and use this as a false beginning date to run another DID regression. If the coefficient of interest is insignificant, the findings are not due to a coincidence. We repeat this procedure 500 times and illustrate the results in Fig. 7. We find that the mean of the coefficients is close to zero, and most of them are insignificant. Overall, these two tests validate our empirical design.

---Fig. 7---

7.2 Heterogeneity

We further analyze the heterogeneous effects of the fertility policies on different levels of firm scale, company ownership, and city development, and the results are illustrated in Fig. 8. First, in terms of firm size we find that employment discrimination is more prevalent in small businesses, which account for 94.15% of all enterprises in China and provide 150 million positions (State Administration of Market Supervision of China, 2014). Second, in terms of ownership, we find that received callbacks
from state-owned companies decreased after the implementation of the two-child policy and three-child policy. We also find that in private companies significantly decreased after the three-child policy. No change is identified in foreign companies. Third, we find that the effect of the two-child policy was significant in first-tier cities while the three-child policy had a significant effect in second-tier and third-tier cities. In China, only 80 million people live in first-tier cities while more than 900 million live in second and third-tier cities. This implies that more women were discriminated against after the implementation of the three-child policy. Further details of the regression results are given in Table 5 and Table 6.

8. Concluding remarks

In recent years governments worldwide have made great strides in providing women with equal rights in the labor market through policies such as increasing levels of education, but employers’ concerns about women’s fertility are still cited as the main reason for their relatively disadvantaged position. Our large-scale correspondence experiment using 13,751 accounting posts find that the announcement of the two-child policy led to a 4.9% decrease in total interview callbacks overall, and decreases of 4.3%, 5.7%, and 5.6% for single women, those married with no children, and those married with one child, respectively. The implementation of the three-child policy led to a 10.4% decrease, but only for married women with two children. The callback rates of women who even didn’t disclose marriage and fertility status information decreased by 4.5% under the universal two-child policy and 6.6% after the three-child policy. This implies that employment discrimination against women was aggravated and extended after the fertility restrictions were put in place.

Our findings have implications for public policy. First, the coverage of social safeguards must be boosted. Only when a system that ensures the fertility security of female workers is effectively implemented can women give birth without worrying about the negative effects on work. Second, the government should implement policies involving incentives for businesses. Any fertility security system should consider both the interests of women, employers, and others in society. This can help
eliminate fertility discrimination and also encourage childbearing, thus addressing the issue of a low fertility rate. For example, tax deduction can be implemented according to the proportion of female employees and fertility in a company, thus compensating for their fertility costs. The government can also increase the supply of childcare services and provide allowances to grandparents to take care of grandchildren, thus reducing the burden of parents on care for young children.

Our study has limitations at current stage while leave rooms for future study. First, fertility discrimination is reflected in all stages of employment, but we are only able to investigate discrimination at the resume delivery stage. Examining discrimination at the interview, job assignment, and promotion stages would be worthwhile. Second, examining whether the levels of higher education or work experience have strong substitution effects for marital and childbearing status, or if they even reduce fertility discrimination, would be meaningful in future studies. Finally, as the preference in China is for a male child, the gender of children may affect the potential fertility rate (Jiang et al., 2015). Whether children’s gender also influences the decision of employers is a question that requires further exploration.
References

1. Adhikari, Binay K., Anup Agrawal, James Malm, 2019, “Do Women Managers Keep Firms Out of Trouble? Evidence From Corporate Litigation and Policies” Journal of Accounting and Economics, 67(1), 2019: 202-225.

2. Ahmed, A. M., Andersson, L., and Hammarstedt, M., 2013, “Are Gay Men and Lesbians Discriminated Against in the Hiring Process?” Southern Economic Journal, 79(3): 565-585.

3. Angrist, J. D. and Evans, W. N., 1998, “Children and their Parents' Labor Supply: Evidence from Exogenous Variation in Family Size,” American Economic Review, 88(3): 450-477.

4. Arceo-Gómez, E. O. and Campos-Vazquez, R. M., 2014, “Race and Marriage in the Labor Market: A Discrimination Correspondence Study in a Developing Country,” American Economic Review, 104(5): 376-380.

5. Baert, S., 2014, “Career Lesbians. Getting Hired for Not Having Kids?” Industrial Relations Journal, 45(6): 543-561.

6. Banerjee, A. and Duflo, E., 2017, Handbook of Economic Field Experiments, North-Holland, 24.

7. Becker, S. O., Fernandes, A. and Weichselbaumer, D., 2019, “Discrimination in Hiring Based on Potential and Realized Fertility: Evidence from a Large-Scale Field Experiment,” Labour Economics, 59: 139-152.

8. Bertrand, M. and Mullainathan, S., 2004, “Are Emily and Greg More Employable than Lakisha and Jamal: A Field Experiment on Labor Market Discrimination,” The American Economic Review, 94(4): 991-1013.

9. Bertrand, M., and Duflo, E., 2017, “Field experiments on discrimination,” Handbook of Economic Field Experiments, 1, 309-393.

10. Blau, F. D. and Kahn, L. M., 2017, “The Gender Wage Gap: Extent, Trends, and Explanations.” Journal of Economic Literature, 55(3): 789-865.

11. Bursell, M., 2014, “The Multiple Burdens of Foreign-Named Men—Evidence from a Field Experiment on Gendered Ethnic Hiring Discrimination in Sweden,” European Sociological Review, 30(3), 399-409.

12. Bygren, M., Erlandsson, A. and Gähler, M., 2017, “Do Employers Prefer Fathers? Evidence from a Field Experiment Testing the Gender by Parenthood Interaction Effect on Callbacks to Job Applications,” European Sociological Review, 33(3): 337-348.

13. Carlsson, M., and Rooth, D. O., 2007, “Evidence of Ethnic Discrimination in the Swedish Labor Market using Experimental Data,” Labour Economics, 14(4), 716-729.

14. Chen, M. and Y. Gong, et al., 2016, “Population Distribution and Urbanization on Both Sides of the Hu Huanyong Line: Answering the Premier's Question.” Journal of Geographical Sciences, 26(11): 1593-1610.

15. Correll, S. J., Benard, S. and Paik, I., 2007, “Getting a Job: Is there a Motherhood Penalty?” American Journal of Sociology, 112(5): 1297-1339.

16. Drydakis, N., 2009, “Sexual Orientation Discrimination in the Labour Market,” Labour Economics, 16(4): 364-372.

17. Drydakis, N., 2011, “Women's Sexual Orientation and Labor Market Outcomes in Greece,” Feminist Economics, 17(1): 89-117.
18. Drydakis, N., 2012, “Sexual Orientation and Labour Relations: New Evidence from Athens, Greece,” Applied Economics, 44(20): 2653-2665.
19. Drydakis, N., 2014, “Sexual Orientation Discrimination in the Cypriot Labour Market. Distastes or Uncertainty?” International Journal of Manpower, 35(5): 720-744.
20. Duguet, E., Petit, P. and Petit, P., 2005, “Hiring Discrimination in the French Financial Sector: An Econometric Analysis on Field Experiment Data,” Annales d’Économie et de Statistique, (78): 79-102.
21. Edo, A., Jacquemet, N., and Yannelis, C., 2019, “Language Skills and Homophilous Hiring Discrimination: Evidence from Gender- and Racially-Differentiated Applications,” Review of Economics of the Household, 17(1):349-376.
22. Firth, M., 1982, “Sex-Discrimination in Job Opportunities for Women,” Sex Roles, 8(8): 891-901.
23. Francis, B., I. Hasan, J.C. Park, and Q. Wu, 2015. Gender differences in financial reporting decision making: Evidence from accounting conservatism. Contemporary Accounting Research, 32(3):1285-318.
24. Gaddis, S. M., 2018, Audit Studies: Behind the Scenes with Theory, Method, and Nuance, Springer International Publishing, 14, 1.
25. Galarza, F. B., and Yamada, G., 2014, “Labor Market Discrimination in Lima, Peru: Evidence from a Field Experiment,” World Development, 58: 83-94.
26. Galarza, F. B., and Yamada, G., 2019, “Afro-Descendants in Peru: Do Beauty and Race Matter in the Labor Market?” Review of Development Economics 23(1): 211-230.
27. Goldin, C., 2014, “A Grand Gender Convergence: Its Last Chapter,” The American Economic Review, 104(4): 1091-1119.
28. He H., Li, S. X., and Han, Y., 2022, “Labor Market Discrimination against Family Responsibilities: A Correspondence Study with Policy Change in China”, Journal of Labor Economics https://doi.org/10.1086/719966
29. Helleseter, M. D., Kuhn, P., and Shen, K., 2016, “Age and Gender Profiling in the Chinese and Mexican Labor Markets: Evidence from Four Job Boards (No. w22187),” National Bureau of Economic Research.
30. Hwok-Aun, I. and Muhammed A. K., 2016, “Discrimination of High Degrees: Race and Graduate Hiring in Malaysia,” Journal of the Asia Pacific Economy, 21(1), 53-76.
31. Kleven, H., Landais, C., and Sogaard, J. E., 2019, “Children and Gender Inequality: Evidence from Denmark,” American Economic Journal: Applied Economics, 11(4): 181-209.
32. Kunze, A., 2008, “Gender Wage Gap Studies: Consistency and Decomposition,” Empirical Economics, 35(1): 63-76.
33. Lee, Hwok-Aun and Muhammed Abdul Khalid (2016) “Discrimination of high degrees: Race and graduate hiring in Malaysia”, Journal of the Asia Pacific Economy 21 (1): 53-76.
34. McGinnity, F., and Lunn, P. D., 2011, “Measuring Discrimination Facing Ethnic Minority Job Applicants: An Irish Experiment,” Work, Employment and Society, 25(4): 693-708.
35. Mincer, J., and Polachek, S., 1974, “Family Investments in Human Capital: Earnings of Women,” Journal of Political Economy, 84(2): S76-S108.
36. NBSC (National Bureau of Statistics of China), 2021, “Bulletin of the Seventh National Census (No. 2),” May 11, 2021. http://www.stats.gov.cn/tjsj/tjgb/rkpcgb/qgrkpcgb/202106/t20210628_1818821.html.
37. Neumark, D., 2012, “Detecting Discrimination in Audit and Correspondence Studies,” Journal of Human Resources, 47(4): 1128-1157.
38. Neumark, D., 2018, “Experimental Research On Labor Market Discrimination,” Journal of Economic Literature, 56(3): 799-866.
39. Oreopoulos, P., 2011, “Why Do Skilled Immigrants Struggle in the Labor Market? A Field Experiment with Thirteen Thousand Resumes,” American Economic Journal: Economic Policy, 3(4): 148-171.
40. Petit, P., 2007, “The Effects of Age and Family Constraints On Gender Hiring Discrimination: A Field Experiment in the French Financial Sector,” Labour Economics, 14(3): 371-391.
41. Riach, P. A. and Rich, J., 2010, “An Experimental Investigation of Age Discrimination in the English Labor Market,” Annals of Economics and Statistics, (99/100): 169-185.
42. Rich, J. and Riach, P., 2002, “Field Experiments of Discrimination in the Market Place,” The Economic Journal, 112(483): F480-F518.
43. State Administration of Market Supervision of China, “Report on the Development of Small and Micro Enterprises in China,” March 31, 2014. http://www.gov.cn/xinwen/2014-03/31/content_2650031.htm.
44. Wang, J., 2019, “Joint Proposal by Women's Federation Committee: Introducing an Incentive Policy to Promote Fair Employment for Women.” The Beijing News. March 7, 2019. http://news.sina.com.cn/c/2019-03-07/doc-ihsxncvh0617864.shtml.
45. Zhang, J., 2017, “The Evolution of China's One-Child Policy and its Effects on Family Outcomes,” The Journal of Economic Perspectives, 31(1): 141-159.
Fig. 1. Timeline of China’s Family Panning Policy.
Fig. 2. Geographic distribution of accounting job posts.

Notes: a, Distribution of geotagged accounting posts applied for using our fictitious resumes. b, Distribution of all geotagged accounting jobs. The city-specific accounting post density ranges from 0 to 1,733 and is indicated by the color scale.
Fig. 3. The callback rate before and after the two fertility policies.

Notes: Mean differences in callback rate (%) before and after the two-child and three-child policies. The p-values reported in the inset table are derived from the t-tests of differences in the means.
**Fig. 4.** Callback rates in each month.

*Notes:* The colored lines show the monthly trend of overall callback rates and callback rates for each type of candidate. The vertical dotted lines indicate the announcement times of the new fertility policies.  

- **a,** The callback rates in each month before and after the universal two-child policy (January 2015-December 2016).
- **b,** The callback rates in each month before and after the universal three-child policy (June 2020-September 2021).
Fig. 5. The impact of fertility policy change on employment discrimination.

Notes: a, The impact of the two-child policy on callback rates. b, The impact of the three-child policy on callback rates. *p < 0.1, **p < 0.05, ***p < 0.01. The supporting regression results of these graphs are presented in Table 2, Table 3 and Table 4.
Fig. 6. The dynamic effects in four months before the policy.

Notes: a, The dynamic effects in four months before the Two-child policy. b, The dynamic effects in four months before the Three-child policy.
Fig. 7. Placebo test.

Notes: a, Placebo test of Two-child policy. b, Placebo test of Three-child policy.
Fig. 8. The heterogeneous effect of fertility policy on callback among different levels of firm scale, company ownership, and city development.

Notes: a, The impact of the two-child policy on callback rates. b, The impact of the three-child policy on callback rates. *p < 0.1, **p < 0.05, and ***p < 0.01. The supporting regression results of these graphs are presented in Table 5 and Table 6.
### Table 1
Proportion of sample in each type across different firm scales, company ownerships and city development levels.

| Sample               | Overall (1) | Single (2) | Married & no children (3) | Married & one child (4) | Married & two children (5) | Married & three children (6) | No information (7) |
|----------------------|-------------|------------|---------------------------|-------------------------|----------------------------|-----------------------------|--------------------|
| **Enterprise size**  |             |            |                           |                         |                            |                             |                    |
| 1-49                 | 36.94       | 38.1       | 36.26                     | 34.92                   | 39.18                      | 38.34                       | 35.48              |
| 50-99                | 18.91       | 17.55      | 20.7                      | 18.93                   | 19.73                      | 19.9                        | 17.11              |
| 100-499              | 28.79       | 27.53      | 29.28                     | 30.82                   | 24.29                      | 28.47                       | 32.32              |
| 500-999              | 6.23        | 6.91       | 5.93                      | 4.52                    | 7.08                       | 5.46                        | 7.04               |
| >1000                | 9.13        | 9.9        | 7.84                      | 10.81                   | 9.72                       | 7.83                        | 8.05               |
| **Property rights**  |             |            |                           |                         |                            |                             |                    |
| State-owned          | 17.01       | 16.85      | 17.12                     | 17.36                   | 16.93                      | 17.78                       | 16.42              |
| private              | 63.65       | 63.65      | 63.24                     | 62.59                   | 64.35                      | 64.44                       | 64                 |
| foreign              | 19.34       | 19.5       | 19.65                     | 20.05                   | 18.73                      | 17.78                       | 19.58              |
| **City hierarchy**   |             |            |                           |                         |                            |                             |                    |
| first-tier           | 41.47       | 39.81      | 41.09                     | 39.81                   | 42.9                       | 42.5                        | 43.24              |
| second-tier          | 27.58       | 27.07      | 27.64                     | 27.59                   | 26.85                      | 31.57                       | 26.82              |
| third-tier           | 30.95       | 33.13      | 31.27                     | 32.6                    | 30.25                      | 25.94                       | 29.94              |
| n                    | 13,751      | 2,575      | 2,565                     | 2,414                   | 2,499                      | 1,226                       | 2,472              |

*Note:* 13751 observations of two experiments in 2015-2016 and 2020-2021, which are divided into six types: single, married without children, married with one child, married with two children, married with three children and no information. Married with three children only exist in the experiment in 2020-2021.
Table 2
Causal Impacts of Fertility Policies on Callbacks.

| Sample | Two-child policy (2015-2016) | Three-child policy (2020-2021) |
|--------|-------------------------------|-------------------------------|
|        | (1)                           | (2)                           |
| TREAT  | -0.0284                       | 0.0739***                     |
|        | (0.0178)                      | (-0.0101)                     |
|        | [0.112]                       | [0.000]                       |
| POST   | -0.013                        | 0.6545***                     |
|        | (0.0535)                      | (-0.0511)                     |
|        | [0.809]                       | [0.000]                       |
| TREAT*POST | **-0.0487*** | **-0.0528***                 |
|        | (-0.0159)                     | (-0.008)                      |
|        | [0.003]                       | [0.024]                       |
| WAGE   | -0.0136***                    | -0.0133***                    |
|        | (-0.0048)                     | (-0.0033)                     |
|        | [0.006]                       | [0.000]                       |
| APPLICANTS | -0.00069                     | -0.00009***                   |
|        | (-0.00048)                    | (-0.00003)                    |
|        | [0.155]                       | [0.008]                       |

Year-month-date fixed effects | Yes | Yes
Time fixed effects | Yes | Yes
Weekday fixed effects | Yes | Yes
Industry fixed effects | Yes | Yes
City fixed effects | Yes | Yes
Enterprise size fixed effects | Yes | Yes
Property rights fixed effects | Yes | Yes

n | 6994 | 6757

\( R^2 \) | 0.108 | 0.1064

Notes: Estimates are based on equation (1) with LPM. Robust standard errors clustered at the city level are reported in bracket. P-values are also reported in parentheses. Control variables include wage and numbers of applicants, dummy variables for firm scale, firm ownership, city development level, as well as year-month-date fixed effects, time fixed effect, weekday fixed effects and city fixed effects. The first column is DID analysis for two-child policy, and the second column is DID analysis for three-child policy. The numbers of observations are 6,994 and 6,757 respectively. *p<0.1, **p<0.05, ***p<0.01.
Table 3
The impact of fertility policy change on employment discrimination across the marital status.

| Sample | single | Married no children | Married one child | No information |
|--------|--------|---------------------|------------------|---------------|
| (1)    | (2)    | (3)                 | (4)              |
| TREAT  | -0.0461** | -0.0401* | -0.0053 | -0.0338 |
|        | (-0.023) | (-0.0223) | (-0.0258) | (-0.0211) |
|        | [0.047]  | [0.075]   | [0.839]  | [0.110]  |
| POST   | 0.1334 | 0.0339 | 0.5549 | -0.5751*** |
|        | (-0.097) | (-0.0671) | (-0.3596) | (-0.1598) |
|        | [0.171]  | [0.614]   | [0.125]  | [0.000]  |
| TREAT*POST | **-0.0430** | **-0.0569*** | **-0.0556** | **-0.0451** |
|        | (-0.0188) | (-0.0214) | (-0.0211) | (-0.0221) |
|        | [0.024]  | [0.009]   | [0.010]  | [0.044]  |
| WAGE   | -0.0082** | -0.0233** | -0.0171* | -0.0244*** |
|        | (-0.008) | (-0.0105) | (-0.0087) | (-0.0078) |
|        | [0.306]  | [0.028]   | [0.052]  | [0.002]  |
| APPLICANTS | -0.0002*** | -0.0002** | -0.00013* | -0.00009 |
|        | (-0.00006) | (-0.00007) | (-0.00008) | (-0.00008) |
|        | [0.002]  | [0.011]   | [0.083]  | [0.284]  |

Year-month-date fixed effects
- Yes
Time fixed effects
- Yes
Weekday fixed effects
- Yes
Industry fixed effects
- Yes
City fixed effects
- Yes
Enterprise size fixed effects
- Yes
Property rights fixed effects
- Yes

\[ n \]
- 2842
- 2842
- 2745
- 2759

Pseudo \( R^2 \)
- 0.2236
- 0.208
- 0.1978
- 0.2338

Notes: Estimates are based on equation (1) with LPM. Robust standard errors clustered at the city level are reported in bracket. P-values are also reported in parentheses. Control variables include wage and numbers of applicants, dummy variables for firm scale, firm ownership, city development level, as well as year-month-date fixed effects, time fixed effect, weekday fixed effects and city fixed effects. The columns under “2015-2016” is DID analysis for two-child policy, and the columns under “2020-2021” is DID analysis for three-child policy. The numbers of observations are 6,994 and 6,757 respectively. *p<0.1, **p<0.05, ***p<0.01.
Table 4
The impact of fertility policy change on employment discrimination across the marital status.

| Sample            | Single (5) | Married no children (6) | Married one child (7) | Married two children (8) | No information (9) |
|-------------------|------------|-------------------------|-----------------------|--------------------------|--------------------|
| TREAT             | 0.0364***  | 0.0560***               | 0.0627***             | 0.1403***                | 0.0819***          |
| (0.0133)          | (-0.0176)  | (-0.0153)               | (-0.0155)             | (-0.0172)                |                    |
| [0.007]           | [0.002]    | [0.000]                 | [0.000]               | [0.000]                  |                    |
| POST              | -0.0051    | 0.2446***               | -0.7784***            | 1.1409***                | 0.5598***          |
| (-0.0952)         | (-0.0599)  | (-0.0951)               | (-0.0958)             | (-0.0766)                |                    |
| [0.007]           | [0.000]    | [0.000]                 | [0.000]               | [0.000]                  |                    |
| TREAT*POST        | -0.0347    | -0.032                  | -0.0339               | -0.1035***               | -0.0658**          |
| (-0.0217)         | (-0.0326)  | (-0.0255)               | (-0.0224)             | (-0.0284)                |                    |
| [0.113]           | [0.328]    | [0.186]                 | [0.000]               | [0.022]                  |                    |
| WAGE              | -0.002     | -0.0046                 | -0.0128**             | -0.0145***               | -0.0146***         |
| (-0.0055)         | (-0.0041)  | (-0.0049)               | (-0.005)              | (0.00269)                |                    |
| [0.718]           | [0.260]    | [0.010]                 | [0.004]               | [0.000]                  |                    |
| APPLICANTS        | -0.00013***| -0.00007                | -0.00007              | -0.0001                  | -0.00002           |
| (-0.00004)        | (-0.00005) | (-0.00005)              | (-0.00006)            | (-0.000005)              |                    |
| [0.000]           | [0.184]    | [0.144]                 | [0.101]               | [0.607]                  |                    |

Year-month-date fixed effects | Yes | Yes | Yes | Yes | Yes |
Time fixed effects | Yes | Yes | Yes | Yes | Yes |
Weekday fixed effects | Yes | Yes | Yes | Yes | Yes |
Industry fixed effects | Yes | Yes | Yes | Yes | Yes |
City fixed effects | Yes | Yes | Yes | Yes | Yes |
Enterprise size fixed effects | Yes | Yes | Yes | Yes | Yes |
Property rights fixed effects | Yes | Yes | Yes | Yes | Yes |
\(n\) | 2357 | 2347 | 2293 | 2327 | 2337 |
\(Pseudo R^2\) | 0.2181 | 0.183 | 0.1709 | 0.2611 | 0.2031 |

Notes: Estimates are based on equation (1) with LPM. Robust standard errors clustered at the city level are reported in brackets. P-values are also reported in parentheses. Control variables include wage and numbers of applicants, dummy variables for firm scale, firm ownership, city development level, as well as year-month-date fixed effects, time fixed effect, weekday fixed effects and city fixed effects. The columns under “2015-2016” is DID analysis for two-child policy, and the columns under “2020-2021” is DID analysis for three-child policy. The numbers of observations are 6,994 and 6,757 respectively. *p<0.1, **p<0.05, ***p<0.01.
Table 5
The heterogeneous effect of Two-child policy on callback among different firm scales, company ownerships and city development levels.

| Two-child policy (2015-2016) | Sample | 1-49 | 50-99 | 100-499 | 500-999 | >1000 | State-owned | private | foreign | first-tier | second-tier | third-tier |
|-----------------------------|--------|------|-------|---------|---------|-------|------------|---------|---------|-----------|------------|-----------|
| TREAT                       |        |      |       |         |         |       |            |         |         |           |            |           |
| POST                        |        |      |       |         |         |       |            |         |         |           |            |           |
| WAGE                        |        |      |       |         |         |       |            |         |         |           |            |           |
| APPLICANTS                  |        |      |       |         |         |       |            |         |         |           |            |           |
| Year-month-date fixed effects |      | Yes  | Yes   | Yes     | Yes     | Yes   | Yes        | Yes     | Yes     | Yes       | Yes        | Yes       |
| Time fixed effects          |        | Yes  | Yes   | Yes     | Yes     | Yes   | Yes        | Yes     | Yes     | Yes       | Yes        | Yes       |
| Weekday fixed effects       |        | Yes  | Yes   | Yes     | Yes     | Yes   | Yes        | Yes     | Yes     | Yes       | Yes        | Yes       |
| Industry fixed effects      |        | Yes  | Yes   | Yes     | Yes     | Yes   | Yes        | Yes     | Yes     | Yes       | Yes        | Yes       |
| City fixed effects          |        | Yes  | Yes   | Yes     | Yes     | Yes   | Yes        | Yes     | Yes     | Yes       | Yes        | Yes       |
| Enterprise size fixed effects |      | No   | No    | No      | Yes     | Yes   | Yes        | Yes     | Yes     | Yes       | Yes        | Yes       |
| Property rights fixed effects |    | Yes  | Yes   | Yes     | Yes     | Yes   | Yes        | Yes     | Yes     | Yes       | Yes        | Yes       |
| n                           |        | 2534 | 1310  | 2030    | 451     | 669   | 1182       | 4443    | 1369    | 2882      | 1868       | 2244      |
| Pseudo R²                   |        | 0.1619 | 0.5133 | 0.255 | 0.5566 | 0.5617 | 0.3627 | 0.1095 | 0.318 | 0.0659 | 0.123 | 0.2138 |

Notes: Estimates are based on equation (1) with LPM. Robust standard errors clustered at the city level are reported in bracket. P-values are also reported in parentheses. Control variables include wage and numbers of applicants, dummy variables for firm scale, firm ownership, city development level, as well as year-month-date fixed effects, time fixed effect, weekday fixed effects and city fixed effects. The enterprise scale is divided into five categories according to the size of employees: 1-49, 50-99, 100-499, 500-999 and more than 1000. The enterprise property rights are divided into three categories: state-owned, private and foreign capital, and the city level is divided into three categories: first tier, second tier and third tier cities. The columns under “2015-2016” is DID analysis for two-child policy and the numbers of observations is 6,994. *p<0.1, **p<0.05, ***p<0.01.
The heterogeneous effect of Three-child policy on callback among different firm scales, company ownerships and city development levels.

### Table 6

| Sample | 1-49 | 50-99 | 100-499 | 500-999 | >1000 | State-owned | private | foreign | first-tier | second-tier | third-tier |
|--------|------|-------|---------|---------|-------|-------------|---------|---------|------------|-------------|------------|
| (1)    | -0.0645*** | -0.0683*** | -0.0755*** | 0.0773 | -0.0813 | -0.0686** | 0.0743*** | 0.0771*** | 0.0689*** | -0.0734*** | 0.0752*** |
| (2)    | (-0.0146) | (-0.0223) | (-0.0191) | (-0.0541) | (-0.0491) | (-0.029) | (-0.0115) | (-0.0247) | (-0.0173) | (-0.0143) | (-0.0213) |
| (3)    | (0.000) | (0.003) | (0.0102) | (0.010) | (0.0020) | (0.000) | (0.002) | (0.004) | (0.000) | (0.000) | (0.001) |
| POST   | -0.326*** | 0.5863 *** | 0.0976 | 0.2925 | -1.687** | -0.8565** | -0.0804* | -0.1632 | 0.6323*** | -0.9009*** | -0.0665 |
| (4)    | (-0.121) | (-0.2729) | (-0.1024) | (-0.1958) | (-0.4259) | (-0.4265) | (-0.0476) | (-0.2441) | (-0.0583) | (-0.1046) | (-0.1866) |
| (5)    | (0.008) | (0.034) | (0.342) | (0.141) | (0.000) | (0.048) | (0.095) | (0.506) | (0.000) | (0.000) | (0.722) |
| TREAT*POST | -0.0508** | -0.0548 | -0.0485 | -0.0935 | -0.0360 | -0.0924** | -0.0449* | -0.0153 | -0.0367 | -0.0667*** | -0.0566* |
| (6)    | (-0.0248) | (-0.0341) | (-0.0295) | (-0.0614) | (-0.0709) | (-0.0445) | (-0.0244) | (-0.0334) | (-0.0441) | (-0.0219) | (-0.0302) |
| (7)    | (0.044) | (0.112) | (0.103) | (0.133) | (0.604) | (0.041) | (0.070) | (0.649) | (0.396) | (0.004) | (0.064) |
| (8)    | (0.327) | (0.101) | (0.094) | (0.267) | (0.781) | (0.662) | (0.000) | (0.994) | (0.058) | (0.019) | (0.001) |
| WAGE   | -0.021*** | -0.0198** | -0.0077* | -0.0391 | -0.0029 | -0.0049 | -0.014*** | -0.0005 | -0.0089* | -0.0132** | -0.028*** |
| (9)    | (-0.0056) | (-0.0075) | (-0.0045) | (-0.0349) | (-0.0103) | (-0.0113) | (-0.0038) | (-0.0066) | (-0.0041) | (-0.0054) | (-0.0079) |
| (10)   | (0.000) | (0.010) | (0.094) | (0.267) | (0.781) | (0.662) | (0.000) | (0.994) | (0.058) | (0.019) | (0.001) |
| APPLICANTS | -0.00008 | -0.00001 | -0.00011 | -0.0002 | -0.0004 | -0.00039*** | -0.000007 | -0.00007 | -0.000015 | -0.00004 |
| (11)   | (-0.0001) | (-0.0001) | (-0.0001) | (-0.0002) | (-0.0003) | (-0.00016) | (-0.00001) | (-0.0003) | (-0.0001) | (-0.0001) | (-0.0001) |
| (12)   | (0.258) | (0.897) | (0.162) | (0.311) | (0.187) | (0.013) | (0.120) | (0.951) | (0.036) | (0.106) | (0.750) |
| Year-month-date fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Time fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Weekday fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| City fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Enterprise size fixed effects | No | No | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes |
| Property rights fixed effects | Yes | Yes | Yes | Yes | No | No | No | Yes | Yes | Yes | Yes |
| \(n\) | 2546 | 1290 | 1929 | 406 | 586 | 1157 | 4309 | 1291 | 2820 | 1925 | 2012 |
| Pseudo \(R^2\) | 0.168 | 0.3159 | 0.2354 | 0.4604 | 0.5606 | 0.3604 | 0.1137 | 0.3208 | 0.076 | 0.153 | 0.226 |

Notes: Estimates are based on equation (1) with LPM. Robust standard errors clustered at the city level are reported in bracket. P-values are also reported in parentheses. Control variables include wage and numbers of applicants, dummy variables for firm scale, firm ownership, city development level, as well as year-month-date fixed effects, time fixed effect, weekday fixed effects and city fixed effects. The enterprise scale is divided into five categories according to the size of employees: 1-49, 50-99, 100-499, 500-999 and more than 1000. The enterprise property rights are divided into three categories: state-owned, private and foreign capital, and the city level is divided into three categories: first tier, second tier and third tier cities. The columns under “2015-2016” is DID analysis for three-child policy and the numbers of observations is 6,751. \(p<0.1, \quad *p<0.05, \quad ***p<0.01.\)
Appendix
Supplementary documents

A1. Email of interview invitation

Thank you very much for your trust. Is it convenient for a video interview at 9 o'clock tomorrow morning?
A2. Email of rejecting interview invitation

I am sorry, but I have found another job. Thank you for your appreciation. I wish your company to find another suitable employee.
A3. Cover letter

Dear HR manager

I learned the recruitment information of your company's accounting position on 58.com. After carefully reading the job requirements of your company and comparing my own abilities and advantages, I think I am competent for this job.

In 2014, I graduated from Beijing Industrial and Commercial University with a bachelor's degree, and successively engaged in accounting in Beijing Jingtang Shengshi Meihua Trading Co., Ltd. and Beijing Weichuang Tyco Biotechnology Co., Ltd. Over the past five years, I have continuously enriched my team cooperation experience, improved my professional knowledge level, familiar with the establishment of financial system, financial system and the establishment and training of a professional financial team. As an accounting professional, I can independently complete the accounting treatment of the overall account, be familiar with the current account and prepare various statements; Understand relevant national tax laws and regulations, and be able to carry out reliable tax planning for the company; Proficient in word, Excel and other office software and EPR, gold disc and other related financial software; The project has rich experience and has realized profit generation for the company.

I think I am very suitable for this job. If I get a job opportunity, I can quickly enter the post and serve the company wholeheartedly. The attachment is my resume. I hope to get your attention and reply.

Applicant: XXX

yyyy-MM-dd
Name

Tel: (+86) XXXXXXXX  | Email: XXXXXX@163.com

INTRODUCTION

- **Nationality:** Han  
  **Age:** 30  
  **Native Place:** Anyang, Henan
- **Job Intention:** Accounting/Finance  
  **Target Location:** Unlimited  
  **Expected Salary:** Unlimited
- **Marital status:** single  
  **Birth status:** no child
- **Honors:** 2010-2011 Outstanding Student Cadre, 2011-2012 Advanced Individual, 2011-2012 First-class Scholarship; 2012-2013 First-class Scholarship, 2017 Outstanding Employee of Beijing Vicontec Biotechnology Co., LTD.
- **Language Skills:** CET-4:534|CET-6:511; Putonghua Level II, Grade A
- **Professional skills:** Proficient in ERP, SAP; Accounting Qualification Certificate, Junior Accountant Certificate
- **Computer skills:** Computer Level 2 Certificate (Access); Proficient in Office, especially Excel and PPT
- **Hobbies:** Guitar, Vocal music, Badminton, Volleyball, Urban Cycling, Volunteer

EDUCATION

**Beijing Technology and Business University, Business School, Major in Accounting**  
**Sept.2010-June.2014**

- **Degree:** Undergraduate
- **Core Courses:** Accounting, Economic Law, Intermediate Financial Accounting, Cost and Management Accounting, Auditing, Accounting Information System and Experiment, Senior Financial Accounting

WORKING EXPERIENCE

**Beijing Vicontec Biotechnology Co., LTD. Accounting Supervisor(4 subordinates)**  
**Beijing**  
**Aug.2016-Sept.2019**

- Daily work: formulated the annual and monthly work objectives and plans of the financial Department, improved the financial system and financial workflow, coordinated and guided the work with other departments
- Financing: provided different feasible financing schemes, and successfully applied for 5 loans for the company
- Tax support: proposed two reliable tax planning schemes and reduced tax burden to increase net profit
- Statement Preparation: responsible for the audit of related voucher expenses, and prepared monthly/quarterly/annual financial reports in English and Chinese regularly

**Beijing Jingrang Shengshi Meihua Trading Co., LTD. Assistant Accountant**  
**Beijing**  
**Aug.2014-May.2016**
• Responsible for the overall internal and external accounting, including filling in accounting vouchers according to the original vouchers, accounting costs, wages. Prepared detailed statements of input and sales (consumption) savings, and responsible for bank turnover business, accounting and settlement of current funds
• Issued invoices, arranged and kept daily documents, completed the procedures and updated the database
• Declared and paid value-added tax, individual income tax, stamp tax, etc., and filled tax documents

**PROJECT EXPERIENCE**

*Financial Structure Improvement Project of Beijing Vicontec Biotechnology Co., LTD.*  
Feb.2018-Aug.2019

• Applied accounting computerization to manage the accounts receivable and accurately published the details. Introduced alarm system for account more than three months, finally recovered the company's bad debt loss of 300,000 yuan
• Assisted to expand to Hunan and Henan provinces successively, which increased revenue from 8 million to 20 million
• In my job tenure, thanks to a sound financial system, optimized structure, timely declaration, etc., and a thorough understanding of national policies, I saved profits and taxes for the company in the past three years

*Audit Project of Zunma Automobile Pipe Fittings Co., LTD. Neeq Listing*  
April.2015-Oct.2015

• Audited firm is a leading supplier of stainless-steel pipe fittings for gasoline engine fuel distribution system of cars in China. Audited the company's listing on Neeq and issued a report for the brokerage to declare
• Responsible for the audit of monetary capital, expense, and income related subjects. Assisted to complete relevant manuscripts and collated the manuscripts in the later stage, completed the audit and help company listing successfully.

**OTHER INFOEMATION**

• Able to join within 2 weeks

• **Personal Evaluation:** Professional ethics of accounting; Familiar with current accounts; Familiar with national tax laws and regulations, Able to make effective planning; Good at communication; Strong sense of responsibility.