Wei Huang, Xiaoyan Lei and Ang Sun (2021), "Fertility Restrictions and life cycle outcomes: evidence from the one-child policy in China", The Review of Economics and Statistics 103 (4): 694–710.

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The world has not seen any bigger interference with women's fertility than China's One-Child Policy (OCP) (1979 to 2016). Even the introduction of the birth control pill in 1960 did not have an impact on reproduction as big as China's three-decade-long limitation to, in general, one child per couple. While the policy has been replaced by more generous new regulations – since 2016, families have been allowed to have two children, and since August 2021, a new law allows all married couples to have three children – the policy still has enormous effects on Chinese women, many of whom do no longer intend to have more than one child. In other words, despite the Chinese government's recent efforts to increase the country's fertility rate to soften the negative socio-economic impact of its ageing society, the 36 years of OCP still have a major impact on women's fertility choices.

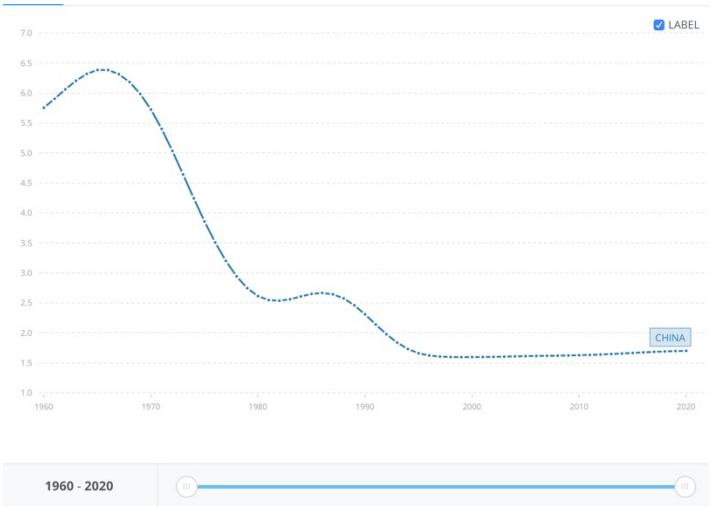
The Chinese government's dramatic measures to curb population growth in the 1980s, 90s, and early 2000s have impacted not only present-day fertility choices of several hundred million Chinese women of childbearing age (and their partners), but also (and much more dramatically) women's life choices as well as economic and social outcomes over their lifetime. In the article "Fertility Restrictions and life cycle outcomes: evidence from the one-child policy in China (2021)", published at the prestigious *Review of Economics and Statistics*, the authors Wei Huang, Xiaoyan Lei and Ang Sun show that "fertility restrictions imposed early in the lives of individuals affected their educational attainment, marriage and fertility decisions, and later life economic outcomes". Explicitly, they show how the strict fertility restrictions imposed especially in China's urban areas since 1979 led to women staying in education longer, a higher percentage of women taking up white-collar jobs, and delayed marriage. As a result of the rapidly declining number of children per family, which meant that women had to devote less time and money to child-rearing (but instead could focus on their own education and take up more well-paid employment), household income, consumption and saving increased. Interestingly, it is not only the women who benefited socially and economically: the One-Child Policy, for example, not only increased young women's high school completion, but also that of men, albeit to a smaller degree (4.5 vs. 3.1 percentage points).

The study's results are based on in-depth quantitative research, with data taken from *China's Urban Household Survey* (UHS) (sample size in this study: 200,000 households) and the *China Family Panel Studies* (CFPS). To account for the regional differences – only the Han ethnicity, which accounted for approximately 92% of China's population, was initially subject to the OCP, and urban areas were much more restricted than rural areas – the authors use 28 province-year-level macroeconomic indices. They show that not only the height of fines couples with more than one child had to face correlated with fertility and the socio-economic development of the parents, but also the assertiveness with which the policy was executed by local officials (while some regions

only implemented lax penalties in the 1980s, others used forced sterilisation, especially after 1990).

While the study is very well executed and based on sound data, most of the findings are rather self-explanatory and to some extent common sense. For example, the study's main findings, as summarised in the conclusion, that "exposure to [fertility restrictions] leads to higher education, more white-collar jobs, delayed marriage, […] lower fertility [and] higher household income, consumption, and savings" is all but surprising and just a logical result of women being able to have only one child, which means that most of them would delay fertility (until the 'perfect' time for the 'perfect' child has arrived) and thus spend more time in education and in employment. Having only one child naturally also means that women can return to the labour market sooner than with several children and thus have better career chances and higher salaries than their peers with more children (or previous generations). This human capital accumulation increases the household income and allows families not only to save more (as shown in the higher saving rate of households with only one child), but also to spend more (as depicted in their higher consumption rate). Thus, while the study is sound and very well executed, the findings are all but surprising. Also the fact that higher penalties and stricter execution of the OCP among government officials increased compliance among the population is all but astonishing.

What I personally missed is a more thorough international analysis of the fertility rate, comparing China's development with that of other Asian countries, such as Thailand, Korea, or Vietnam. Also, I would have wished for a lengthier discussion that the sharp drop in China's fertility rate was not only the result of the OCP, but a natural development among countries experiencing (rapid) economic growth and social development. In fact, the biggest decline in fertility happened in the decade *prior* to the One-Child Policy, when the average number of children per couple dropped by nearly 60% (or a whopping 3 children), from over 6 children in 1969 to around 2.75 in 1979. In other words, the decline in fertility in the decade preceding the OCP was bigger than during the whole three and a half decades of fertility restrictions, when the number of children per couple 'only' declined by around 35%, or one child, from 2.7 in 1980 to 1.7 in 2016.



Graph I: Total fertility rate in China, 1960 to 2020.
From: The World Bank (2022), Fertility rate, total (births per woman) – China.

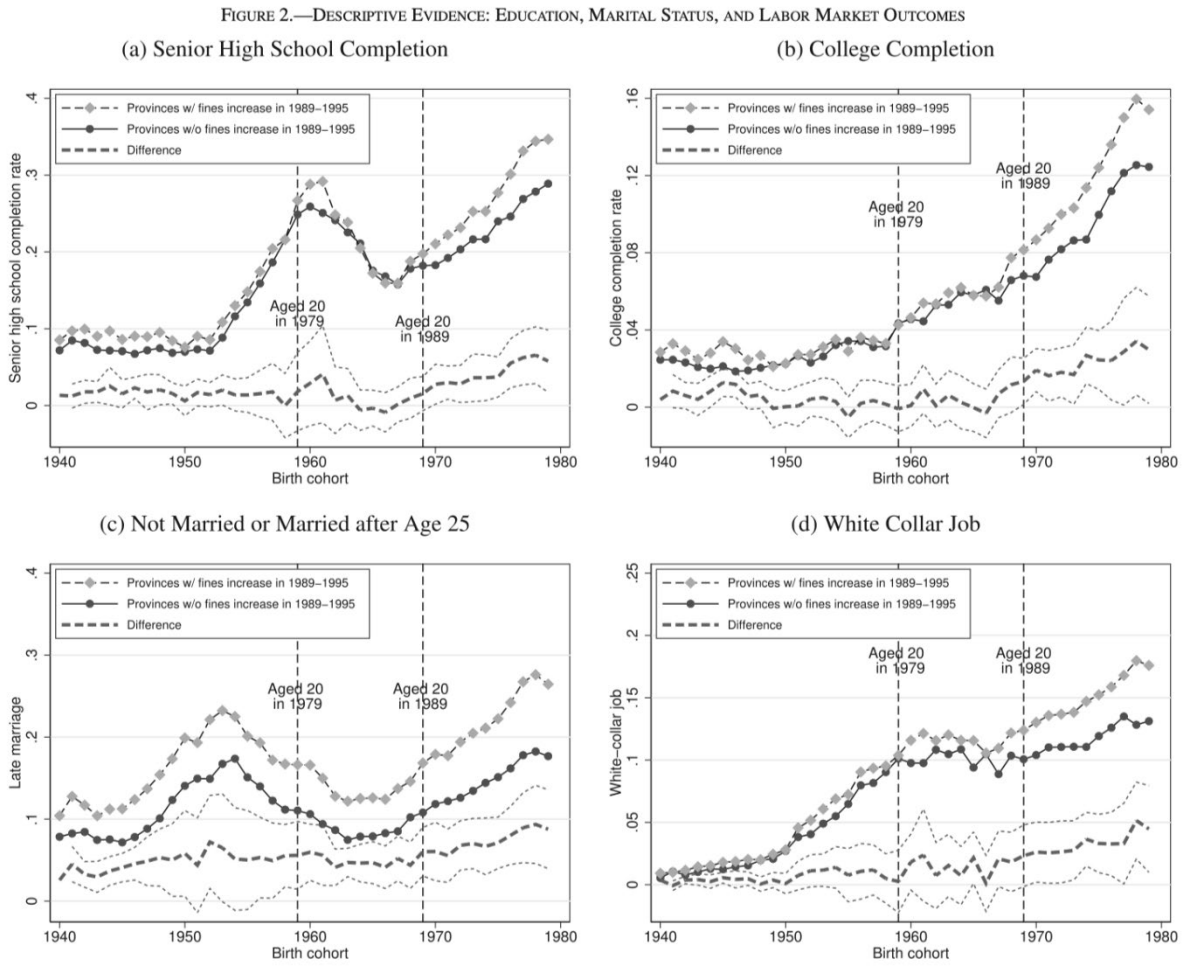
Thus, the authors' conclusion that that the OCP significantly impacted China's TFR (total fertility rate) is not as simple as it sounds, and not always true. The rather surprising finding that the sharpest drop in the TFR happened in the decade preceding the OCP makes it questionable if it was in fact the OCP that impacted the socio-economic status of women in China and led to "higher education, more white-collar jobs, delayed marriage, and lower fertility", in addition to "higher household income, consumption, and savings", as the authors conclude, or if it stems from a general tendency among women experiencing rising wealth to have fewer children. In other words, one could even go as far as to suggest that it was not fertility restrictions that led to higher human capital accumulation among Chinese women, but that, vice-versa, women staying longer in education, having better jobs, and becoming financially stable have impacted their decision to have fewer children.

That the correlation between Chinese fertility restrictions and the development of the fertility rate is not as straightforward as the authors suggest (although with some restrictions) is also revealed by the fact that with the introduction of the OCP in 1979/1980, the fertility rate, which had declined at the fastest pace in Chinese modern history in the decade prior to the OCP, indeed significantly *increased* until the late 1980s. Fertility in fact only considerably declined for a short period during the 36 years of Chinese OCP, between the late 1980s and mid-1990s, and stagnated afterwards. Thus, I argue that the general socio-economic development of China has played an equally or more important role in the decline of the fertility rate than the OCP.

Comparing the fertility rate of China with that of Thailand, a country with equally impressive economic growth and similar average per capita GDP between 1979 and 2016, one can notice that the fertility rate in Thailand decreased at a similar pace as in China, from just under six children in 1970 to 1.6 children in 2006. In other words, the decline in Thailand's TFR is nearly identical and only preceded China by around one decade due to earlier economic growth. Similar trends can also be found in Vietnam and Korea, two other (South)-East Asian countries where no fertility restrictions were imposed by the government. Thus, it can be argued that China's decline in fertility is not specifically linked to the OCP, but the result of a general trend among (Asia's) formerly low-income countries in decades of (high) economic growth.

Another example where the authors seem to jump to the conclusion that it was in fact the OCP, and not socio-economic development, that led to fewer births can be found in their comparison of provinces with and without strict enforcement of fertility control. While they manage to show that provinces where fines for a second child were increased had a higher rate of high school and college completion among both women and men, as well as a greater number of women taking up white-collar jobs than provinces without increased penalties, there is no evidence that there is a causality between these factors. This is because it is very likely that the provinces with fine increases were predominantly urban while those without were often more rural, as the Chinese government was much more active in restricting population growth in the urban centers, where most Han Chinese lived and where space and other resources were restricted, than in rural areas at the periphery. In fact, despite the introduction of the One-Child Policy, the assumption that all

couples were only allowed to have one child between 1979 and 2016 is not true, as the OCP predominantly applied to urban *hukou* (registration) holders. Families with a rural *hukou* were generally exempted in case the first child was a girl, and so were most of the minority groups, which were also overrepresented in rural areas.



Graph II: Development of senior high school completion, college completion, marriage after 25 and prevalence of white-collar jobs among women in provinces with and without increased fines for multiple children.

From: Huang et al. (2021), “Fertility Restrictions and life cycle outcomes: evidence from the one-child policy in China”.

Thus, it can also be argued that the reason for people in provinces with fine increases to have better education and employment was not the fines for a second child itself, but faster economic growth and social development, which made education and white-collar jobs more attractive. In other words, in urban areas, where fertility restrictions tended to be more heavily regulated and fined, women also refrained from having a second child because economic growth provided better education and more lucrative careers. Thus, a causal relationship between increased fines and higher human capital accumulation cannot be assumed automatically, something that is not sufficiently addressed by the authors. In fact, the finding that the share of people not married after 25 (late marriage) has always been significantly higher in provinces with

fine increases (even decades before the OCP was introduced) and that the difference between provinces with and without fine increases did not change significantly after 1979 could be another sign that the provinces with fine increases have just historically been more urban and socio-economically advanced, which explains their residents' higher focus on education and jobs during the OCP years.

The last point of criticism is the general statement in the introduction that "exposure to stricter fertility restrictions in early life increases female empowerment", which made me swallow. While the authors later clarify that they regard the "increase in the fraction of households headed by women, female-oriented consumption and gender-equal opinions" that grew between 1979 and 2016 as signs of female empowerment, I find it astonishing that they do not mention that, at the same time, being restricted by an authoritarian government to give birth to only one child, is one of the most degrading policies for women, who, for tens of thousands of years, have often defined themselves (and have been defined) as mothers and the female head of large families. Taking away women's decision-making power whether they want to have a small or large family is humiliating, as only having one child does is not in human nature (as it would lead to the extinction of the entire human species). While the article's aim is not to discuss whether the OCP was 'good' or 'bad' for women, I would have appreciated a comment relativising the statement that "stricter fertility restrictions in early life increases female empowerment", for example by mentioning that the complete regulation of reproduction among hundreds of millions (young) Chinese women also significantly reduced female empowerment.

All in all, the article is well-researched and offers some interesting statistics on the development of different socio-economic indicators during China's One-Child Policy. While it provides some new insights on how the government's fertility restrictions impacted men and women in different provinces, its conclusion is sometimes too simplistic, as the authors, in several cases, assume causality where only a correlation is provided. Had they added more stress that the socio-economic development in China during 1979 and 2016 was most likely also a major natural factor for the decline in fertility among Chinese women, the article would have been more convincing. However, all in all, it is an interesting read with some important findings.