A Grand Reshuffling: The One-Child Policy and Intergenerational Mobility in China

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We identify the causal impact of China's One-Child Policy (OCP) on intergenerational mobility using data on 2,096,978 child-parent pairs from ten national surveys. Leveraging exogenous variation across provinces in fines for OCP violations with a continuous difference-in-differences approach, we present novel evidence that the OCP reduced intergenerational persistence for cohorts born between 1980 and 1996, compared to before 1979, by 28.1% for income, 52.2% for education, and 24.5% for social class. Mechanism analysis indicates that the OCP's effect on intergenerational mobility stems from the decrease in elite-family heirship, resource concentration in low-income households, and the narrowing of skill-based wage disparities.

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Do those gentry certainly have blue blood?—A well-known uprising slogan by Chen Sheng in 209 B.C., recorded in *Historical Records, the Hereditary House of Chen She*[1]

Intergenerational mobility, the capacity of individuals to change their socioeconomic status during their lifetime independent of their family background,

[1] Chen Sheng was a well-known leader of a large peasants' revolt. This sentence in Chinese is *wang hou jiang xiang ning you zhong hu* (王侯将相，宁有种乎?), expressing the idea that insufficient intergenerational mobility has led to people's dissatisfaction and prompted them to rise up and overthrow the existing regime. *Historical Records* were written by Sima Qian during 104–118 B.C. They are the representative of the Chinese ancient books and have been widely passed down through the generations.pub

plays a crucial role in promoting key aspects of economic development, such as equality of opportunity, human capital development, and social cohesion (Chetty et al. 2014; Bell et al. 2019). Parental resources significantly influence early-life environment and investment in children, which are fundamental determinants of intergenerational mobility (Black and Devereux 2011; Chetty and Hendren 2018a). Public policies influencing the allocation of parental resources can thus serve as effective tools for enabling children from less advantaged families to compete on an equal footing with those from more privileged backgrounds (Corak 2013).

China's One-Child Policy (OCP), implemented in 1979 with strict penalties and fines for noncompliance, led to a substantial shift in family structure from a norm promoting multiple children to a single-child norm, unintentionally concentrating parental resources within millions of households (e.g., Ebenstein 2010).[2,3] Historically, low intergenerational mobility has been linked to uprisings and regime changes, suggesting a potential connection between mobility and stability (Bian 2002; Qin, Wang, and Zhuang 2016).[4] Previous shifts in power and wealth distribution occurred during regime changes, resulting in reshuffling of social classes and temporary increases in mobility (Tanner and Feder 1993; Schmidt-Glinted and Jansen 1994; Lipset and Bendix 2018).[5] However, since 1979, China has experienced a notable rise in intergenerational mobility, as depicted in Figure 1, without uprisings or regime shifts. This raises the possibility that concurrent policy interventions may have indirectly impacted mobility. Understanding the underlying causes of this mobility surge can, therefore, inform policy-based

[2] The historical practice of large families in China has been associated with poor intergenerational mobility (Ebery 1978; Scharping 2013; Clark 2014). The promotion of pronatalist ideals in elite culture in China encouraged the formation of large families through the traditions of familism (*chuan cheng xiang huo*) and offspring abundance (Ebery 1978; Scharping 2013). Leaders of large families typically pool resources and focus them on top candidates from each generation in order to ensure the professional success of them; the successful candidates then had to reciprocate by supporting the family (Clark 2014).

[3] Ebenstein (2010) demonstrates that while the OCP was successful in lowering the fertility rate, an unintended side effect was that it exacerbated the country's distorted sex ratio and the "missing girl" phenomenon (Sen 1990).

[4] Intergenerational-income-elasticity estimates for many nations are shown in Table 1 of Qin, Wang, and Zhuang (2016) based on the research of a number of academics.

[5] Usually over time, social mobility would tend to decline again, as the new ruling class consolidated their power and wealth (e.g., Lipset and Bendix 2018).

alternatives to cycles of revolution and class solidification, fostering a more just and prosperous society.

[Insert Figure 1 here]

In this study, we leverage the OCP shock to the distribution of parental resources to present rigorous causal evidence of its impact on intergenerational mobility. The construction of a novel large-scale dataset enables us to explore the underlying mechanisms driving this effect, providing valuable insights into the potent role of public policies in shaping mobility outcomes.

We use a continuous difference-in-differences approach to investigate the causal effect of the OCP on intergenerational mobility in income, education, and social class. [6] Our analysis utilizes *rank-rank* regression models, which identify intergenerational persistence as the correlation between parents' and children's ranks within their cohort (Chetty et al. 2014). To isolate the impact of the OCP, we leverage plausibly exogenous variation in the province-level fine rates imposed on parents for violating the policy.[7] We implement this identification strategy on a comprehensive dataset comprising 2,096,978 observations across birth cohorts from 1949 to 1996, which we construct from ten different sources.[8] This sample size enables us to control for age and mitigate lifecycle bias, a common challenge in intergenerational mobility studies (Chetty et al. 2014; Emran and Shilpi 2019), while also allowing us to explore the underlying mechanisms.

We find robust evidence that mandating smaller families increased intergenerational mobility in China. The OCP reduced intergenerational persistence

[6] Based on an individual's governmental position and annual income range, we divide one's social class into one of five categories—high, middle-high, middle, middle-lower, or lower class. Section 3.2 contains more information.

[7] It is a well-established approach in the literature to use monetary fines as a proxy for the strength of the OCP; although the policy may include various administrative measures, such as the loss of party membership or employment, scholars argue that the monetary fine is still a reliable indicator because stricter policies frequently come with higher fines (Hardee-Cleaveland and Banister 1988; McElroy and Yang 2000; Li, Zhang, and Zhu 2005; Ebenstein 2010; Liu 2014; Huang, Lei, and Zhao 2016; Huang, Lei, and Sun 2021; Huang, Pan, and Zhou forthcoming). We discuss the exogeneity of the variations in the monetary fines in Section 2.2.

[8] We limit our analysis to this period because the 1949 is the year when the People's Republic of China was founded, and 1996 is the last year in which individuals in our sample had not yet reached the minimum wage-earning age.

in average income, education, and social class by 28.1%, 52.2%, and 24.5%, respectively, for cohorts born between 1980 and 1996, compared to those born before 1979. To our knowledge, this positive impact of the OCP on intergenerational mobility in China has not been previously documented.

We establish the robustness of our causal identification strategy through three key approaches. Firstly, our main identification assumption is exogeneity of the fine rates imposed by different provinces for violations of the OCP. To bolster the validity of this identification assumption, we demonstrate parallel pre-trends, conduct placebo tests, and show that the fine rates are uncorrelated with other province-level outcomes such as inequality. Importantly, we also show that there is no meaningful evidence for treatment effect heterogeneity, which is a potential threat to identification because our difference-in-differences approach is continuous, following Callaway, Goodman-Bacon, and Sant'Anna (2021). Secondly, we show that the results are robust to using an instrumental variable for the provincial fine rates based on the average age of provincial government leaders.[9] Younger officials were more likely to enforce the OCP because of promotion incentives (Huang, Lei, and Sun 2021), creating a negative correlation between fine rates and the average age of government leaders. We justify the exclusion restriction for the IV strategy in Section 2.2. Thirdly, we show that results are similar when we use a border discontinuity design that allows us to disentangle the effects of the OCP from other province-level differences that could potentially confound the main difference-in-differences specification.

We find consistent evidence across these three identification strategies that the OCP reduces intergenerational persistence. Our findings are also robust to numerous other checks, such as examining alternative measures of the variables, considering other policy changes in China during the same period, and conducting

[9] Specifically, we look at provincial party standing committees, which are the primary leadership bodies that oversee politics and policymaking in China's provinces. Each standing committee has a dozen or so members, typically including the provincial party secretary, governor, vice governors, and secretary of political and legal committee (Bulman and Jaros 2020).

a weighting exercise to assess external validity.[10]

After establishing the OCP's decreasing effect on intergenerational persistence, we explore underlying mechanisms using our extensive dataset. Drawing on a theoretical model that generates testable hypotheses (Appendix B5), our findings provide empirical support for three key channels. Firstly, the OCP reduced child number and assortative mating among the elite, leading to a weakened concentration of wealth and power at the upper echelons of the income distribution. Secondly, the OCP most significantly concentrated resources among lower-income groups, which in turn increased parental investment in children, both in terms of formal education and non-cognitive skills. Thus, the OCP facilitated upward mobility at the lower end of the income distribution. Lastly, by reducing labor supply, the OCP narrowed the wage gap between higher- and lower-skilled occupations, further fostering upward mobility for individuals in lower-income brackets.

This paper makes five primary contributions. Firstly, we provide well-identified causal evidence to shed light on the role of parental resources in intergenerational mobility. Previous research has highlighted the negative association between resource dilution in larger families and fewer opportunities for children's upward mobility due to constraint resources and less maturity among household members (Ajami 1969; Sloan and Theodossiou 1996; Black, Devereus, and Salvanes 2005a; Kulu 2008; Gould, Simhon, and Weinberg 2020). However, credible causality analysis was lacking in these studies. Our results strengthen these previous findings by leveraging the stringent and exogenous shock of the OCP, avoiding data limitations and endogeneity concerns that hampered prior research (Black, Devereux, and Salvanes, 2005b; Van Bavel et al., 2011).

Secondly, we provide evidence for credible mechanisms through which the OCP

[10] For example, we examine the potential confounding impact of contemporaneous educational policies and explore the heterogeneity in OCP enforcement within provinces (Section 5.2.4). We also assess the heterogeneity of the OCP's effect on different subgroups, such as daughters versus sons, rural residents versus urban dwellers, Han versus non-Han ethnic groups, and children from parents in different quartiles (Section 5.2.7).

increased intergenerational mobility, leveraging the large-scale dataset we construct.[11] The substantial size of our dataset ensures adequate statistical power to substantiate parental resource allocation as a key mechanism driving the OCP's effect on intergenerational mobility, extending the fertility-differentiation mechanism usually studied in population policy research (e.g., Pritchett and Summers 1994) by including more precise and specific intermediates, such as declining elite-family heirship, resource concentration in poor families, and decreasing returns to education.[12] By overcoming limitations faced by previous studies, such as small sample sizes (Emran, Greene, and Shilpi 2018; Emran and Shilpi 2019), life-cycle bias (Chetty et al. 2014), and sensitivity to sample selection criteria (Couch and Lillard 1998; Qin, Wang, and Zhang 2016), our extensive dataset strengthens the empirical basis for these mechanisms.[13]

Thirdly, we advance understanding of how institutions affect geographic disparities in long-term economic outcomes. Prior studies have documented geographic disparities (Acemoglu, Johnson, and Robinson 2002; Dell 2010; Chetty et al. 2014; Clark 2014; Olivetti and Paserman 2015; Chetty and Hendren 2018b; Donaldson 2018; Dell and Olken 2020), but few have provided compelling causal evidence of the factors driving such differences. This paper finds convincing

[11] The dataset, comprising 2,096,978 observations spanning five decades, is comparable in size to the typical administrative data used in research on developed-country mobility (e.g., Alesina, Stantcheva, and Teso 2018; Feigenbaum 2018), but rare in developing-country mobility studies. Among recent papers on developing-country mobility, Mohammed (2019) uses single-year income data totaling 1,779 observations for parent-child pairs to estimate intergenerational mobility in rural India; Fan, Yi, and Zhang (2021) analyze the trend in intergenerational income elasticity in China by comparing two cohorts: an "early cohort" consisting of individuals born between 1970 and 1980 (10,980 observations) and a "late cohort" comprising individuals born between 1980 and 1988 (11,333 observations), totaling 22,313 observations; and Yu, Fan, and Yi (2021) explore the influence of fertility variation arising from the OCP on intergenerational mobility based on a sample of 25,618 observations. As depicted in Figure A1, the dataset constructed for this study substantially expands the data size compared to earlier studies examining mobility in developing countries.

[12] In the context of intergenerational mobility, previous studies have explored various mechanisms to understand the factors influencing socioeconomic outcomes across generations. These mechanisms encompass both nature-based factors, such as genetic inheritance (Anger and Heineck 2010; Grönqvist, Öckert, and Vlachos 2017), and nurture-based factors, including parental investment and upbringing (Black, Devereux, and Salvanes 2005a; Fagereng, Mogstad, and Rønning 2021). Additionally, researchers have examined the role of ethnic capital (Borjas 1992), redistribution preferences (Alesina, Stantcheva, and Teso 2018), neighborhood effects (Chetty and Hendren 2018a, b), and financial behaviors (Black et al. 2020) in shaping intergenerational mobility.

[13] Previous literature on the mechanisms underlying the intergenerational transmission of socioeconomic status includes nature (Grönqvist, Öckert, and Vlachos 2017) versus nurture effects (Fagereng, Mogstad, and Rønning 2021), ethnic capital (Borjas 1992), redistribution preferences (Alesina, Stantcheva, and Teso 2018), the neighborhood effect (Chetty and Hendren 2018a, b), financial behaviors (Black et al. 2020), and differential fertility (Yu, Fan, and Yi 2021).

evidence that the OCP has stronger causal effects in regions with more robust institutional support, suggesting that institutions play a causal role in driving geographic disparities in policy outcomes. This finding aligns with the research of Althoff and Reichardt (2022), who find that persistent socioeconomic effects on slave-descended families were greater in states with more stringent Jim Crow institutions. These findings highlight the importance of taking institutional factors into account to comprehend geographic variations in mobility.

Our fourth contribution is being the first, to our knowledge, to demonstrate that the OCP, which stands as the largest population planning program in history (e.g., Ebenstein 2010), increased intergenerational mobility. This novel finding is made possible by constructing an extensive dataset to overcome data limitations. The only other study on a similar topic finds that the OCP reduced intergenerational mobility using an identification strategy based on rural-urban enforcement disparities, but with a limited sample size of 110 observations at the province level (Yu, Fan, and Yi 2021). In contrast, our individual-level dataset, much larger in size, enables a more rigorous causal identification strategy, extensive robustness checks, and more precise measures of individuals' rankings within single-year birth cohorts, as opposed to using uneven and irregular 3- or 10-year birth cohorts as done in their study due to data insufficiency.[14]

Finally, this research adds to the literature on the effects of the OCP in China. Previous studies have documented the direct effects of the policy, such as the decline in fertility rate (Poston Jr. and Gu 1987; Li, Yi, and Zhang 2011) and the increase in the sex ratio at birth (i.e., the "missing women" phenomenon; Ebenstein 2010). However, the policy's indirect effects on parental behavioral responses and human capital accumulation have been less studied. Our sizeable dataset and

[14] Moreover, their study relies on the China Family Panel Survey and China Health and Retirement Longitudinal Study with a 21% baseline refusal rate (Zhao et al. 2013; Xie and Hu 2014), while our census-based sample covers a larger population with a negligible survey refusal rate as it is mandatory. We find similar results to Yu, Fan, and Yi (2021) when focusing on the two surveys used by them alone, but our study augments this by incorporating eight additional datasets, including other longitudinal data and census data.

multiple identification strategies allow us to provide evidence that the OCP alters parental investment in children, shedding light on the broader impact of the policy beyond its immediate consequences.

The rest of the paper is structured as follows. Section 1 provides the historical context of the OCP and explains the calculation of fine rates. It also presents data on intergenerational mobility for one-child families. In Section 2, we discuss the construction of the dataset and provide descriptive statistics. The empirical strategy is outlined in Section 3. Section 4 presents the main findings and robustness tests. Section 5 presents empirical evidence related to the underlying mechanisms. Finally, Section 6 concludes the paper.

1. Background

In this section, we contextualize the One-Child Policy (OCP) by providing an overview of its institutional framework and the formulation of OCP fines by provinces. We then explore the link between fertility and intergenerational mobility.

1.1. The institutional background of the One-Child Policy

After decades of promoting higher birth rates, the Chinese Communist Party (CCP) initiated measures to control population growth in the 1970s. The primary motivation was to alleviate the strain on limited resources and sustain economic development (Ebenstein 2010). In 1979, the CCP introduced the OCP as a mandatory nationwide measure, allowing married couples to have only one child and imposing penalties on violators (Banister 1987; Scharping 2013).[15] Financial penalties were considered a powerful deterrent, and Vice Premier Chen Muhua advocated for increasing the severity of fines at the beginning of the OCP (Huang,

[15] China's OCP was first announced in 1978 and was enshrined in the amended constitution in 1982 (Zhang 2017; Huang, Pan, and Zhou forthcoming).

Lei, and Sun 2021). Provincial governments were instructed to implement these penalties uniformly (Scharping 2013; Huang, Pan, and Zhou forthcoming).

However, public resistance and concerns regarding social stability arose, prompting the central government to revise penalty rules and grant provincial governments the authority to set their own fine rates through documents issued in 1982 and 1984 (Gu et al. 2007; Huang, Lei, and Sun 2021).[16,17] This flexibility in fine rates led to a lack of enforcement and an increase in unauthorized births (Zhang 2017). Towards the late 1980s, as the promotion of local officials became tied to fertility control, the central government emphasized the importance of limiting population growth (Birney 2014). In 1990, local officials were required to report the average number of children per woman in their regions, and birth control was listed as a core provincial mission in the Eighth Five-Year Plan (Gu et al. 2007; Birney 2014). The central government employed the responsibility system to incentivize provincial officials to set higher penalty rates, resulting in a significant increase in fine rates between 1989 and 1992 (Figure A2; Huang, Lei, and Sun 2021).[18]

The OCP had a substantial impact, lasting for 36 years until its discontinuation in December 2015. It is widely acknowledged as a key factor in China's decline in fertility rates (Lavely and Freedman 1990; Yang and Chen 2004; Li, Zhang, and Zhu 2005; Ebenstein 2010). In our sample, the fertility rate dropped from 2.6 children per woman in 1978 to 1.8 at the end of the 1980s (Table A1).

1.2. OCP fine rates across provinces

The implementation of the OCP in China varied among provinces, as local

[16] The Guangdong provincial government received over 5,000 letters complaining about or protesting the OCP's implementation, raising concerns about social stability (Huang, Lei, and Sun 2021).

[17] Document 11 in 1982 allowed provincial governments to issue specific and locally tailored regulations. Document 7 in 1984 stated that birth control regulations would be developed in accordance with local conditions and approved by the provincial Standing Committee of the People's Congress and provincial governments (Gu et al. 2007).

[18] The average fine rate jumping from 1.0 times the average household's annual income to 2.8 times.

governments were authorized to establish specific fertility regulations. This resulted in significant variation in policy enforcement over time. To assess the strength of OCP implementation, the level of fines for policy violations was used as a reliable proxy, as previous research has consistently shown that stricter enforcement and higher fines were associated with lower fertility rates and smaller family sizes (McElroy and Yang 2000; Gu et al. 2007; Ebenstein 2010; Scharping 2013). In this study, we adopt a similar approach to previous research (Ebenstein 2010; Wei and Zhang 2011; Huang, Lei, and Zhao 2016; Huang, Lei, and Sun 2021; Huang, Pan, and Zhou forthcoming) and measure the strength of OCP implementation at the provincial level by utilizing the average monetary penalty for one unauthorized birth, standardized by multiples of the average annual household income. Consequently, higher fine rates indicate a stronger deterrent effect and are assumed to reflect more effective OCP implementation.[19]

To visualize fine rate patterns, Figures A2 and A3 depict chronological and geographical variations from 1979 to 2000. The relationship between fine rates and political prospects of provincial officials is crucial. Starting in 1989, the central government made population control a core appraisal indicator for provincial officials, leading to substantial fine rate increases in 16 out of 30 provinces. This period also witnessed 16 of the 21 significant fine increases in the OCP's history (Huang, Lei, and Sun 2021; Huang, Pan, and Zhou forthcoming). These findings suggest a close association between the temporal trend across provinces and the impact on the political prospects of provincial officials.

The variation in fine rates among provinces may have been influenced by the promotion incentives for provincial officials. Younger provincial governors were more likely to increase fines and had a higher likelihood of promotion (Huang, Lei, and Sun 2021). Some governors who enforced higher fines were rewarded with influential positions within the Communist Party (Huang, Pan, and Zhou

[19] See Appendix III of Ebenstein (2010) for detailed calculation.

forthcoming). The age and year of inauguration of provincial governors appeared to influence their motivation to increase fine rates (Huang and Li 2015; Huang, Lei, and Sun 2021). In section 5.2.2 of the study, the effect of the OCP on intergenerational mobility is further investigated using an *instrumental variable* approach that considers the inverse relationship between a governor's age and fine rates.

Interestingly, provincial governors who oversaw significant increases in fine rates did not face negative consequences in their political careers. Their subsequent political success was comparable to that of their peers, suggesting that the effectiveness of OCP implementation did not solely determine their selection or retention in office (Huang, Lei, and Sun 2021).[20]

Contrary to expectations, the fines imposed were not tailored to local fertility preferences, as previous studies found no significant relationship between fine amounts or relaxed OCP implementation and the preference for child quantity at the community level (Liu 2014). Additionally, regression analysis shows no significant correlation between provincial fine rates and local birth rates or various macroeconomic indicators (Table A2, row 1).

To examine potential endogeneity issues, Huang, Lei, and Sun (2021) test correlation between fine rates and 28 province-year-level macroeconomic indices and find no significant results, suggesting that changes in the fine rates are not influenced by other policies or previous economic conditions in specific localities.[21] We extend their research by examining the relationship between fine rates and provincial subpopulations (public servants versus other residents), boy preference (proxied by genealogy book density and gender-survival ratio in the

[20] Several of these former governors, such as Zhu Rongji, Li Changcun, and Wu Guanzheng, rose to become central-government political leaders. There is no evidence that any provincial governors were fired as a result of poor OCP implementation (Huang, Lei, and Sun 2021).

[21] These indices are grouped into four categories: (1) demography, including population size and birth and death rates; (2) basic economic conditions, such as employment, wages, GDP, and the unemployment rate; (3) government programs and expenditure, including numbers of pension-program and health-insurance participants; and (4) social services, such as the number of hospitals and educational resources (measured by the number of teachers). These factors are found to possibly influence economic outcomes. See details in Section II.A of Huang, Lei, and Sun (2021).

Great Famine), social inequality (proxied by the Gini coefficient), and returns to education, and we find no significant correlations (Table A2, rows 2–7).[22]

In summary, the implementation of the OCP in China varied among provinces, and the strength of implementation is measured by the level of fines for policy violations. Fine rates were influenced by the political prospects of provincial officials, promotion incentives, and the age and year of inauguration of provincial governors. However, there is no evidence to suggest that the fines were tailored to local fertility preferences or correlated with changes in birth rates or macroeconomic indicators. Furthermore, changes in fine rates were not driven by other policies or previous economic conditions specific to each province, conditional on covariates.

1.3. Intergenerational mobility and one-child families

Increasing intergenerational mobility has positive effects on society, promoting equality, productivity, and stability (Lipset and Bendix 2018; Bell et al. 2019). In low-mobility situations, families face constraints in occupations, education, and hierarchies (Lorge 2000). They tend to form communities of interest through marriage and establish strong networks to help family members climb the socioeconomic ladder (Holmgren 1982).[23]

However, the OCP implementation may have disrupted this culture of large families and tight-knit networks, leading to a grand-scale reshuffling of the socioeconomic landscape. Evidence shows that children born after the OCP experienced lower intergenerational persistence in income, education, and social class compared to those born before 1979 (Table A3).

[22] We use genealogy density and gender-survival ratio during the Great Famine as proxies for boy preference. A higher density of genealogical books indicates greater local Confucianism, which promotes the idea that men are superior to women (Zhang and Ma 2017). Regions with stronger boy preference had a higher gender survival ratio in the Great Famine, a severe period of food shortage in China from 1956 to 1961, because families who preferred boys would have given boys the majority of the food, leaving girls with little food to survive (Chen and Yang 2019).

[23] Feng (2010) documents a modern city (*xian*) in central China where a small number of families with authority occupy virtually all administrative leadership positions. These families have intermarried relationships.

2. Data

We utilize ten nationally representative household-survey datasets collected between 1982 and 2018, which include the China Family Panel Studies, Chinese General Social Survey, China Health and Retirement Longitudinal Study, Chinese Household Finance Survey, Chinese Household Income Project, China Health and Nutrition Study, China Labor-Force Dynamics Survey, Chinese Social Survey, National Population Census of China (Long Form database), and the Urban Household Survey (Table A4). These datasets provide a comprehensive representation of household demographics in China (Zhao et al. 2013; Gan et al. 2014; Xie and Hu 2014).[24] The final dataset comprises 2,096,978 parent-child pairs of observations, covering children born between 1949 to 1996 (Table A6), and the survey data spans from 1986 to 2019 (Table A7). A detailed statistical summary is presented in Appendix B1.

We use the *rank-rank* method to measure intergenerational persistence in income, educational, and social class, providing a comprehensive view of the phenomenon.[25] *Intergenerational income persistence* is a well-studied variable (Solon 1999; Black and Devereux 2011), while *intergenerational educational persistence* addresses the attenuation bias observed in income persistence (Feigenbaum 2018). Education is a more stable attribute, less noisy, and does not fluctuate once achieved, whereas income is subject to greater fluctuations. *Intergenerational social class persistence* in this study is a novel contribution to the field, which is based on administrative classifications and wealth levels, providing a unique and comprehensive characterization of Chinese social status.

[24] These surveys were conducted every two years by academic institutions, universities, and official organizations between 1982 and 2018, except for the census data, which are from two consecutive surveys, 2000 and 2005.

[25] In our study, intergenerational persistence, which is derived by a univariable regression of rank of parent on rank of child within their cohorts, respectively, is used to quantify intergenerational mobility. Intergenerational persistence measures how much a child's socioeconomic outcomes are influenced by those of their parents (Dearden, Machin, Reed 1997; Corak 2013; Chetty et al. 2014). Chetty et al. (2014) hold that *rank-rank* specification is more stable than other specifications for measuring intergenerational mobility and that it can also be applied to all variables including noncardinal variables (for example, education, social class). Emran, Jiang, and Shilpi (2020) also argue that this specification results in the least bias in slope and intercept estimations when used to calculate intergenerational persistence in developing countries.

To derive these intergenerational persistence variables, we perform regressions of each child's income, education, and social class rank within their cohort to that of their parents. For each observation, income is calculated by summing all yearly wages and monetary gains from full-time and vocational jobs, as well as capital gains. For retired individuals, income mainly consists of their pension, property-value gains, and capital gains. Years of education are measured as the number of years spent in school until the individual received their highest graduation certificate. We use this approach because the labor market pays employees based on their highest degree earned, regardless of any incomplete study experience. Social class is a multidimensional construct that categorizes each observation into one of five classes, considering factors like occupation, income level, and access to additional fringe benefits (Lu 2003). The detailed methodology for constructing the social class variable is provided in Appendix B2. We obtain *ranks within each cohort* by quantiles on outcomes for each parent and child among their cohort (Chetty et al. 2014; Emran and Shilpi 2019).[26] If both parents are present, the average rank of the parents is taken as the parents' rank of a child.

To measure the strength of the OCP across time and provinces, we construct a variable, *fine*, by using the average monetary-penalty rates imposed for having an unauthorized birth at the province-year level, formulated in multiples of annual income by Ebenstein (2010).[27] We consider the fine rate a year before the birth year because parents typically made the decision to have a child close to a year in advance.[28] For children born before 1979, an effective fine rate of 0 is assigned, as the OCP was initiated in that year. Consequently, children born in 1979 are excluded from the analysis due to the transitional nature of that year, when provinces implemented the OCP at different timings. Moreover, children born after

[26] We also control parents' age to attenuate life cycle bias (Chetty et al. 2014; Emran and Shilpi 2019). The *rank-rank* method is regarded as the most accurate measurement for intergenerational persistence (Chetty et al. 2014; Emran, Jiang, and Shilpi 2020; Gallipoli, Low, and Mitra 2020).

[27] See details on the fine-rate construction in Appendix Section III of Ebenstein (2010).

[28] It is possible that parents need more than one year to decide whether to have a child. We thus perform a robustness check using the average fine rate of three years prior to birth. Details can be found in Appendix B4.2.

1996 are also excluded to ensure that individuals in the sample have completed their education and are at their working age. Additionally, individuals born prior to 1949 are excluded to frame the observations within the same regime for comparability.[29]

Demographic control variables such as *birth year*, *birth province*, *gender*, and *marriage status* are extracted from the raw survey datasets.

3. Empirical methodology

We examine the impact of the One-Child Policy (OCP) on intergenerational persistence using a difference-in-differences (DID) framework. The strength of the OCP is proxied by the average monetary penalty for an unauthorized birth, expressed as multiples of annual income (Gu et al. 2007; Ebenstein 2010).[30] We utilize repeated cross-sectional data at the household level from 1979 to 2000. The mathematical expression for our analysis is as follows:

$$(1) \quad Rank_{iht} = \beta_0 + \beta Fine_{hp} \times Rank_{ift} + \beta_1 Fine_{hp} + \beta_2 Rank_{ift} + X_i{}'\beta_3 + \tau_t + \lambda_p + \omega_h + \varphi_d + \sigma_{iht}$$

In this equation, child i 's rank in income, education, and social class within their cohort h in year t ($Rank_{iht}$) is regressed on the parents' rank within their cohort f in year t ($Rank_{ift}$), the fine amount in child i's birth province p one year prior to the child's birth in year h ($Fine_{hp}$), and control variables X_i (gender, marital status, and whether only one parent is present).[31] We include fixed effects for cohort (ω_h), year (τ_t), dataset (φ_d), and province (λ_p) to account for time-invariant differences and changes over time. Standard errors are clustered at the provincial level.[32]

The focus is on the coefficient β, which represents the effect of the OCP on

[29] The People's Republic of China was founded in the year of 1949. This is China's new and current regime.
[30] Please refer to Ebenstein (2010), Section III for a detailed explanation of how the fine-rate data is constructed.
[31] See details in Section 3.2 about the construction of $Fine_{hp}$.
[32] We report alternative standard errors such as those using the two-way clustering of province and survey-source standard errors in Table A8. The results are robust to the different standard-error calculation methods.

intergenerational persistence. We analyze four alternative periods: 1976–82, 1974–84, 1969–89, and 1949–96 cohorts (excluding 1979 cohort)—i.e., three, five, and ten years before and after the initial implementation of the OCP in 1979 and all sample cohorts (from when the People's Republic of China was founded to the latest cohort that finished schooling). The parallel-trends assumption is crucial for our DID identification strategy, where outcomes before OCP implementation should not be related to the intensity of fines across provinces. We examine the exogeneity of fine rates in Section 2.2 and use the event-study method here to explore intergenerational-persistence trends prior to the OCP. The specification is as follows:

$$Rank_{iht} = \beta_0 + \sum_{\gamma=1949}^{1996} \beta_\gamma \widetilde{Fine_{hp}} \times Rank_{ift} \times I(h = \gamma) + \sum_{\delta=1949}^{1996} \beta_\delta \widetilde{Fine_{hp}} \times I(h = \delta) + \beta_1 Rank_{ift} + X_i + \tau_t + \lambda_p + \omega_h + \varphi_d + \sigma_{iht} \quad (2)$$

Here, excluding the 1979 cohort, we construct a pseudo-fine variable, $\widetilde{Fine_{hp}}$, for pre-OCP periods based on the average fine after 1979 in each province, representing the OCP intensity.

Figure 2 and Table A9 present the results, which suggest that there were no significant pre-existing trends in intergenerational persistence for income, education, and social class among cohorts prior to the implementation of the OCP.

[Insert Figure 2 Here]

4. Main results and robustness checks

This section presents the main results of the DID estimations. We then discuss the conducted robustness tests, which focus on the identification assumptions, contemporary policies, alternative measures for key variables, and external validity.

4.1. Main results

Table 1 demonstrates consistently significantly negative estimates of the key coefficient for the DID analysis, indicating a significant and negative impact of the OCP on intergenerational persistence in income, education, and social class. For example, comparing the 1980–82 and 1976–78 cohorts (three years before and after OCP implementation), the interaction term of income and fine has a coefficient of -0.095. This implies that the OCP decreases intergenerational income persistence by 9.5 percentage points for each fine equal to a parent's annual income. The negative coefficient remains significant for other time windows as well. It decreases the persistence rate by 9.2 percentage points for the 1980–84 versus 1974–78 cohorts, by 11.1 percentage points for the 1980–89 versus 1969–78 cohorts, and by 16.3 percentage points for the 1980–96 versus 1949–78 cohorts (column 1). These results indicate a significant effect of the policy in decreasing intergenerational mobility in income.

[Insert Table 1 Here]

Similarly, the OCP has a negative effect on intergenerational persistence in education and social class. It decreases education persistence by 16.6 percentage points for the 1980–82 versus 1976–78 cohorts, by 16.6 percentage points for the 1980–84 versus 1974–78 cohorts, by 18.2 percentage points for the 1980–89 versus 1969–78 cohorts, and by 17.9 percentage points for the 1980–96 versus 1949–78 cohorts (column 2). The policy also decreases social-class persistence by 8.1 percentage points, 8.6 percentage points, 11.0 percentage points, and 17.0 percentage points, respectively, for the same cohort comparison groups (column 3).

To estimate the average total effect of the OCP on intergenerational persistence for cohorts born between 1980 and 2000, we derive the population-weighted estimates of fines and elasticities (Table A10). Specifically, we calculate the

average fine for cohorts born between 1980 and 1996 by multiplying the population-weighted fine with the baseline estimate of the elasticity of the one-year-income-equivalent fine, which is obtained from estimations three years before and after the implementation of the OCP. Assuming a consistent marginal effect of the OCP across all years, the average fine for the 1980-1996 cohorts is 1.519 times their annual incomes, and the OCP decreases intergenerational persistence in income, education, and social class by 14.4 (column 2), 25.2 (column 4), and 12.3 (column 6) percentage points, respectively. In relative terms, the policy reduces intergenerational persistence by 28.1%, 52.2%, and 24.5%, respectively, compared to estimates prior to 1979 (Table A3, column 1).

Clark (2014) uses surname data to study intergenerational mobility in China and finds consistently low mobility despite decades of social turmoil in the first half of the twentieth century, which in turn led to increased mobility elsewhere in the world. The estimated intergenerational correlation of social status after the Communist Party took power is between 0.71 and 0.92. Based on this estimate, the OCP reduced China's intergenerational correlation of social status by 25.9% to 33.5%, which is more effective than social disruptions caused by wars and other major reforms like cultural revolutions (Clark 2014). Detailed calculations can be found in Appendix B3.

Analyzing the OCP's effect on intergenerational persistence for each province reveals varying reductions in income, education, and social-class persistence, ranging from 11.7% to 44.2% (Table A10, column 3), 21.7% to 81.5% (column 5), and 10.1% to 38.4% (column 7), respectively, if we assume a consistent marginal effect of the OCP across all years. Subgroup analysis shows consistently significant decreases in intergenerational persistence for different genders, locations, ethnic groups, and parent quartile rankings (see Section 5.2.4 and Appendix B4.4).

4.2. Robustness checks

We undertake a comprehensive set of tests to assess the robustness of our results. Besides the assessments of identification assumptions, instrumental variable estimations, and border discontinuity examination discussed in this section, the details of additional tests, including the sensitivity analysis to alternative measurements of key variables, the utilization of different datasets, and the application of various model weighing methods, are presented in Appendix B4. These tests provide further evidence to support the reliability and consistency of our findings.

4.2.1. Identification assumptions

To validate the parallel-trends assumption for DID estimations, we perform four robustness tests. First, we investigate whether the prior birth control policy (Later, Longer, Fewer—LLF) had any impact on intergenerational persistence before the implementation of the OCP.[33] Using the establishment of the Family Planning Leading Group (a provincial institution to guide LLF) in each province as a proxy for LLF, we employ a triple-difference method with the 1971–75 cohorts as the focus. The results show that the interaction between LLF, average OCP fine rates, and parent rank in income/education/social class is nonsignificant, indicating that LLF had no effect on intergenerational persistence before the OCP (Table A11; Chen and Fang 2021).

Second, we employ a permutation test to validate our study design. By randomly shuffling the OCP fine rate variable in the sample and running baseline regressions with a thousand draws, we observe placebo coefficients at the 5th and 95th quantiles. The results of the permutation placebo test align with our main findings

[33] The "Later, Longer, Fewer (*wan, xi, shao*)" campaign began in 1971 and ended roughly in 1975. "Later" refers to marrying at a later age—23 for women and 25 for men; "Longer" refers to a birth planning rule that requires births to be spaced apart by more than three years; and "Fewer" refers to a restriction on having less than three children for a couple (Chen and Fang 2021). This family planning campaign was technically voluntary, and its policy enforcement was much more lenient than that of the OCP (Zhang 2017).

(Table A12).

Third, to address treatment-heterogeneity concerns including negative weighting, as we use two-way fixed-effects estimators with multiple periods and varying treatment timings, we follow the methodology proposed by Callaway, Goodman-Bacon, and Sant'Anna (2021) and examine *No Treatment Effect Dynamics* (CGS Assumption 6(a)) and *Homogeneous Causal Responses across Groups* (CGS Assumption 6(b)). Within any random timing group, we find no difference in the causal response of child rank to the treatment of the interaction between OCP fine and income/education/social class (Table A13).

Finally, we examine the spillover effect of the OCP on cohorts born prior to 1979, who may have experienced changes in sibling number due to the influence of the policy, despite being born before its official implementation. For example, some may have become single children, even though their parents initially intended to have more children. To mitigate any potential bias from spillover effects, we exclude child-parent pairs in which the mother's age at the birth of the first child is younger than the 90th percentile for gestational age, as younger mothers generally have a longer reproductive period and are thus more likely to be affected by the OCP. Our findings consistently demonstrate a negative coefficient, similar in magnitude or smaller, indicating that the potential spillover effect does not undermine our main conclusions (Table A14).

4.2.2. Instrumental variable estimates

We utilize the DID framework as our primary approach to estimate the effects of the OCP on intergenerational persistence. However, there is a concern that the time and provincial fixed effects may not fully capture the effects of omitted variables, which could bias the DID estimate. To address this concern, we employ an instrumental variable (IV) approach using the average age of provincial standing

committee members as an instrument for OCP fine rates.[34]

The use of this instrument is justified by the formulation of provincial fine rates. Before 1989, provincial leaders adhered to similar fine rates set by the central government. However, after 1989, when the OCP results were factored into their performance evaluations, provincial leaders had a motivation to set higher fine rates. Younger officers in China's political system have better prospects for promotion and career advancement, which may incentivize them to enforce higher OCP fines to improve their performance evaluations (Huang, Lei, and Sun 2021). In practice, provinces with larger increases in fine rates tended to have relatively younger leaders (Section 2.2; Huang and Li 2015; Huang, Lei, and Sun 2021). Consequently, there is a negative correlation between the age of government leaders and the level of fine rates.

To validate this instrument, we assess its potential impact on omitted variables that could influence local intergenerational persistence. Firstly, we examine whether local macro indices in demography, macroeconomics, government behaviors, and sanitary and educational conditions are affected by the average age of elected officers. Our results show no significant correlation at the 10% level (Table A15). Secondly, we explore whether the age of officers affects internal migration between provinces. Younger provincial officers may advocate for more progressive economic policies, potentially altering the structure of local intergenerational persistence. Controlled for fixed effects and province-specific time trends, our regression analysis shows no significant correlation between officer age and internal migration (Table A16, panel A).

While our tests may not capture all dimensions, these findings suggest that major omitted variables are unlikely to be a critical concern. Considering the consistency between these exclusive rule tests and the relevance of provincial leaders' age and

[34] The leaders age data is from *China Vitae* (https://www.chinavitae.com/) and *Baidu Baike* (https://www.baike.baidu.com/), which compile and disseminate biographies of Chinese leaders in political, military, educational, commercial, and media spheres.

fine rate levels, we conclude that the average age of provincial officers serves as a reasonable instrument for OCP fine rates. The instrumental variable (IV) models are as follows:

$$(3) \qquad Fine_{hp} = \beta_0 + \beta OfficerAge_{hp} + X_i^{'} \beta_1 + \tau_t + \lambda_p + \omega_h + \varphi_d + \sigma_{iht}$$

$$(4) \qquad Rank_{iht} = \beta_0 + \beta \widehat{Fine_{hp}} \times Rank_{ift} + \beta_1 \widehat{Fine_{hp}} + \beta_2 Rank_{ift} + X_i^{'} \beta_3 + \tau_t + \lambda_p + \omega_h + \varphi_d + \sigma_{iht}$$

We focus our analysis on the period from 1989 to 1996, during which there were notable changes in fine rates (most being increases; see Section 2.2). The remaining settings align with equation (1).

The IV estimates for the first and second stages are presented in Table A16. The first stage F-statistics exceed 29.4, indicating that the instrument is not weak. The IV estimate of the key coefficient, β, exhibits a negative value of the same magnitude as the baseline DID estimate, suggesting consistency between the IV and baseline estimates. These findings indicate that omitted variables do not significantly affect our main estimates.

4.2.3. Border discontinuity design

While our study includes provincial fixed effects to control for regional variations, there is still a possibility of unobserved confounding factors that differ across provinces (refer to Section 5.2.2). This implies that the observed variations in intergenerational persistence may not solely be attributable to regional factors. Thus, further confirmation is required to establish the OCP's role as a key factor in explaining variations in intergenerational persistence, as indicated by our findings.

To explore the impact of the OCP on intergenerational persistence across neighboring provinces with different OCP fine levels, we employ a border discontinuity design. Our aim is to examine whether the OCP had a significant influence on the geography of intergenerational persistence after its implementation

in 1979. This design allows us to isolate the specific impact of the OCP on intergenerational persistence from potential confounding factors that vary across provinces. Our analysis focuses on individuals' prefecture of residence instead of their province, enabling us to study intergenerational persistence in education, given data accessibility. We focus on cohorts from 1979 to 1985, who have completed the mandatory nine-year education period, providing sufficient variation in subsequent educational decisions. The analysis is structured as follows:

$$(5) \quad Rank_{iht} = \beta_0 + \beta High_{ic} \times Rank_{ift} \times dist_{ic} + \beta_1 High_{ic} \times dist_{ic} + \beta_2 Rank_{ift} \times dist_{ic} + High_{ic} + Rank_{ift} + dist_{ic} + X_i{}' \beta_3 + \tau_t + \pi_c + \omega_h + \varphi_d + \sigma_{iht}$$

where $dist_{ic}$ represents the distance between the centroid of the prefecture c where individual i was born and its nearest neighboring provincial border, $High_{ic}$ indicates whether i was born in a prefecture with a higher OCP fine rate than the nearest neighboring province, π_c denotes the prefecture fixed effect, and the remaining variables are the same as in equation (1). The key coefficient of interest, β, captures the effect of being born in a province with higher OCP fine rates on intergenerational persistence at the border. The results show a significantly negative β value of -0.177 (Table A17, column 4), implying that higher fine rates lead to a greater decrease in intergenerational persistence.

To further validate our findings, we conduct additional analyses by narrowing down the sample based on specific distances between the centroid of the birth prefecture and its nearest neighboring provincial border, referred to as the *cutoff*. We consider three cutoff points: 100, 150, and 200 kilometers. The estimated coefficients, ranging from -0.102 to -0.189 (Table A17, columns 1–3), consistently demonstrate a negative association between being born in a province with higher OCP fine rates and intergenerational persistence. These results reinforce the robustness of our findings and provide further evidence of the consistent impact of

OCP fine rates on intergenerational outcomes across different cutoff distances.

In conclusion, our findings provide compelling evidence of the direct and distinct impact of the OCP on the geography of intergenerational persistence, independent of other province-specific factors. However, it is important to note that our estimates represent a conservative lower bound for two reasons. First, our estimates simply capture the additional effect of stricter OCP-related institutions rather than the overall impact of the OCP itself. Second, our empirical method focuses on discontinuous policy changes at the border and may overlook certain institutional elements. Therefore, the total significance of the OCP is likely to be greater than what our data suggests.

4.2.4. Other robustness checks

We conduct numerous additional robustness checks, which are described in detail in Appendix B4. All robustness checks we conduct consistently show negative effects of the OCP on intergenerational persistence in income, education, and social class (Figure 3). We explore the impact of educational reforms in the late 1970's on intergenerational persistence and show that these reforms cannot explain our results. We also explore within-province heterogeneity to account for other province-level policy changes that may coincide with fine rate adjustments, test alternative measures of the two primary independent variables (parent rank and fine rates), address concerns regarding the external validity and representativeness of the datasets, and examine the heterogeneity in the effect of the OCP.

[Insert Figure 3 Here]

5. Mechanisms

Our empirical study examines three interconnected mechanisms through which the OCP influences intergenerational persistence, aligning with the propositions

derived from our theoretical model (Appendix C). Understanding these mechanisms provides insights into the multifaceted effects of the OCP on social mobility and inequality.[35]

5.1. The weakening of elite-family heirship

We investigate the impact of the OCP on elite families and assortative mating, which are possible channels through which intergenerational persistence is influenced (see Appendix C). In Chinese aristocratic culture, family is highly valued, and transferring wealth and endowments between ancestors and descendants is an enduring family legacy (Tanner and Feder 1993; Schmidt-Glintzer and Jansen 1994; Clark 2014). Elite families in Chinese society usually hold powerful positions and affluent resources; they traditionally valued having many children to allow for assortative mating, as well as leveraging complementarities among siblings, to concentrate wealth (Feng, Poston Jr., Wang 2014; Chen and Jordan 2018). However, the implementation of the OCP may have disrupted the ability to exploit these complementarities, leading to a decline in resources and wealth for elite families (*Proposition 1*) despite lower dilution of parental investments. Elite officials in leadership positions were more likely to comply with the OCP (Shambaugh 2008; Chen and Kung 2019; Han and Gao 2019); thus, we study heterogeneity by status as an elite official within China's administrative system. We first confirm that the OCP reduced the number of children in elite families (Appendix B5.1). We find a negative coefficient of -0.08 (Table 2, column 1), indicating a larger reduction in the number of children among elite officials compared to non-elite officials.

[Insert Table 2 Here]

[35] We further explore the potential channels of decline in son preference and migration choice but find no significant results (Appendix B5.4).

We further find that the reduction in child numbers weakened assortative mating within elite families, as they were less likely to marry within their own social class (*Proposition 2*).[36] Table 2 shows that the coefficients for income, education, and social class are significantly negative, indicating that an OCP fine equal to one year's income decreases spouse income, education, or social class rank by 9.6 (column 2), 6.1 (column 3), or 2.2 percentage points (column 4), respectively. The OCP weakened the transmission of advantages within elite families, leading to a reduction in intergenerational persistence.

5.2. Resource concentration in poor families

The OCP fines had a disproportionate impact on poorer families, leading to a reduction in the number of OCP violations among the lower-half income group compared to the wealthier-half (*Proposition 3*). The relative cost of fines was higher for poorer families, incentivizing them to have fewer children. Consequently, children from lower-income families can receive a larger share of family resources, including nonfinancial benefits such as companionship and noncognitive skills imparted by parents (Carneiro and Heckman 2003; Cunha and Heckman 2007).

To examine this hypothesis, we employed triple-difference regressions to assess the influence of the OCP on children from different income levels (Appendix B5.2). The regressions examine various outcomes, including the number of siblings, marriage gifts, education investment from parents, and noncognitive skills (self-efficacy, ambition, and trust in people).

The findings in Table 3 confirm our hypothesis that the OCP has a greater impact on the number of children in lower-income families than in higher-income families. The coefficient of -0.133 (column 1) indicates that each one-year-income equivalent fine results in 0.133 fewer siblings for poor people than for wealthy ones.

[36] Prior to the OCP, elite families typically had multiple offspring and married into other elite households (Watson et al. 1991; Holmgren 1991).

Lower-income families also experienced larger increases in marriage gifts (column 2) and education investments (column 3) in response to OCP fines compared to wealthier families. Furthermore, the OCP had a positive influence on the noncognitive skills of children from lower-income families, with significant increases in self-efficacy, ambition, and trust in others (columns 4-6) for each one-year-income equivalent fine.

[Insert Table 3 Here]

Overall, these findings support the hypothesis that the OCP concentrated resources in lower-income families by reducing their number of children. This reallocation indirectly enhanced the prospects of children from lower-income backgrounds, confirming *Proposition 3*.

5.3. The decrease in wage disparities by education level

Proposition 4 suggests that the decrease in intergenerational persistence observed in China may be attributed, in part, to a decline in the returns to education. Higher levels of education attained by children from wealthy families contribute to their likelihood of becoming higher-skilled workers, thus perpetuating wealth and income inequalities across generations (Figure A3). The implementation of the OCP directly impacted labor supply by reducing the population of the next generation, particularly affecting the low-end labor markets. This reduction in population size could potentially lead to higher wages and a narrowing wage gap between higher- and lower-skilled occupations. Previous studies have shown that a decrease in the wage gap between children from wealthy and poor families is associated with increased intergenerational mobility (Bütikofer, Dalla-Zuanna, and Salvanes 2022).

The decline in returns to education observed in our study may have diminished

the advantages of having highly educated parents. This, in turn, could have facilitated the upward mobility of children from low-education families, allowing them to overcome the educational disadvantage inherited from their parents. Moreover, the reduced returns to education may have weakened the incentives for parents to invest in their children's education, further influencing intergenerational mobility patterns.

To investigate the role of the OCP in diminishing returns to education, we employ a triple-difference regression (Appendix B5.3). The results consistently demonstrate that the OCP reduced returns to education. Specifically, we find declines of 82.5 percentage points for middle school, 62.3 points for high school, and 27.1 points for college degrees. These findings provide empirical evidence of the existence of a returns-to-education channel.

[Insert Table 4 Here]

6. Conclusion

This study examines the impact of the One-Child Policy (OCP) on intergenerational persistence in income, education, and social class. Using the diff-in-diff method, we find that the OCP decreased intergenerational persistence. Our theoretical model identifies three primary channels through which the OCP influenced intergenerational mobility: weakening of elite-family heirship, concentration of family resources on a single child, and reduction in returns to education. Our empirical findings support the existence of these channels.

The OCP played a role in promoting intergenerational mobility, leading to increased productivity and stability. While not originally intended for this purpose, the OCP exemplifies significant changes in intergenerational mobility through nonviolent means, contrasting China's historical cycles of revolution and regime changes. However, it is essential to note the negative effects of the OCP, such as

loss of life, deprivation of reproductive freedom, gender imbalance, and welfare losses (Huang, Pan, and Zhou forthcoming). Nevertheless, our findings suggest that policies targeting intergenerational mobility through identified channels may offer effective strategies for highly populous hierarchical nations to break free from cycles of violent revolution.

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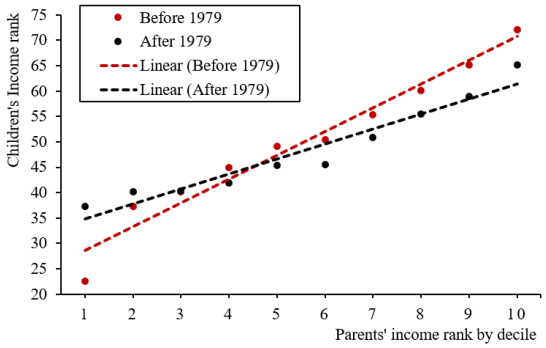
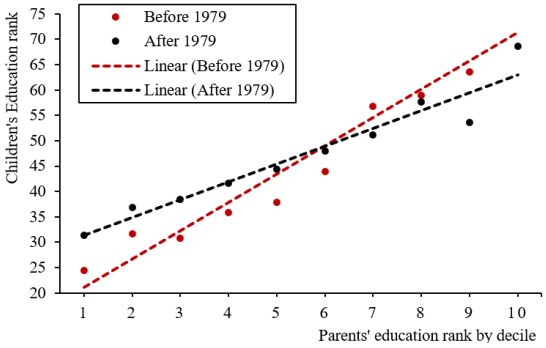
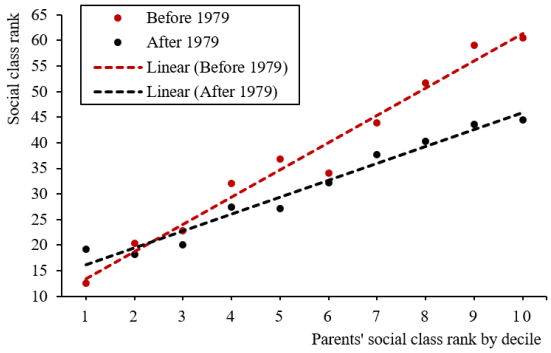


(a) Income Rank



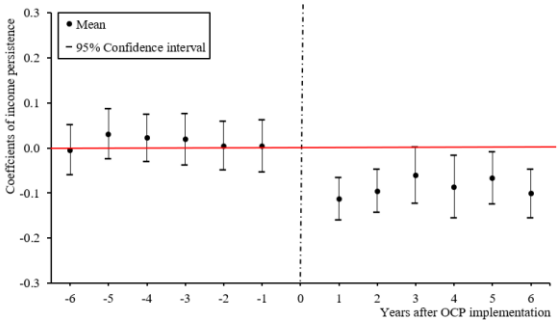
(b) Education Rank



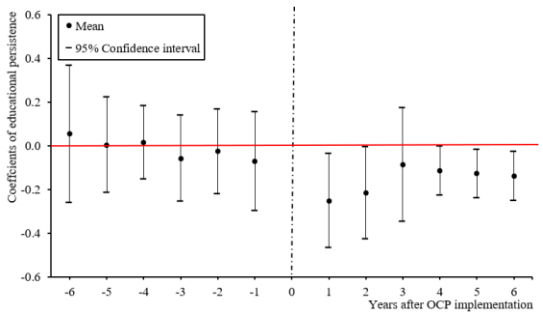
(c) Social-Class Rank

FIGURE 1. INTERGENERATIONAL MOBILITY BEFORE AND AFTER ONE-CHILD POLICY'S IMPLEMENTATION IN 1979

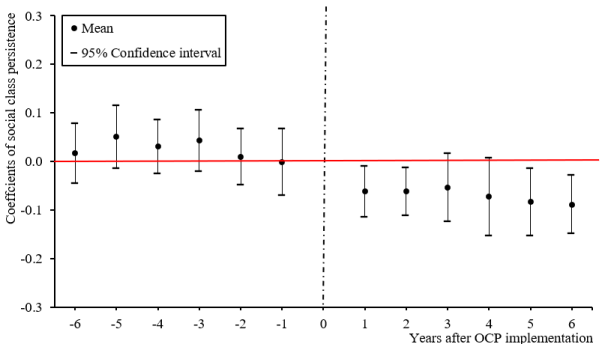
Note: (a), (b), and (c) visualize the dynamic effects of OCP fines on income, education, and social class. Y-axes are children's income, education, and social-class ranking by percentile; X-axes are parents' income, education, and social-class ranking by decile. The dashed lines are linear predictions of the relation, where steeper slopes stand for higher intergenerational persistence (lower intergenerational mobility). Red dots and lines are before OCP implementation (in 1979), while black dots and lines are after OCP implementation.



(a) Relative Income Persistence



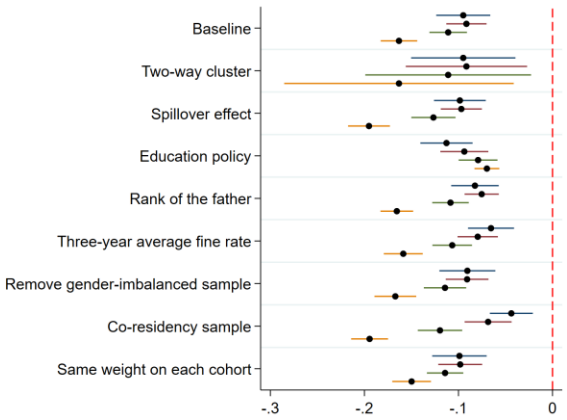
(b) Relative Educational Persistence



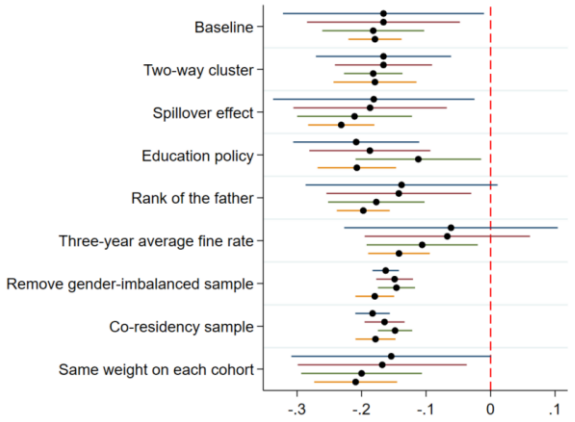
(c) Relative Social-Class Persistence

FIGURE 2. THE DYNAMIC IMPACTS OF ONE-CHILD POLICY FINES ON INTERGENERATIONAL PERSISTENCE

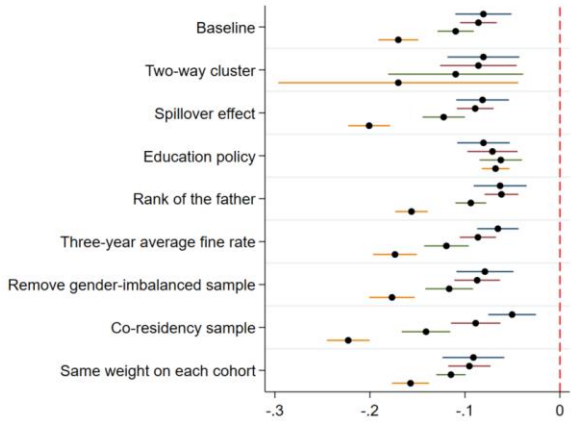
Note: (a), (b), and (c) visualize the dynamic effects of OCP fines on income, education, and social-class persistence respectively for 1973–85 cohorts, excluding the 1979 cohort, where the solid line connects the estimates and the dashed lines indicate the 95% confidence intervals with standard errors clustered at the province level.



(a) Relative Income Persistence



(b) Relative Educational Persistence



(c) Relative Social-Class Persistence

FIGURE 3. SUMMARY OF ROBUSTNESS—ONE-CHILD POLICY'S EFFECT ON RELATIVE PERSISTENCE

Note: The figure shows coefficients (the dots) and 95% confidence intervals (the lines) from robustness estimations, respectively. Each vertical axis label designates a set of robustness check results. The outcomes from samples of the cohorts 1976–82, 1974–84, 1969–89, and 1949–96 is shown in the set of robustness check results from top to bottom, with the 1979 cohort being excluded. The labels correspond to robustness checks in Section 5.2.

TABLE 1. ONE-CHILD POLICY'S EFFECT ON RELATIVE PERSISTENCE

	Child's income rank (1)	Child's education rank (2)	Child's social class rank (3)
Parent's Rank X Fine:	-0.095	-0.166	-0.081
(1976–1978) v. (1980–1982)	(0.014)	(0.076)	(0.014)
Observations	72,366	345,475	73,610
Parent's Rank X Fine:	-0.092	-0.166	-0.086
(1974–1978) v. (1980–1984)	(0.010)	(0.058)	(0.009)
Observations	113,678	558,312	115,813
Parent's Rank X Fine:	-0.111	-0.182	-0.110
(1969–1978) v. (1980–1989)	(0.010)	(0.039)	(0.009)
Observations	213,943	1,102,734	218,280
Parent's Rank X Fine:	-0.163	-0.179	-0.170
(1949–1978) v. (1980–1996)	(0.010)	(0.020)	(0.010)
Observations	348,212	2,031,503	358,163
Controls:			
Gender, Single parent, Marital status	X	X	X
Province FE	X	X	X
Cohort FE	X	X	X
Dataset FE	X	X	X
Year FE	X	X	X

Note: Each cell in this table reports the coefficient from an estimation of OCP intensity (fine rate) on income, education, and social class. The dependent variable is the rank of children's income, education, and social class within their cohort, and the key independent variable is the OCP fine rate at the province-year level interacting with their parents' corresponding rank within the parents' cohort. All regressions are controlled for survey-year fixed effects (FE), province FE, dataset FE, and cohort FE. Robust standard errors are clustered by province in parentheses.

TABLE 2. ONE-CHILD POLICY'S EFFECT ON AMPLIFYING FAMILY POWER: ASSORTATIVE MATING AND EFFECT ON ELITE OFFICIALS

	Child number (1)	Spouse income rank (2)	Spouse education rank (3)	Spouse social class rank (4)
Elite officials	-0.080			
	(0.060)			
Elite officials X fine	-0.725			
	(0.076)			
Income rank		0.358		
		(0.011)		
Income rank X fine		-0.096		
		(0.012)		
Education rank			0.307	
			(0.026)	
Education X fine			-0.061	
			(0.017)	
Social class rank				0.313
				(0.010)
Social class rank X fine				-0.022
				(0.010)
Fine	0.092	4.403	-0.862	-0.646
	(0.047)	(0.978)	(0.874)	(0.721)
Province FE	X	X	X	X
Cohort FE	X	X	X	X
Dataset FE	X	X	X	X
Year FE	X	X	X	X
Observations	1,554,804	177,961	1,316,019	187,697
R-squared	0.204	0.307	0.191	0.262

Note: Each column in this table reports the coefficient from an estimation of OCP intensity (fine rate) on different outcome variables. The dependent variables are rank of spouse income, education, social class, and number of children. All regressions control for survey-year fixed effects (FE), province FE, dataset FE, and cohort FE. Robust standard errors are in parentheses and clustered by province. The 1979 cohort has been excluded.

TABLE 3. ONE-CHILD POLICY'S EFFECT ON POOR VERSUS RICH FAMILIES: NUMBER OF SIBLINGS, BIRTH AGE, WEALTH TRANSMISSION, AND NONCOGNITIVE SKILLS

	Number of siblings	Marriage gift from parents	Education investment from parents	Self-efficacy	Ambition	Trust
	(1)	(2)	(3)	(4)	(5)	(6)
Poor X fine	-0.133	0.912	0.656	8.575	5.712	2.565
	(0.035)	(0.311)	(0.245)	(3.061)	(2.624)	(0.725)
Poor	0.108	-0.416	0.231	-0.001	5.044	-0.575
	(0.025)	(0.238)	(0.194)	(2.033)	(3.837)	(0.429)
Fine	0.147	-1.091	0.108	-1.648	-5.975	-2.707
	(0.036)	(0.334)	(0.635)	(2.477)	(2.235)	(1.006)
Province FE	X	X	X	X	X	X
Cohort FE	X	X	X	X	X	X
Dataset FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X
Observations	351,674	1,372	15,712	4,851	3,476	49,425
R-squared	0.416	0.219	0.219	0.061	0.146	0.091

Note: Each column in this table reports the coefficient from an estimation of OCP intensity (fine rate) on different outcome variables between poor (the lower half) and rich families. The dependent variables are sibling number, logarithms of marriage gift from parents and educational investment from parents, and the quantiles of noncognitive skills: self-efficacy, ambition, and trust. All regressions are controlled for survey-year fixed effects (FE), province FE, dataset FE, and cohort FE. Robust standard errors are in parentheses and clustered by province. The 1979 cohort has been excluded.

TABLE 4. ONE-CHILD POLICY'S EFFECT ON RETURNS TO EDUCATION

	Income	Income	Income
	(1)	(2)	(3)
Middle school	1.763***		
	(0.061)		
Middle school X Fine	-1.038***		
	(0.080)		
High school		1.840***	
		(0.085)	
High school X Fine		-1.158***	
		(0.090)	
College			1.887***
			(0.095)
College X Fine			-1.296***
			(0.099)
Fine	0.825***	0.623***	0.271**
	(0.127)	(0.136)	(0.127)
Province FE	X	X	X
Cohort FE	X	X	X
Dataset FE	X	X	X
Year FE	X	X	X
Observations	523,738	523,738	523,738
R-squared	0.286	0.284	0.269

Note: Each column in this table reports the coefficient from an estimation of OCP intensity (fine rate) effect on the return of education on income. We use returns-to-education dummies: middle school (column 1), high school (column 2), and college (column 3). The dependent variables are logarithms of income. All regressions control for survey-year fixed effects (FE), province FE, dataset FE, and cohort FE. Robust standard errors are clustered by province in parentheses. The 1979 cohort has been excluded. ***, **, and * indicate statistical significance at the levels of 1%, 5%, and 10%, respectively.