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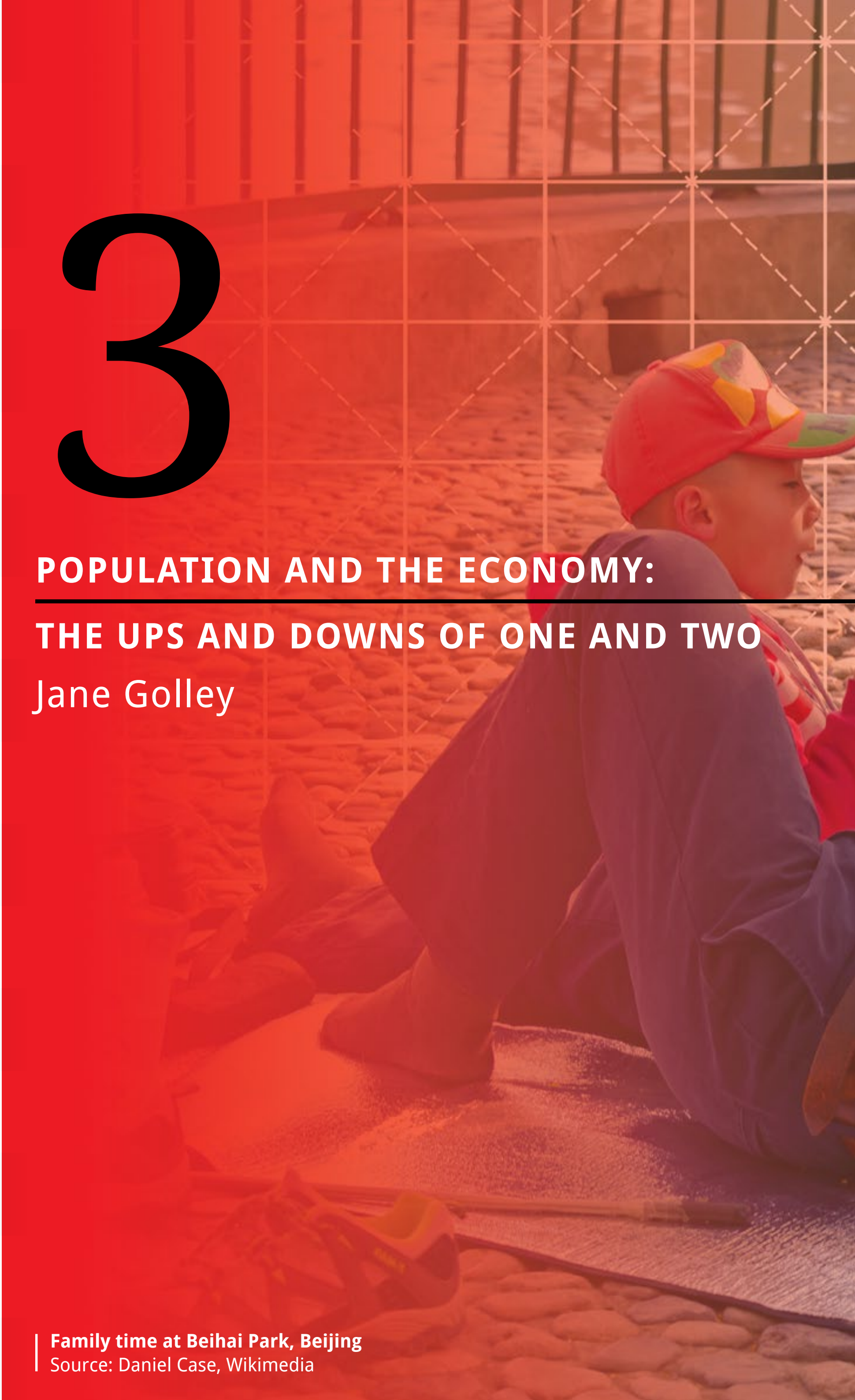
POPULATION AND THE ECONOMY: THE UPS AND DOWNS OF ONE AND TWO

Jane Golley



Family time at Beihai Park, Beijing
Source: Daniel Case, Wikimedia

ON 1 JANUARY 2016, the Chinese government formally abolished the One-Child Policy, replacing it with a Two-Child Policy. This decision ended three and a half decades of the strictest form of population control the world has ever seen. It did not end population control altogether.

Many commentators were quick to denounce the new policy as 'too little too late'. They emphasised the enormous costs of the One-Child Policy, including rapid ageing of the population, rising gender imbalances, and the emotional, physical, and material costs borne by all of the people who (willingly or unwillingly) complied with the rules, and all those who didn't.[1] They further criticised the Chinese government for its insistence on remaining in control, rather than letting go, of family planning altogether and giving Chinese couples the full freedom to determine their own family size.

Meanwhile, the official Chinese line immediately stressed the (mainly economic) benefits that the new Two-Child Policy would bring. According to the National Health and Family Planning Commission (NHFPC), these include a predicted addition of more than thirty million people to China's labour force by 2050, and an annual increase in the rate of GDP growth of 0.5 percentage points.[2] Chinese newspaper articles throughout 2016 covered a variety of topics from the need for better childcare and early education systems, to the dangers of having babies in 'advanced maternal age' 高龄产妇, the surge in demand for 'postnatal attendants' 月嫂, and the expected boom that more Chinese babies would bring to the Spanish dairy industry. (See Information Window 'In the News' on the facing page.) On the various costs attributed to the One-Child Policy by others, state media (not surprisingly) had very little to say.

The links between population growth and economic performance are complex and contentious, and nowhere more so than in China. This chapter explores some of these links through the eyes of an economist, in the context of the possibility that Chinese people will respond to the Two-Child Policy by actually having two babies now that they are allowed to. Another possibility — and a more likely one, according to a string of demographic research on the topic — suggests an alternative future in which China falls into a 'low-fertility trap', consistent with other countries in the region, including Japan and Korea.[3] A question in the background of what follows is: would such a 'trap' really be a bad thing?

It is worth noting that the strict One-Child Policy only applied in urban areas for most of its duration (with a nationwide relaxation in 2013 allowing urban couples to have two if either of the couple was an only child themselves). Most rural people were allowed to have a second child as long as the first was a girl, and ethnic minorities (including Tibetans and Uyghurs) were exempt altogether. Reflecting these variations, the term One-Child Policy is rarely used in China, with the less dramatic 'Birth-Plan Policy' 计划生育政策 being far more common. That said, I use the terms One- and Two-Child Policy in what follows.

IN THE NEWS, by Jane Golley

The Chinese media published a wide range of news stories relating to the Two-Child Policy in 2016. Collectively, they implied that a veritable 'baby boom' is already well underway. It will take time for official statistics to confirm or deny whether this is the case (and more time still to determine whether those official statistics are accurate or not). Some examples include:

A *yuesao* looking after her ward
Photo: Nicolepeach, Flickr

- In Linyi city in Shandong province, early education centres are developing rapidly, with annual tuition fees predicted to reach up to RMB 10,000 (AU$2,000) because of the new policy, which is expected to boost demand for children placements. The growing demand for education for children aged six and under in China's highly competitive education system is related to parents' desire for their young children to 'expand their social networks' 社交圈子大点 and to ensure that they are not 'losing at the starting line' 输在起跑线. More broadly, there have been numerous calls for expanded access to childcare and early education so that having a second child does not derail the parents' career prospects.
- Numerous articles predicted that over fifteen million babies will be delivered in China in the next five years, stimulating consumption and promoting China's economic development. (My own analysis shows the first of these claims to be true, but not the second.)
- In Shenzhen, Guangdong province, one of China's wealthiest cities, there has been a surge in demand for 'postnatal attendants' (*yuesao*) following the policy change. *Yuesao* salaries are predicted to increase rapidly to RMB 20,000–30,000 per month (AU$4,000–6,000). These *yuesao* provide services that the vast majority of Chinese mothers (and indeed most parents around the world) can only dream about: including food preparation and nutrition advice for the new mother alongside postnatal care of the baby.
- By contrast, a story from Hainan stressed how the island lacks enough gynaecologists and nursing staff to cope with the expected baby boom in 2016.
- In Jiangsu province, readers were informed of the dangers of 'advanced maternal age' based on two women aged thirty-four and thirty-six — not particularly 'advanced' in the context of developed countries these days — experiencing antenatal haemorrhaging; fortunately both mums and babies survived. From Shanghai came a related story about advanced maternal age and the increase in the number of caesareans and use of IVF.
- One article suggested that the end of the One-Child Policy would solve the problems of the Spanish dairy industry, given the Chinese appetite for foreign infant formula and milk powder. Another predicted benefits for the Australian and New Zealand dairy industries as well. (My modelling work suggests that none of these countries would be wise to rely on a Chinese baby boom alone.)

Babies and Growth: Why Less Can Mean More

Thomas Malthus
Source: Wikimedia Commons

China's exceptional economic growth performance over the last four decades has coincided with equally remarkable demographic change. There is now plenty of evidence to suggest that the potential demographic 'dividend', 'gift' or 'bonus' associated with a country's demographic transition towards slower fertility and population growth, and, therefore, a growing share of the population engaged in — rather than depending on — the workforce, can be substantial. In China's case, according to some estimates, this demographic dividend can explain as much as one quarter of its per capita income growth since the 1980s. As the world's fastest growing economy during this period, this has amounted to a substantial gift indeed.

The idea that a slowdown in the rate of population growth boosts per capita income growth dates back to Thomas Malthus's classic *An Essay on the Principle of Population*, first published in 1798. This 'population pessimism' was taken up in the late 1950s by a number of development economists who asserted that the 'demographic transition' from high fertility and mortality rates to low ones, hence lower population growth, was good for economic development — in other words, that rapid population growth was not.[4]

Mao Zedong was, by contrast, a 'population optimist'. He believed that 'the more people we have, the stronger we will be' 人多力量大. Yet the first three decades of Communist Party rule saw rapid fertility decline, precipitated by improvements in health care, female education, life expectancy, and infant mortality, rather than strict family planning policies. Despite this, China's population still increased by 400 million between 1949 and 1976 (the year of Mao's death). Growing recognition, including by Mao himself, of a pending 'population problem' led to the 'later, longer, fewer' policy in 1970 that called for later marriages, longer spaces between

births, and fewer children per couple. Thus began the Chinese government's attempts to control the fertility decisions of its citizens.

Unlike Mao, Deng Xiaoping was a population pessimist. In February 1980, he set demographic goals including a target population of 1.2 billion by 2000, with a population growth rate of zero by that time. These were specifically intended to support his goal of quadrupling China's per capita income between 1980 and 2000. The One-Child Policy was introduced in September 1980, signalling Deng's clear commitment to achieving these goals. While Deng's demographic targets weren't quite met by 2000 (when population had reached 1.269 billion), the per capita income goal was achieved by 1996. China's present leaders readily credit the role of the One-Child Policy in achieving this goal, claiming that it averted 400 million births during its first three decades. While more careful analysis by demographers puts the figure closer to 250 million, there is no question that China's population growth has slowed substantially since 1980, and that the One-Child Policy was a significant contributor to this slowdown.

With higher per capita income has come better nutrition, rising levels of education, longer life expectancies, and higher living standards for the vast majority of Chinese people. The One-Child Policy, however controversial, deserves some credit for these outcomes. Many of those 250 million people — had they been born — might have joined the ranks of the hundreds of millions of Chinese people still living in poverty today, as well as contributing to problems of environmental degradation and food security. In fact, *The Economist* ranked the One-Child Policy as the fourth-largest contributor to global greenhouse gas emission reductions between 1989 and 2013 — with its contribution amounting to a reduction of 1.3 billion tonnes of carbon dioxide equivalent.[5]

This is not to deny the substantial costs of the One-Child Policy, and the challenges it has brought with it. One of these challenges is the rapid ageing of the Chinese population, with the United Nations projecting aged dependency to more than double between 2010 and 2030, and nearly double again by 2050. This, according to most analyses, will bring China's 'demographic dividend' to a sudden end. It will also place China in the unique

position of 'growing old before growing rich' 未富先老, in other words, of being a transitional, developing economy facing what has until now primarily been a problem for developed countries: having a population with more aged dependents and fewer workers.

One-Child Policy propaganda
Photo: Andrea Felker, Flickr

Further economic costs have been shown to stem from a workforce comprised of single children who have been criticised for becoming spoiled 'little emperors', and have been shown to be 'less trusting, less trustworthy, more risk averse, less competitive, more pessimistic, and less conscientious individuals.'[6] These single Chinese children at the bottom of the 'four-two-one' family structure (four grandparents, two parents, and one child) themselves face a significant burden in terms of supporting their parents.

Even more consequential is the contribution of the One-Child Policy to the rapid rise in gender imbalances in China in favour of males.[7] Other immeasurable costs result from the emotional fallout from not being allowed to determine the size of your family, forced abortions, and penalties for having an unauthorised second child, including their inability to enrol in school or to access the health care system.

Time for Two?

There is no doubt that China is confronting a relatively rapidly ageing population, as shown in Figure 1. The question is whether higher fertility rates are the best solution to this problem. Projections based on the United Nation's Population Prospects for 2015,[8] 'high-' and 'low-' fertility scenarios illustrate that higher fertility rates from a Two-Child Policy may have only a minimal effect on reducing aged dependency by 2050. Moreover, a

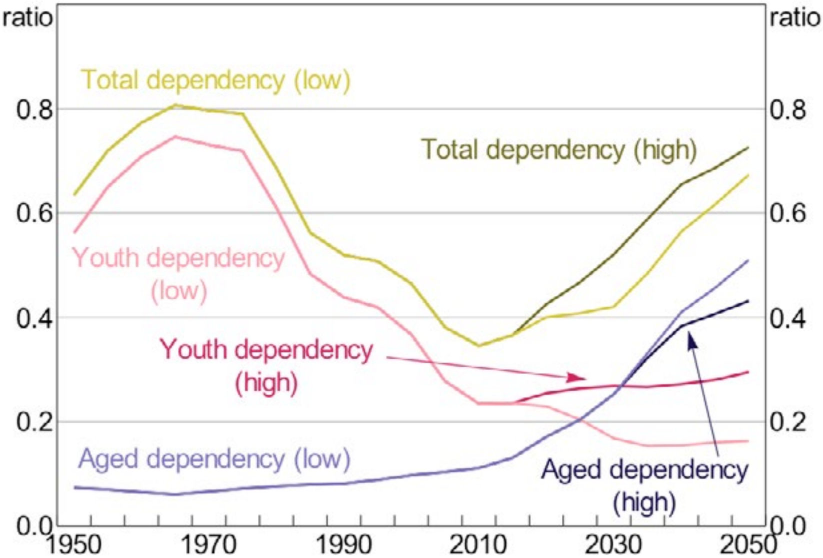


Figure 1. Age Distribution Based Dependency Ratios in China, 1950–2050
Source: United Nations Population Prospects 2015

rise in youth dependency would ensure that total dependency (the sum of youth and aged dependency) is higher, not lower, under the high-fertility scenario.

My ongoing research with Professor Rod Tyers from the University of Western Australia demonstrates that China's demographic dividend may not all be in the past.[9] Age-based measures for understanding the links between demographic change and economic growth are misleading, because they fail to take into account the number of actual workers in the population — as opposed to those of 'working age'. Our research shows that a more accurate measurement of total dependency may fall well into the future — and conversely,

Note

Youth and aged dependency are defined respectively as the ratio of the population under fifteen years of age and the population aged over sixty-five years to the population aged between fifteen and sixty-five. High and low refer to the United Nation's high and low fertility scenarios, on which projections from 2015 onwards are based. The labour force participation rates of each age group are not considered in the construction of these dependency ratios.

Little is likely to change in rural China
Photo: Samuel Vigier, Flickr

that the share of the working population will continue to rise — whether the fertility rate is high or low.

In our most recent paper with Yixiao Zhou of Curtin University,[10] we use a dynamic global economic model that is integrated with full demographic behaviour (including the age, skill, and gender compositions of the population in each of eighteen regions, of which China is one) to project demographic and economic changes through to 2050. Our results show that fertility rates consistent with a Two-Child Policy would indeed contribute to higher rates of GDP growth, and a lower proportion of people over sixty-five in the Chinese population in the decades ahead, as well as providing a modest spur to domestic consumption (since children consume but don't save). Yet these impacts would amount to less than half a percent per year of GDP growth (close to the NHFPC's official estimate) and a reduction in aged dependency of only 0.03 percentage points. Furthermore, they would come at a significant cost in terms of per capita GDP, reducing its level by twenty-one percent in 2050 compared with the low-fertility alternative.

Changes in fertility patterns also have implications for the skill composition of the labour force. This, in turn, affects productivity and hence the level of investment, prices, and competitiveness across the economy. In China, workers from rural areas tend to be less skilled than those from urban centres. During the first three decades of reform, despite the laxer

family planning policies in most rural areas, fertility in the rural population declined dramatically, with the proportion of workers in the rural population surging as a consequence.[11] Were the rural population to start having more children, real unskilled wage growth would slow, due to a relative abundance of unskilled labour.

A greater supply of unskilled labour would sustain China's competitive edge in unskilled, labour-intensive manufacturing. But it would slow its journey towards a developed economy based on higher wage, technologically–based industries and a more sophisticated service sector, the direction clearly indicated in the Thirteenth Five-Year Plan (see Chapter 1, 'What's the Plan?, pp.xxvi–15). China would then be in danger of falling into what economists call the 'middle-income trap', in which a developing economy sacrifices its competitive edge in manufacturing to rising wages but is unable to catch up with developed countries in the high-value-added market. This point holds broadly for higher fertility rates among the urban population as well.

Ultimately, the economic impact of the Two-Child Policy will depend on how people actually respond to it. I predict that little will change in rural China, partly because the One-Child Policy has not been strictly applied there for decades now, and also because rural incomes remain relatively low. The most often-cited reason for not wanting to have more children among rural people is that they simply can't afford them. In urban areas, anecdotal evidence suggests that time, rather than money, is the main constraint on couples contemplating a second child: the most common response I've had to the question of whether they want another is: 'No way, we don't have time'. This hunch is supported by a growing number of demographic analyses predicting that China is headed for a 'low-fertility trap', based on evidence that the most developed provinces and cities, such as Jiangsu and Shanghai, are already in one. Based on the logic presented here, this may not be such a bad thing.

Too Many Men!

In 2015, China recorded an official sex ratio at birth (SRB) of 113.51, making it well and truly the most gender-imbalanced country in the world — a rank it has held since the mid-1980s, when its SRB first moved into the 'abnormal range' (above 107). In some provinces, the ratio has been close to 130, and exceeds 160 for second-order births. These unpleasant statistics are compounded by China's severely abnormal rates of excess female child mortality — eighty boys for every hundred girls died in their first year of life in 2005, compared with a global ratio of around 120. While women in China, as elsewhere, have higher life expectancies than men, the combination of high SRBs and female infant mortality has left China with the world's most unbalanced sex ratio, at 106 males to 100 females in 2015, compared with the global average of 101 to 100.

This is a multifaceted problem, according to demographer Christopher Guilmoto.[12] Beyond a strong cultural preference for sons, three other factors, all present in China until recently, motivate deliberate sex selection. First is the 'fertility squeeze', brought about by parents wanting or needing to limit how many children they had — the One-Child Policy being the clearest example. Second is the 'ability' to limit the number of girls that are born, which came with the widespread use of ultrasound B technology to detect a baby's gender, beginning in the mid-1980s. And third is 'readiness', including the social and legal circumstances that allow parents to take advantage of the options available to them: the official determination to keep birth rates down meant the authorities turned a blind eye to sex-selective abortions as well as outright female infanticide.

While Chinese officials have been reluctant to attribute the rising gender imbalances to their family planning policies, they are well aware that the problems are substantial.[13] In 2011, the Chinese government made reducing the SRB a national priority, aiming for 115 newborn males for every one hundred females by 2015 — a target that, like virtually all such targets, they officially achieved.[14] One news headline in January 2016 announced that 'China sees drop in birth sex ratio for seventh year running', from 119.45 in 2009 to 113.51 in 2015, crediting a crackdown on illegal

China's unbalanced sex ratio: 106 males to 100 females
Photo: Dai Junwei, Flickr

prenatal gender testing and selective abortions. The article notes that the Two-Child Policy will help to reduce China's gender imbalance, but concludes that 'the fundamental and permanent cure lies in improving women's social status and achieving gender equality'.[15]

Following the announcement of this new national priority in 2011, Rod Tyers and I explored some of the economic consequences of China's rising sex ratio at birth (while acknowledging the many non-economic ones as well), using a global model that projected both economic and demographic outcomes through to 2030.[16] We based our modelling on three key points.

First, we looked at the work of economist Shang-jin Wei 魏尚进 and his colleagues at Columbia University. Their empirical analysis of cross-provincial Chinese data showed that close to half of the rise in China's household savings could be explained by the number of excess men in any given province. Their logic was centred around a competitive marriage market in which single men save more to increase their chance of finding a wife.

Will it become increasingly difficult for Chinese men to find a wife?
Photo: Michemma, Flickr

High saving rates, in turn, provide the funds for domestic investment and hence domestic output expansion. They also have international implications, with the excess of savings over investment fuelling China's current account surplus — basically, its excess of exports over its imports — and the US current account deficit. Indeed, Shang-jin Wei and his co-author Qingyuan Du concluded that, while 'the sex ratio imbalance is not the sole reason for global [economic] imbalances, it could be one of the significant, and yet thus far unrecognised factors'.[17] The implication was that China's sex ratio imbalance played an indirect but possibly major role in the 2008 Global Financial Crisis. We wanted to know if they were right.

Second, we considered the phenomenon of hypergamy — that is, the practice of women choosing to 'marry up' — and its implication that the least 'desirable' men would end up being unmarried, or 'excess'. Our model distinguished between skilled and unskilled workers, and between genders, so we were able to separate out the unskilled men and project how many of these would remain single depending on our assumptions about who married whom. As a result, we predicted a huge gender gap by 2030:

in the range of eighteen to forty-eight million ‘excess’ Chinese men potentially wanting to marry but unable to find a wife.[18]

Third, we considered the work of Lena Edlund and her co-authors, also from Columbia University, which linked the increase in China’s sex ratio to a rise in property and violent crime. We took this link one step further and suggested that a rise in the sex ratio would decrease labour productivity (since you can’t very well be productive when you’re out committing crimes), especially among unskilled male workers, whose marriage rates were lowest.

To examine the future consequences of projected ongoing declines in the SRB, we ran a baseline projection for the model in which the SRB remained at current (unbalanced) levels through to 2030. We then ran simulations that projected ‘gender rebalancing’, by allowing the SRB to trend towards normal levels by 2030.

We found that lower Chinese household savings (the consequence of a falling SRB) would reduce funds available for investment, and therefore have a negative impact on both GDP and per capita income. This illustrated the point that gender rebalancing will exact a cost on the economy just as the imbalances of the past have had economic benefits.

Fortunately, this negative economic impact was offset by the positive impact of gender rebalancing on the reduction of crime and an increase in productivity among unskilled male workers. This, in turn, would boost investment, GDP, and per capita income. However, things could go the other way if, say, the impact on savings was bigger and that on productivity smaller than implied by both Wei and Edlund.

In sum, our modelling showed that gender rebalancing would have a fairly small impact on the Chinese economy over the time period studied — mainly because it takes time for changes in birth rates to lead to changes in the workforce. We found that global impacts were small too, which challenges Wei and Du’s dramatic claim above. China’s gender imbalances are nothing to be proud of, but at least we managed to show they didn’t cause the Global Financial Crisis!

Could this scene soon be a thing of the past?
Photo: Andrea Felker, Flickr

Who's in Control Now?

After three and a half decades of strictly controlling the fertility decisions of its vast population, the Chinese government has now relinquished some, albeit not all, of that control. Regardless of any possible economic implications, I applaud the non-economic benefits of this shift, including the new, if incomplete liberty it affords Chinese citizens to plan and have the kind of family they desire. However, as an economist, I believe that a Two-Child Policy is not the best option for tackling either China's slowing economic growth or its ageing population. There are better ways of increasing labour productivity and labour force participation rates — for example, by extending the retirement age to sixty for women and sixty-five for men (as has now been done), as well as more complex reforms to the education, welfare, and the *hukou* 户口 system. Combined with low fertility, such measures would boost labour productivity and hence increase China's chances of breaking the 'middle-income trap'.

At the time of my research on gender imbalances, I posited that the relaxation of the One-Child Policy (alongside numerous other factors) might contribute to a declining sex ratio at birth. Now I'm not so sure. I think it is likely that it will be the richest urban Chinese who take greatest advantage of the Two-Child Policy, particularly those whose first child was a girl. If their determination to have a son is strong enough, and laws targeting sex-selective abortion are weak enough, it is possible that the gender ratio could worsen, not improve. This is not an outcome that anyone should welcome. The government's control over highly personal decisions about family size has weakened, and that is a good thing. Its control over preventing the abortion of unwanted girls has strengthened, and so it should.

NOT QUITE GOING TO PLAN — OLDER MOTHERS AND THE TWO-CHILD POLICY,
by Siodhbhra Parkin

Mother and daughter
Photo: Kirstin Huntley, Flickr

According to the National Health and Family Planning Commission 国家卫生和计划生育委员会, the amendment to the Law of the People's Republic of China on Population and Family Planning 中华人民共和国人口与计划生育法 encouraging married couples to have two children rather than one child will allow an additional ninety million couples in China to have a second child. Of these prospective parents, sixty percent are estimated to be older than thirty-five years, and fully half over forty. This has raised questions about how effective this policy shift will be in boosting China's fertility rate. It also raises questions about the impact it will have on the health and status of Chinese women in general and older women in particular.

One year after the unveiling of the Two-Child Policy, the hoped-for baby boom has been slow to materialise. One reason is that the implementation of the Two-Child Policy has been marred by delays and uncertainty. Many parents held off on a second child until they could be sure their local- or provincial-level governments had stopped fining couples for unplanned births and that maternity leave and other benefits would be available. The official total fertility rate for 2015 was China's lowest ever: 1.05 children per woman. (For comparison, the global average total fertility rate for 2010–2015 was 2.5.) This was despite the fact that more couples than ever before were given permission to have a second child before the privilege was made universal. Many parents are wary of the high economic costs of raising a second child, or have a preference for a single-child family. Whatever the reason, at the end of 2016, Chinese media was estimating that only 950,000 additional births could be attributed to the policy change.

Then there are the concerns specific to older mothers. Compared with younger women, women aged thirty years or over are significantly more likely to experience serious health issues in pregnancy. Given widespread pressure on Chinese women to give birth before thirty, Chinese hospitals may prove ill-equipped to deal with these risks as many medical professionals have not had to deal with problems associated with older women giving birth.

In addition, China has one of the highest rates of births by caesarian section in the world. During the heyday of the One-Child Policy, close to fifty percent of Chinese women chose or were pressured into giving birth to their presumed only child by C-section, which was touted

as being safer for the child. It is also worth noting that C-sections generated more revenue for hospitals. Now, as millions of women who have delivered by C-section in the past explore the possibility of giving birth a second time, there is a shortage of medical professionals with experience handling the complications that could arise.

Many Chinese women are also wary about what a second child might mean for their professional lives. China's maternity leave policies, which permit women to take up to four months off work with full pay, already make it difficult for many women to be seen as competitive hires in a crowded marketplace. There is concern that employers will now take a potential second round of maternity leave and benefits into consideration when making decisions about hiring or promoting women of childbearing age. Relevant national and local government departments have yet to clarify whether the benefits currently extended to first-time mothers through the national insurance scheme will cover them the second time around, meaning that the Two-Child Policy might prove especially costly for employers. This directly threatens the modest successes some Chinese women have claimed in decades of struggle against gender inequality at work.

With the Two-Child Policy, Chinese women may have marginally more freedom over their reproductive choices, though only time will tell if the second-child policy will resolve some of the demographic ills it ultimately seeks to remedy. Whatever the result, however, the excesses of the One-Child Policy will continue to leave an indelible mark. Under the One-Child Policy, millions of Chinese women were persuaded or forced to be sterilised, and many more have grown older without the expectation of being permitted to have another child. The Family Planning Commission may have performed its work too well.

Three-child policy?
Photo: vhines200, Flickr

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