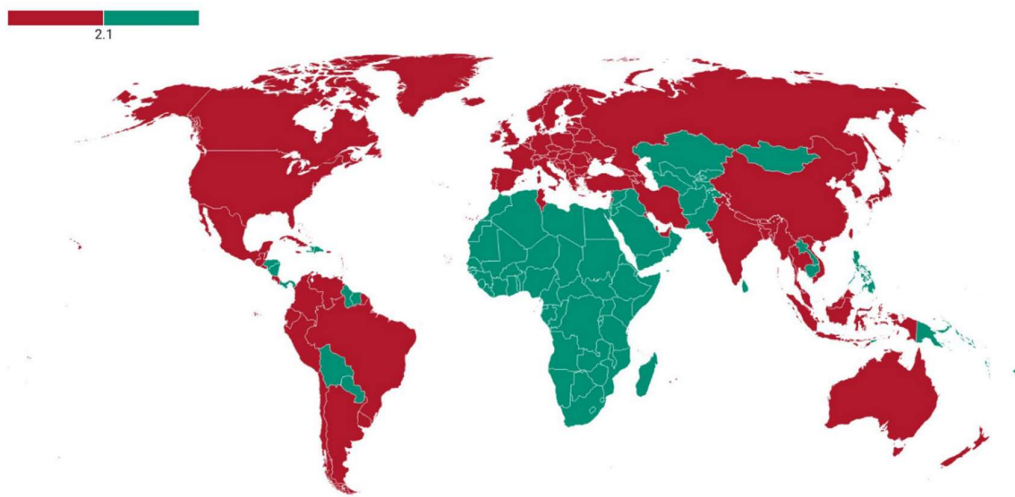


ADDRESSING THE GLOBAL FERTILITY CRISIS: MAJOR DRIVERS OF BIRTHRATES AND A 'FERTILITY STACK'



Daniel Hess

Paul Morland

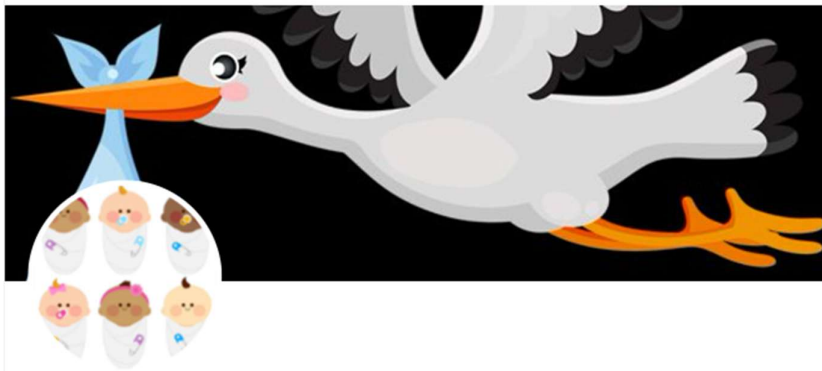
Presented at the Natal Conference in Austin, Texas

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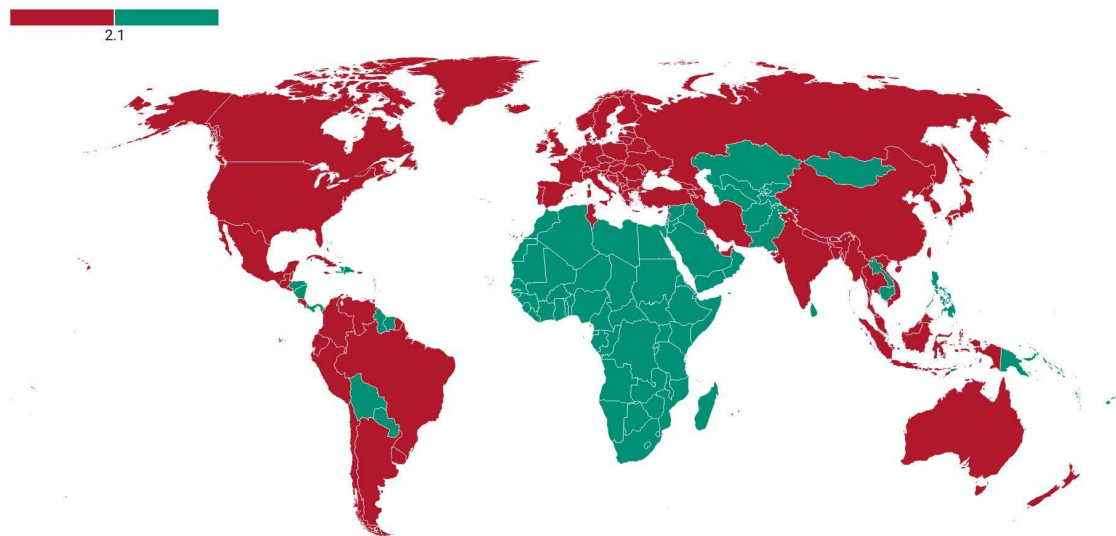
Background

1. Introduction

We contend that the crisis of low and falling birth rates is the most urgent problem facing humanity.

There was a time when the problem of people having too few children was associated with the wealthy, the white and, to a considerable extent, the Europeans. Not far behind were North Americans. But as with many features of 'modernity,' however defined, persistently low fertility has spread to the wider world. Today, within the Americas, the United States has far from the lowest rate of fertility: in the US the total fertility rate was around 1.6 births per woman in 2024, but in Chile it was just 0.88.¹ As recently as 1970 Mexican women were having four children more than Americans: today, Mexican women are having fewer. And while every European country remains in the fertility doldrums, the situation in much of East Asia has gotten far worse: women in France (among Europe's most fecund) have twice as many babies as those in South Korea (Asia's least fecund).² While there are holdouts with high fertility, most of them in sub-Saharan Africa, they are becoming fewer and fewer in number. The population of major countries like China (until recently the most populous on the planet), Russia and Japan are falling. Most of Europe would be seeing population decline too, were it not for immigration. In Germany, a particularly severe case, there are nearly three deaths each year for every birth.³

UN Total Fertility Rate by Country, 2023



Created with Datawrapper

The public's awareness of the unfolding fertility crisis is limited. Many still hold to Malthusian notions of global over-population which are fifty years out of date. Such views have been reinforced by misguided though worthy concern about the environment. Government attitudes, meanwhile, vary widely. Of course, there remain places in the developing world afflicted by poverty where women lack access to family planning, and efforts

by authorities there to increase access to education and enable women to take control of their own fertility are laudable.

But where the fertility rate is below replacement – nearly across the whole developed world and increasingly across the developing world – government responses are mixed. Some governments, like that of Hungary, are making efforts to increase the fertility rate among their highest national priorities.⁴ Others, like that of the UK, have until now mostly ignored the problem.⁵

Overall, as the world shifts from high to low fertility rates, more governments are introducing pro-natal policies and fewer pursuing efforts to reduce the birth rate.⁶ But it is far from clear what policy-makers or indeed the concerned public and civil society are supposed to do. Before we can get clear-headed on the appropriate action to take to address this issue, it is important to some clarity on its causes. And there are plenty of causes. Falling and low fertility has many potential explanations. The explanations vary from the material (too much or too little prosperity) to the cultural.

The objective of this paper is to unpick the factors that are driving fertility rates, both positive and negative, those tending to boost it and those tending to depress it. The state of childbearing across the world is indeed curious. The lack of births is an exceptionally widespread phenomenon, experienced across continents, impacting countries rich and poor alike, highly-developed and under-developed, countries of all religions and with varying levels of religiosity, countries with radically different conditions and attitudes. Locally there is a tendency to attribute the lack of births to local conditions but then there always seem to be countervailing examples from elsewhere. ‘It’s all about expensive housing.’ Then why is fertility so low in many places where is not that expensive? ‘It’s all about unaffordable or inaccessible childcare.’ Why is it then still so low even where childcare is affordable and accessible? ‘It’s all about this or that religion or ideology.’ Then why can we find societies with the same religion or religiosity and yet radically different fertility rates? We need to examine both societies where fertility rate is low and has slumped and those relatively few (particularly in the developed or partly-developed worlds) where it has not.

It is a very normal scientific attitude, going back at least to the fourteenth century English philosopher William of Ockham, to look for simplicity in explanations. The scientific and social-scientific search for the holy grail or the silver bullet, to deploy two cliches, is common across intellectual endeavor. But simplicity will not do in this case, however much we might wish that it would. If we want to grasp the causes of the global fertility slump, we have to look widely, accept causal multiplicity and forgo the intellectual satisfaction of parsimony in our explanation. (And it makes sense that fertility will be multifactored. A number of things need to line up to have children: an inner motivation and ethos, a partner one wants to have children with and sufficient commitment, housing that is suitable, means of support, the time and flexibility to raise kids and more.) If we want to reverse low fertility, it is likely that not only will we have to adopt different approaches at different times, reflecting the diverse nature of the diagnosis, but we will also have to take a long-term perspective (this will be the work of generations) and accept that a degree trial-and-error and experimentation will be required.

In this document we will examine the wide variety of ostensible causes of the fertility slump, testing and comparing them, with the intention of providing interested parties from concerned citizens to policy-makers with a state-of-the-art guide. But first we need to address a fairly straight-forward question which both of the authors have written on elsewhere:⁷ why does the lack of births matter at all?

2. Why It Matters

We believe that the problem of low and collapsing fertility is the greatest challenge facing humankind today and that it may turn out to be the greatest challenge humankind has ever had to face. If this is the case then it behooves us to pay it the greatest attention and to attempt the greatest understanding of the factors at place. But before get to the fertility factors, we want to make the case for the urgency of the fertility crisis rather than take it for granted.

Of course, we don't want to simply reduce people to mere economic units or cogs in a machine. The preciousness of humanity is not simply about numbers. And for many religious people, the value of having children is a given, a divine duty and gift. The first commandment to Adam in the Bible is to be fruitful and multiply; it is repeated to Noah.⁸ In Judaism and Christianity the value of children is plain, underscored by the stories of the unhappiness of women who couldn't have children such as Sarah, Rachel and Hannah.⁹ Similar attitudes are also be found within Islam.¹⁰

But as much as it feels uncomfortable or dehumanizing to talk about people in terms of numbers, we have to do that to see clearly what is happening. The numbers tell an alarming story and we have no choice but to pay attention. Most of us, secular and religious alike, are sensible people trying to do what is best for the future. We live in a society and if our society isn't healthy or facing decline, we have to figure out what is going wrong and try to fix it.

Fertility isn't stabilizing, it is collapsing

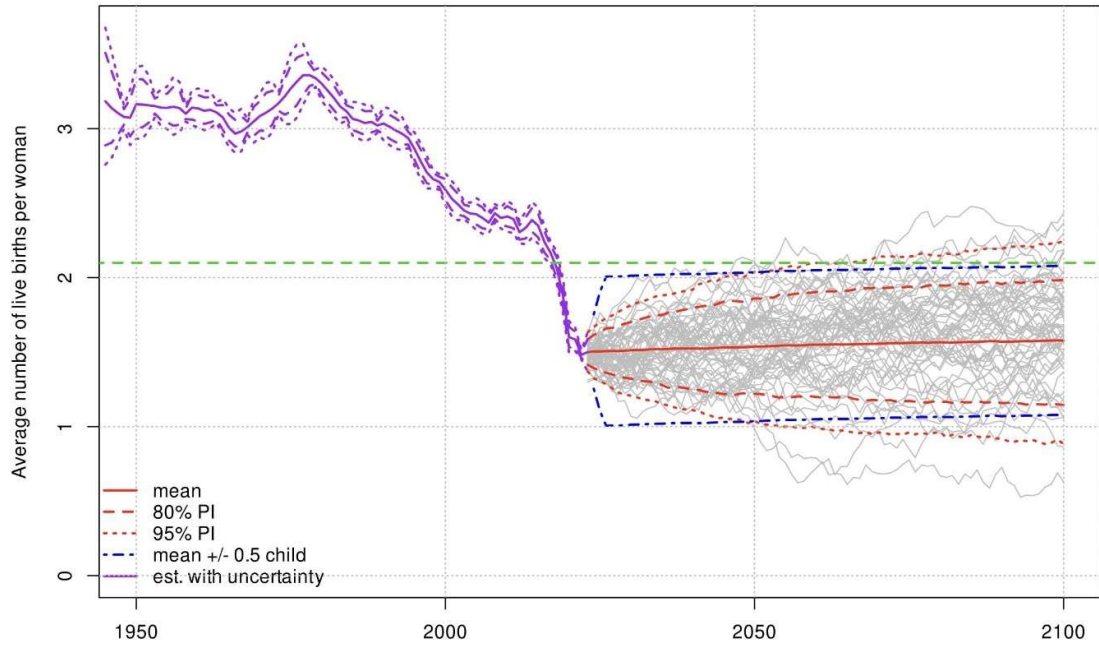
In 1968 when Paul Ehrlich published *The Population Bomb*, the total fertility rate was 6.51 births per woman in China, 5.76 births per woman in India and 5.2 births per woman in Brazil. If those rates had continued indefinitely, there would have been big problems. Whatever the carrying capacity of Earth (and the fact that the world is better fed than ever shows that it is a lot higher than Ehrlich thought) it certainly isn't infinite.

From that perspective, falling birthrates seem like a good thing. Unfortunately, the data show we have blown past 'balanced' birthrates in most countries and now things are crashing. Demographers generally assumed that falling birth rates would settle down to around replacement and then hover there. That hasn't happened. Almost no country that fell below replacement is managing a 'soft landing.'

America's fertility is only 1.6 births per woman, just 75% to 80% of replacement and far below the 2.7 children American women say they want (according to a 2023 Gallup poll).¹¹ America makes up the difference with immigration, but soon all but the poorest and least-educated countries will face a demographic shortfall. The pool of skilled potential immigrants from around the world is drying up.

Meanwhile, the United Nations' projections that are widely relied on are perennially much too high, based on the false hope that fertility rates will instantly stabilize after a precipitous fall. Every year, fertility instead continues its trend downward. For example, here is Argentina, according to the UN:

Argentina

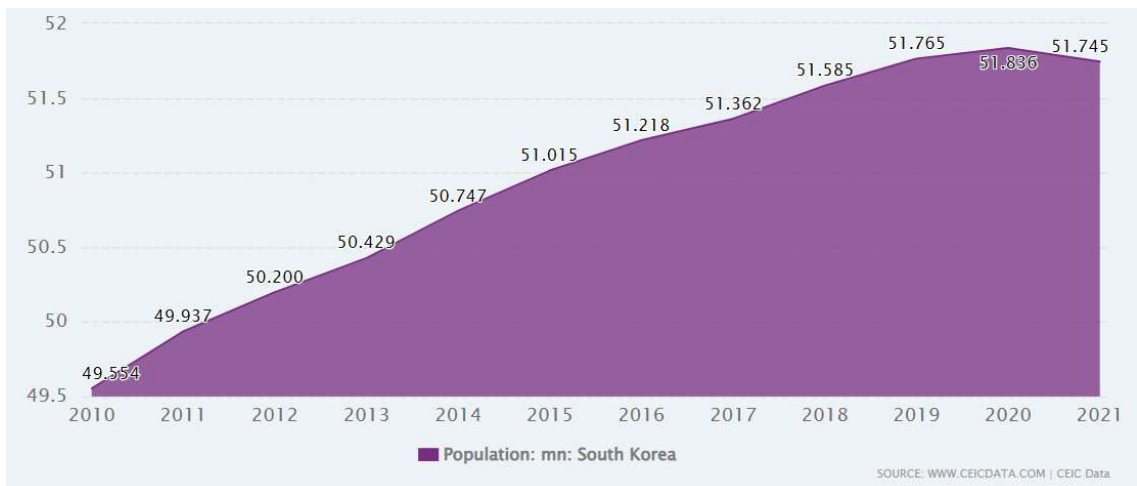


© 2024 United Nations, DESA, Population Division. Licensed under Creative Commons license CC BY 3.0 IGO. United Nations, DESA, Population Division. *World Population Prospects 2024*. <http://population.un.org/wpp/>

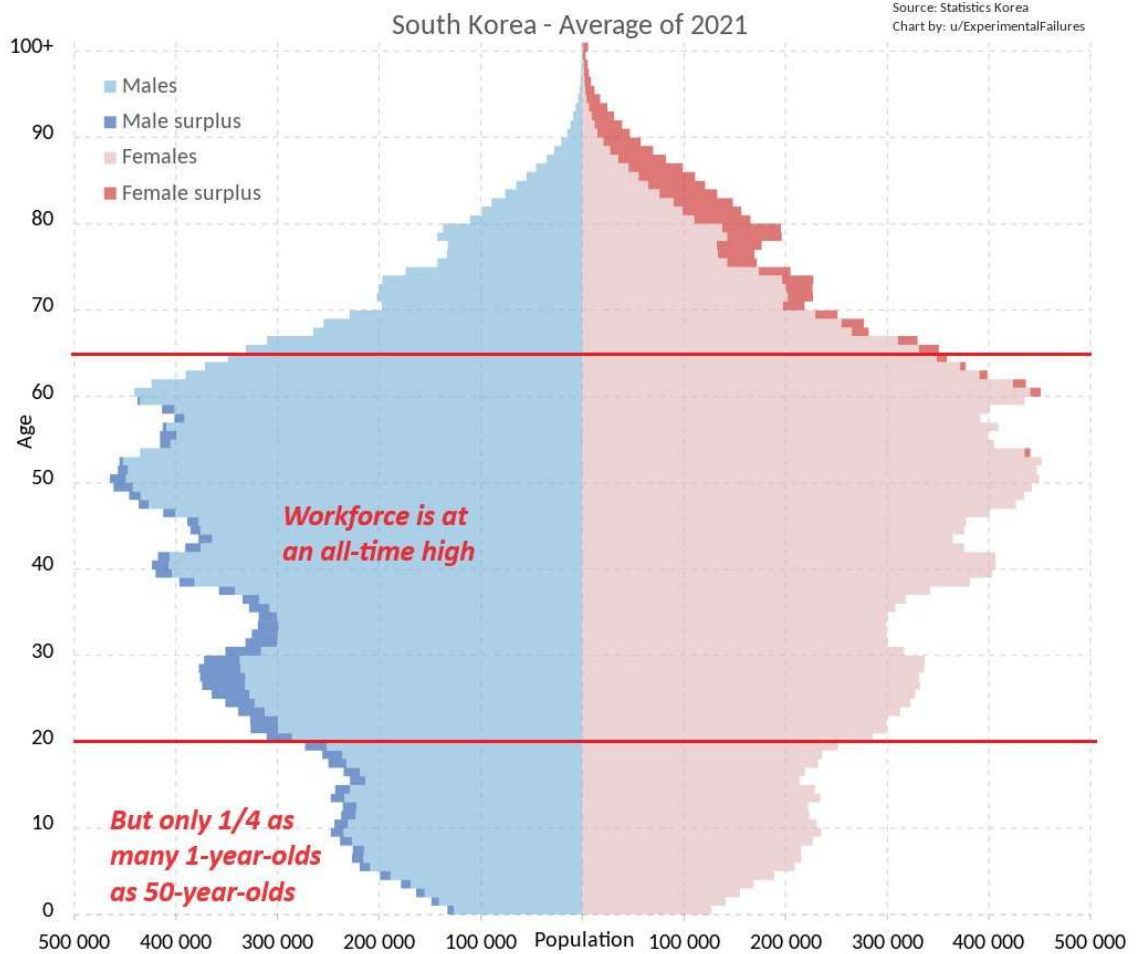
Somehow Argentina’s crashing birthrates will magically stabilize in an instant, the UN optimistically projects. (Spoiler, Argentina’s fertility rate for 2024 was apparently just 1.22, already well below the latest UN projections and still falling.)

The total population number deceives us

Most of us think about population wrong. We see total population at or near its highest levels and think that surely the problem must be too many people rather than too few. But total population is a poor metric for what is unfolding. Consider South Korea. If you look at total population, you’ll think everything is fine.



The population pyramid shows the true story.



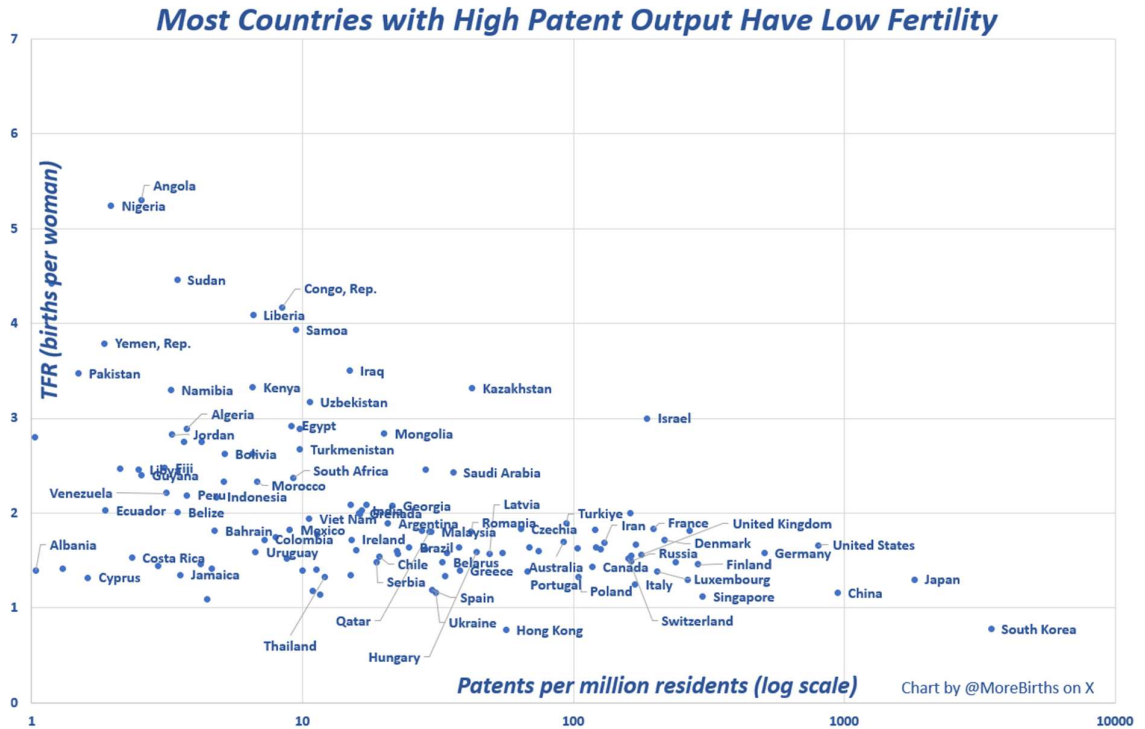
Korea is facing steep decline with a fertility rate that is just 1/3 of replacement. There are so few Korean children being born that for every 100 Koreans there will be just four Koreans three generations out. Korea is dying out, and yet those looking at total population are missing the story.

And what is happening in Korea is happening in virtually every developed country to a greater or lesser extent.

It is precisely the countries leading human progress that have the lowest fertility

Almost all of us share something foundational in our worldview, and that is the idea of *progress*, however you define it. We have come to take for granted that the future will be better than the past. Life expectancies will keep increasing. Technology will keep improving. Science will advance and conditions will continue to improve.

But the very countries that have been driving progress are the ones with the lowest birthrates. Consider patents:



The most innovative country in the world as measured by patents is the one with the lowest fertility, South Korea. Every major innovator but Israel is below replacement. For scientific publishing, the result is similar.

We want human rights to keep expanding and progress as we know it to continue. But all that progress has come on the back of large populations in countries that embrace new knowledge and invest to develop new technology. Those countries are the very ones that are disappearing the fastest. Consider that the parts of the world that are below replacement account for more than 90% of global GDP, and more than 95% of patents and scientific publishing.

As the population of technologically and scientifically advanced countries is set to dwindle, some think that things will be fine because there are poor countries still have a lot of children. But many of those countries are not even interested in carrying progress forward.

Consider Afghanistan. Afghanistan's recipe for fertility is to reject modernity, even to the point that girls are banned from education past the sixth grade.

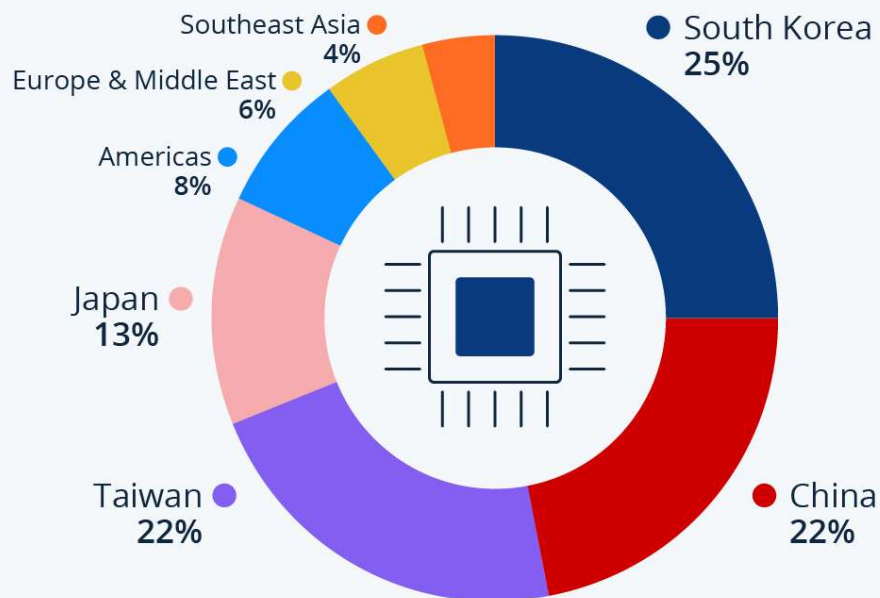
The system that gives Afghanistan its high birthrate bears almost no relation to the scientifically advancing world that most of us want for the future. If progress is the goal, we won't get it by looking to the least progressive countries for our demographic salvation.

Will AI save us?

Many people brush aside the impacts of falling fertility because 'AI will save us.' But making the chips that power AI is one of the most fiendishly difficult challenges in all of manufacturing. And where do we get those chips from?

Where Can the Most Chips Be Manufactured?

Distribution of global semiconductor fabricating capacity in 2022, by location*



* 300mm fabs

Source: SEMI 300mm Fab Outlook to 2026



statista

Uh oh! Chip manufacturing is dominated by South Korea, China, Taiwan and Japan. The fertility rate (births per woman) in those countries was 0.75, 1.1, 0.87 and 1.16 respectively in 2024. Can those chip fabs move to Afghanistan, TFR 4.5? Good luck with that. In 2022, just 37% of Afghans were even able to read according to UNESCO.

Will global trade save us?

The armchair economist will tell us that local problems will all be smoothed over with trade. But what happens when every industrialized country in the world is below replacement? The countries that are above replacement are a single-digit percentage of global GDP.

But there is another more specific problem. The top ship producers by market share are China (47%), South Korea (29%) and Japan (17%), followed by Italy, in fourth place at 1%. These countries are halving every generation. How is global trade even supposed to happen, physically?

What population decline really looks like

There is a fanciful vision that many have of a future world of declining population. There will be fewer of us, people think, but we will be more technologically advanced, healthier and richer. What? Are we forgetting what declining places are really like? Think of Detroit, rural West Virginia, and rural Japan. All are in a state of sad decay. Detroit is pictured below.



What happens to real estate prices in areas that are depopulating? In Detroit, rural West Virginia and rural Japan the answer is the same. When sellers vastly exceed buyers in a town that is losing people, many properties cannot catch a bid at any price, and so they go all the way to zero. Investing to maintain real estate that nobody will buy or rent is a guaranteed way to lose money, and so a great deal of property in such places is just left to decay.

Meanwhile, the recent population trend of these places is the future almost everywhere else. In fact, almost all investment is built on the assumption of growth. Who would invest in a store, factory or company if every year sales will be less than the year before?

We haven't even begun to talk about the impact of declining demography on things like pensions and social benefits programs. Of course, there is no way any of it is sustainable at these rates. The numbers don't even add up now, and the biggest cohorts haven't even retired yet. Governments will go bankrupt everywhere if current trends continue.

Aside from the personal tragedies and disappointments of unfulfilled longing for children and the economic crises headed our way, there is the simple sadness anyone but a misanthropist will feel of whole nations going out of business. Korean civilization is unique; at the current rate of population decline it will become untenable. The same can be said for the albeit gentler population decline underway in most other countries. Each people has a voice, and is a beautiful piece of the world. Even if humanity as a whole is unlikely to breed itself out of existence (somewhere some group or other is likely to continue) many nations and ethnic groups will go the way of the Magi and the Goths, not through long historical processes of fusion and immersion but through the more brutal and sudden demographic processes of

failing to reproduce themselves. All the progress we've made, all the cultures we treasure, all of our hopes for the future are in jeopardy if demographic decline cannot be reversed. Demographic decline ultimately means civilizational decline.

And so, we now turn to understanding the factors and forces surrounding fertility. This is of course a necessary step for turning humanity around from the vortex it is falling into.

This problem, although severe, can be rationally understood and solved. The rules for fertility are not mysterious and unknowable. A lot of them are obvious and none are rocket science. The purpose of this document is to lay them out comprehensively.

3. A Word on our Methods

In this paper we have adopted an approach of highlighting correlations which are strong and have taken a conservative approach in attributing causality. The social sciences have their limits and there are always alternative interpretations available, but we have done our best to account for these. Our philosophy is to follow the data where it leads, and keep in mind the wide body of literature and studies on fertility.

In line with orthodox approaches, we have looked at data both of space (comparison of different societies, cities, and states at single points in time) and of time (comparison of single societies, cities, and states at various points in time). Both approaches have their advantages and there is no inherent advantage in the latter over the former. Comparing France and the UK in 2024, for example, is in many ways more valid than comparing the UK today to its Edwardian past. In all cases there will be many factors at work driving difference over time or over space.

As ever when drawing causal conclusions from correlative data, a certain amount of intuition and common sense are required. Demography does not lend itself to the sort of experimentation and randomized trials that can occur in the natural sciences and the data although rich is not infinite. If we find that density of accommodation correlates with low fertility (which it does), we can consider the possibility that dense accommodation attracts those with low fertility aspirations, but at the same time have to accept that it acts in itself as a disincentive to larger families, given the difficult circumstances it creates for children with no playing space, for adults whose close neighbors are hostile to the noise children inevitably create and the sheer lack of family living space. Likewise, we can consider that those with higher fertility preferences may be attracted to religion, but we cannot wholesale discount the influence religion has in raising people's childbearing preferences and practices.

And we should not dismiss seeming small impacts. An increase in the fertility rate of a country of 0.1 or 0.2 children can help slow the aging of the population and make the management of demographic challenges more feasible. The cumulative effect of small changes can be powerful. Further, we have to accept that this problem has accumulated over decades and will not be solved overnight. A steady and determined approach is required rather than a sudden swing from 'there is no problem' to 'the problem is unsolvable.'

Certain factors seem to be, if not absolutely universal, then very general over both space and time: the higher fertility rate of rural versus urban areas, the higher fertility rate among the more religious, at least in the Abrahamic religious traditions, the positive effect of marriage on fertility. We try below to focus on the most general and significant factors, leaving aside those which appear to be local or disputable. For now, the best evidence suggests that, provided people try to have children at a reasonably early age, they do not suffer greater difficulty in so doing that in the past, so we do not focus on the question of falling sperm counts here.¹² (Of course we do address the main biological constraint of age.)

4. The Concept of a Fertility Stack

As we go over various factors that impact fertility rates, we also want to introduce the concept of a 'fertility stack' which is the simple idea that fertility factors work cumulatively, and the more factors that a place has working in its favor, the higher fertility will be. Low birthrates may seem like a problem that is too big for us to solve, but all sorts of difficult problems become manageable when broken into a series of smaller problems. By no means is it necessary to have every factor, but it will be hard to fix the birthrate crisis if you focus too narrowly.

This model also helps avoid two pitfalls. The first is falling into the trap of thinking that low birthrates are a hopeless problem. Too often we hear people complain that that 'no knows how to solve the problem of low birthrates' because this or that intervention didn't work. In fact, a whole lot of things matter and thus there is a broad range of levers to work on. The second is the related problem of being fixated on one part of the problem and thinking that others focused on a different aspect are misguided or even in opposition to you. If one pronatalist is focused culture and another is focused on family-friendly housing, they are working in complementary ways on different aspects of family formation and are on the same big team.

Where it comes from

Scott Adams, creator of the Dilbert cartoon franchise, introduced the concept of the Talent Stack as a way of maximizing a person's value and ability. He wrote: "Most people can – with practice – develop a variety of skills that work well together. We call this idea the Talent Stack."

In the same way that the more unrelated skills a person has, the more successful they will be, the more fertility factors that are going right with a population or country, the better it will be for its fertility.

A way to understand and diagnose countries and groups

This list or stack of fertility factors provides a great toolkit for understanding what is happening with countries and groups, what the specific causes of low fertility are in those instances, and what they need to work on.

For Latin America, one can immediately see that low marriage rates are a big problem for fertility. For Europe it is marriage but also secularism. For Mediterranean countries meanwhile, it is quickly apparent that young people staying too long at home are an issue. South Korea unsurprisingly scores poorly on a range of factors, from a lack of pronatal ethos to family-unfriendly housing to men who don't pitch in at home, an excess of C-sections and small family norms. That is a lot, but it almost means there are many effective levers for Korea to pull. Israel by contrast does well on many factors, starting with its very pro-natal ethos but Israel too has room for improvement, especially with housing.

Most of us if we encounter a major problem with our vehicle will feel helpless. But a competent car mechanic will have a list of things to check and know what do to so that even if many things are malfunctioning at once, they will be able to eventually get the car back on the road. We think any country with too-low fertility can solve the problem, with a proper diagnosis and enough commitment. This is a toolkit to get started. Many people will have improvements and variations, but we think any model of fertility and how to solve it needs to be multifactored.

The Factors

1. Believing in Children: A Pro-natal Ethos

We have already said that fertility is multifactored and you can't just focus on one thing. Yet if there is one factor should lead the others, it is simply this: How much does society value and prioritize having children?

For a full and balanced understanding of the fertility crisis, it is essential to consider both cultural and material explanations. The binary is not perfect, but it does provide a useful pair of labels under which more specific explanations can be grouped.

But it is not by chance that we start with ethos and belief about fertility. In the hierarchy of needs set out by Maslow, the meeting of the basic day-to-day requirements of food, shelter, clothing and in some climates, warmth comes first. But as more and more people move out of the Malthusian conditions, the choices people make, not least their fertility choices, are likely increasingly to be shaped by values and convictions, themselves shaped to a considerable extent by the surrounding culture.

Don't people everywhere believe that children are good? In fact, there is huge variation in beliefs about the importance of children. How does Israel, crowded, educated, expensive and technological manage a TFR of nearly 3 while Finland the "happiest country in the world" and with a range of family benefits plus a whole lot more space, has a TFR of just 1.25? How does Mongolia have fertility of around 2.7 while China, Thailand, and South Korea all suffer fertility rates of 1.0 or less. These differences are enormous and make no sense unless you understand that people in these countries vary wildly in what may be termed pro-natal belief.

Beliefs about family are already heavily influenced by society

If you say that culture should encourage people to have children, you might face pushback. Some will claim that society and its leaders shouldn't have an opinion on this. Desire for children is a private affair, they may say.

Except that anti-natalists have been on the field for fifty years, advocating for people to have fewer children, both directly and via environmentalism. And they continue to do so, even as fertility falls to far below replacement almost everywhere and country after country faces slow collapse.

As far as fertility is concerned, no set of beliefs are more pernicious than those espoused by Paul Ehrlich, whose book 'The Population Bomb' persuaded a generation or more that the world's greatest problem was too many births, not too few. The book was originally published in 1968, but despite its many predictive errors, despite the failure of the forecast starvation of billions and despite the subsequent plunge in fertility rates, Ehrlich was still producing essentially the same message fifty-plus years later.¹³ Ehrlich's work has been hugely influential, not least in the East Asian countries, all of which pursued his policy recommendations (China with the greatest enthusiasm and coercion) and now face a future of nose-diving populations.

But anti-natal ideologies are a huge force in western countries too. Antinatalism still pervades much of elite culture in the developed world, whether informed by environmental concerns or an evangelical approach to advocating the pursuit of individualistic and non-traditional lifestyles. A recent New York Times article reporting neutrally on birthrates during Covid drew forty-three 'anti-natal' responses against just three 'pro-natal' responses. New anti-natal online groups have sprouted in recent years with far more radical anti-natal views

than even those of Ehrlich. On Reddit recently, anti-natalist groups had more members than pronatalist groups by 15 to 1.

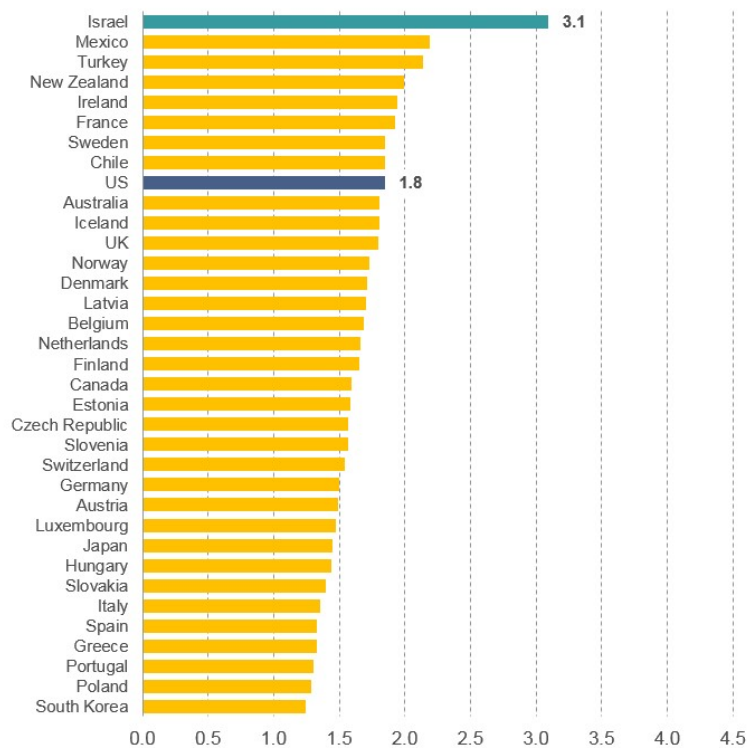
We should recall that before this, pronatalism was the norm for most of history. Religious teaching for thousands of years carried pro-natal messages, helping to forge pro-natal cultures across the global. It is only recently as religious influence has faded that we have lost our main source of cultural pronatalism. But more on that later. Although religion clearly fits within ‘ethos and belief,’ it is important enough to have its own section, which follows.

Israel, the only developed country not in demographic decline

Israel’s high fertility – at least a whole child more than in any other OECD country and close to twice the OECD average at nearly three children per woman- deserves special attention.

Israeli fertility is significant because we normally associate developed countries with high levels of education, income, and urbanization and, by association, low fertility. If the whole world is moving towards higher levels of socio-economic development, which is a good thing, we should worry about global fertility and therefore the future of humanity. Can we be rich and still reproduce ourselves as a species? Luckily for us, Israel is the exception – a developed country, highly educated, urban and wealthy, which still manages to produce a fertility rate well above replacement.

Israel's birth rate relative to the OECD countries, 2015



Source: Alex Weinreb, Dov Chernichovsky, and Aviv Brill, Taub Center
Data: OECD Database, Chart SF2.1

Israel has close to the OECD average share of people attending tertiary education.¹⁴ Its GDP per capita is higher than that of major West European countries such as the UK and France and it significantly exceeds wealthy East Asian countries like Japan and South Korea.¹⁵ And 93% of its population is designated urban, higher than any mainland European country except Belgium.¹⁶ Israel’s pro-natal social policies are not especially generous.

In Israel religion clearly plays a role, as we shall see. But it is not just about religion. Americans who share the Jewish religion with most Israelis have a fertility rate lower than that of the US Christian majority.¹⁷ In Israel there is something about the national psyche that drives high fertility in Israel: Israeli culture values having children intensely. If you talk to Israelis and if you visit the country, you will arrive at the same conclusion. Israel just has far stronger pro-natal beliefs than are found in any other developed country, even to the extent that having children is a *national cause*.^{18 19}

Where did this pronatalism come from? It was intentional.²⁰ Early Israeli leaders like David Ben Gurion and Golda Meir spoke often and in direct language about the importance of having children. Subsequent leaders have continued to uphold these values and have added policy supports.

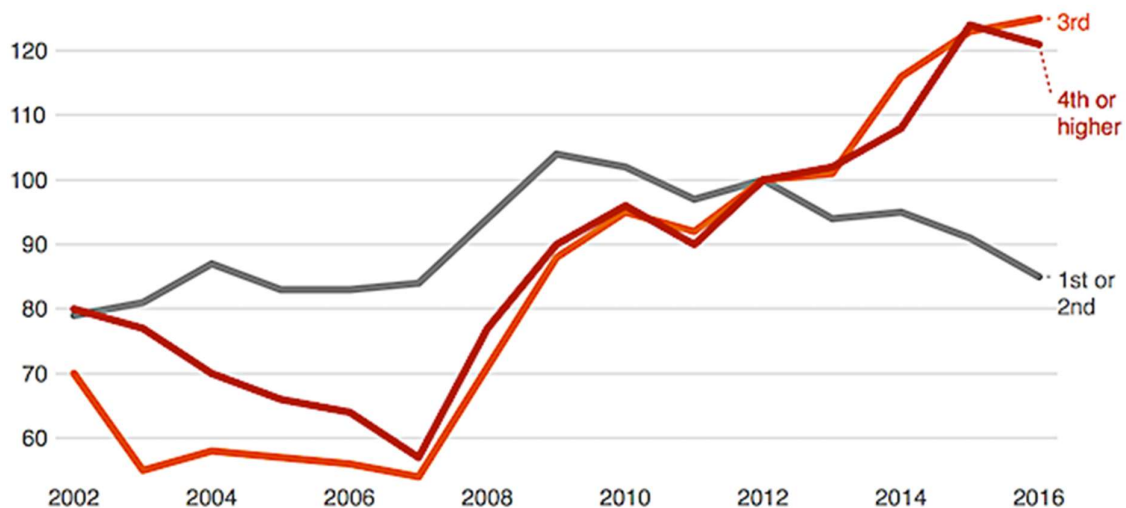
Most of all, Israel has never wavered in its pronatalism. While generations around the world (and especially in East Asian countries like Korea) were hearing the message that the world is overpopulated and told to cut down on the baby-making, Israel kept its core belief in the value of children.

The Republic of Georgia

Where the state or related institutions encourage motherhood through rhetoric and symbols, the effect is often felt. In Georgia an offer from the head of the Church to baptize third and subsequent children gave rise to a baby boom which demographer Lyman Stone showed was particularly demonstrable in the number of births of third order or higher.²¹

Indexed Annual Births by Birth Order

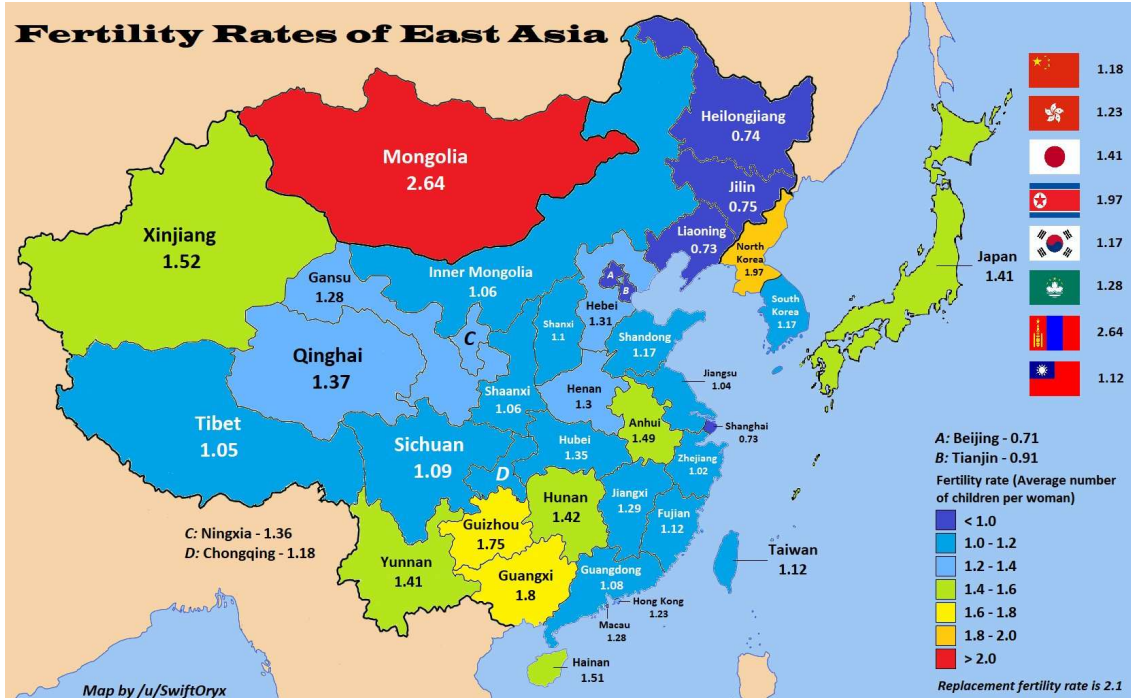
Index Year= 2012



Source: Official Birth Parity Data: Geostat.ge. Directly adjusted for Tsuladze-estimated total births. UNFPA research suggests unregistered births are not associated with birth parity status.

The amazing case of Mongolia

Next consider the case of Mongolia. How is it that Mongolia has managed to have a fertility rate that is two to three times that of its Asian neighbors? The map below (which is a couple of years old -- fertility rates in much of Asia are even lower now) puts into sharp relief the dramatic difference.



What is going on? The difference is fundamentally one of attitudes. Almost all of Asia, including South Korea, Taiwan and even Japan had population control messages in recent history, but in Mongolia, it was the opposite. More under the Soviet sphere than the Chinese sphere, Mongolia had pro-natal messages while China was telling its people to have fewer children.

Mongolian pronatalism isn't subtle. For 68 years, Mongolians have celebrated motherhood. This raised the status of motherhood and helped forge a remarkably pro-natal culture. Mongolian mothers of six are presented with the Order of Glorious Motherhood, First Class. Second Class if you have four. In the photo that follows, a mother of many is being recognized by the president himself, in a ceremony at the presidential palace.



Compare this with Thailand. Both Thailand and Mongolia are majority Buddhist. The per-capita GDP is similar in both countries.²² Yet they are practically on different planets, fertility-wise, with Thai fertility having fallen below one birth per woman. You might think that this is because Mongolia is a large and sparsely populated country. In fact, more than two-thirds of Mongolians are categorized as urban versus just more than half for Thailand.²³

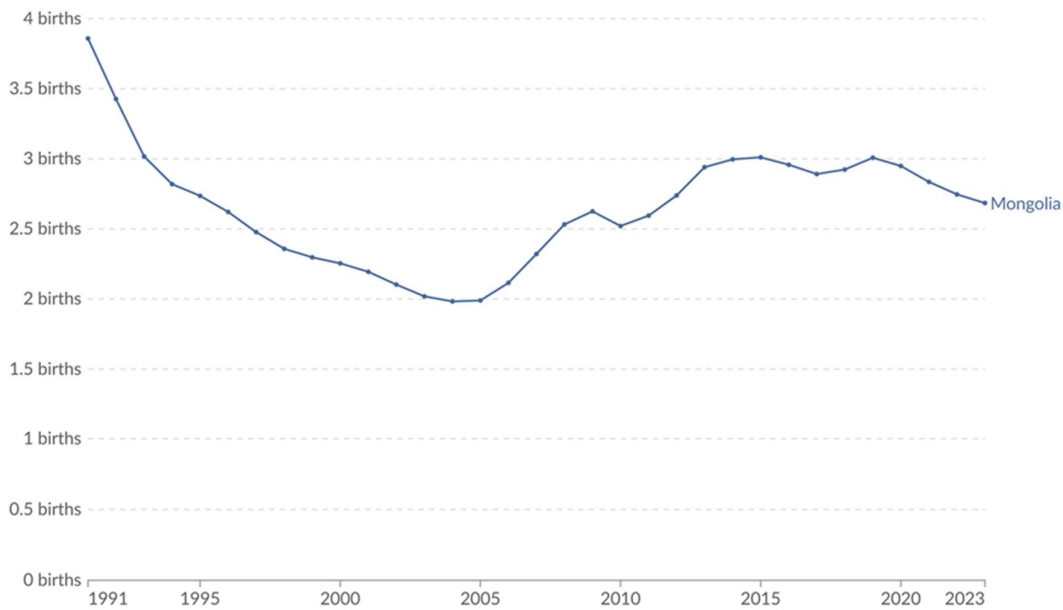
But when you explore these countries on a pro-natal/anti-natal axis you find a vast difference. While Mongolian leaders were consistently encouraging people to have more children and celebrating motherhood, in Thailand, leaders have been talking population control since the 1970s. When Thailand hosted the International Conference on Family Planning in 2022, its fertility was already down to 1.01 and still dropping fast. With January 2025 data already reported, Thai births were down another 8.4% from January 2024.

Fertility falls as countries develop, and Mongolia was no exception. But its fertility resilience has been remarkable over time; its pro-natal stance paid off. While all its neighbors saw fertility fall to far below replacement, Mongolia was different. Its fertility has now stabilized and reversed in an upward direction, testimony to what can be achieved when there is a lead from above.

Total fertility rate: births per woman



The total fertility rate¹ summarizes the total number of births a woman would have, if she experienced the birth rates seen in women of each age group in one particular year across her childbearing years.



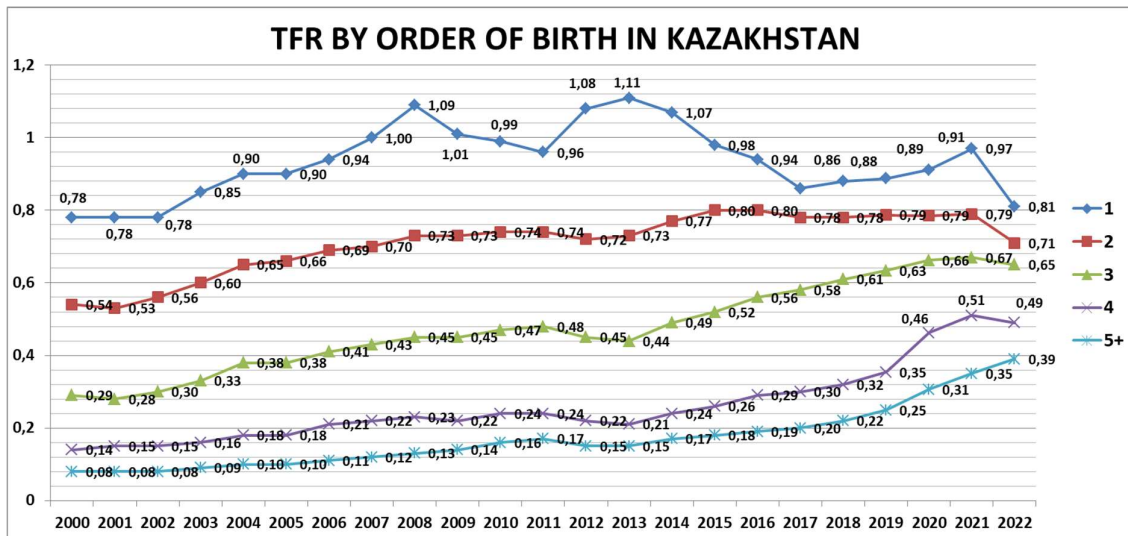
Data source: UN WPP (2024); HFD (2024)

OurWorldinData.org/fertility-rate | CC BY

Kazakhstan

Nearby Kazakhstan tells a similar story. Like Mongolia, Kazakhstan is one of the rare countries that got its fertility to go from below replacement to above. Kazakhstan did it much like Mongolia did, by celebrating motherhood and directly urging people to have more children for a brighter future.

But we have data on birth order in Kazakhstan that shows the mechanism of a strong pro-natal belief. What happened in Kazakhstan? First order births hardly changed but third, fourth and fifth+ births rocketed upward.²⁴



This has to be the easiest solution! People who aren't ready for kids don't have to have them. Those who already have kids choose to have more!

The situation is very different in Mongolia's and Kazakhstan's neighbor China, which for decades preached and enforced a harsh anti-natal policy. The Chinese regions neighboring Mongolia have particularly low fertility rates, just ¼ of the level seen in Mongolia. Now worried by an ageing and plunging population, China's authorities have tried to reverse course but are finding that generations of anti-natal haranguing and coercion cannot be reversed overnight. This isn't like tweaking tax or interest rate policy.

Although coercion against having children was never practiced in Korea as in China, decades of anti-natal propaganda prevailed there too, leaving its mark on the country in the world with the lowest fertility rate of all.

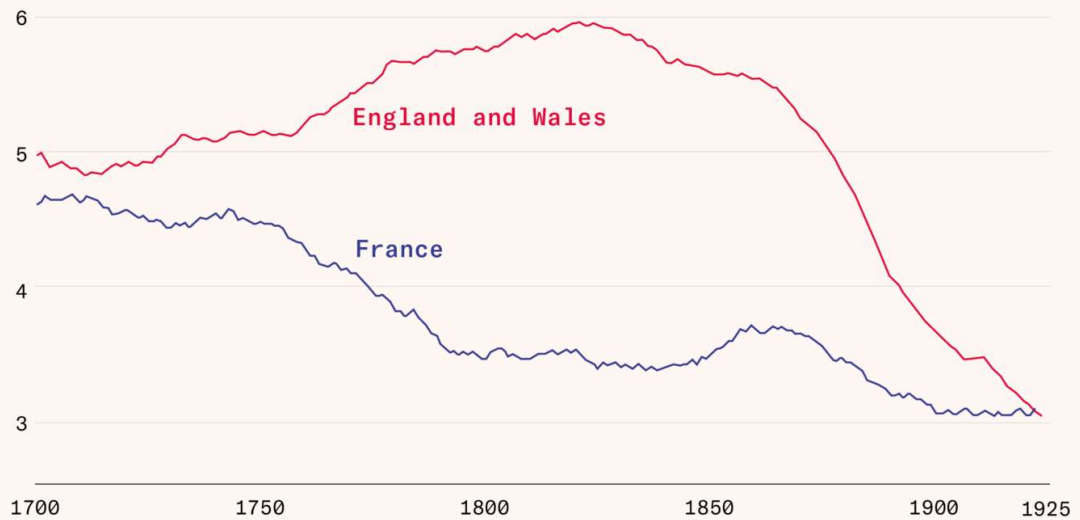
England and France

The power of pro-natal belief can be seen especially by comparing historical England and France. In the 1800s, both countries were industrializing and getting richer. But for a whole century they diverged, with England having very high fertility and France's being far lower.

What happened?

The early fertility decline in France

Gross fertility rate (births per woman)



Note: Historical data crowdsourced from publicly available genealogies

Source: Guillaume Blanc (2022)

In France, rapid secularization with the French revolution changed culture in a profoundly anti-natal way. In England, it was the opposite. King George III and his wife Charlotte had no fewer than fifteen children. Later, the long-reigning Queen Victoria had nine children. Those aren't accidental numbers. These were monarchs whose actions were intentional and both reflected and influenced the culture of their nations. France had birth control. Do you think the kings and queens of England didn't know?

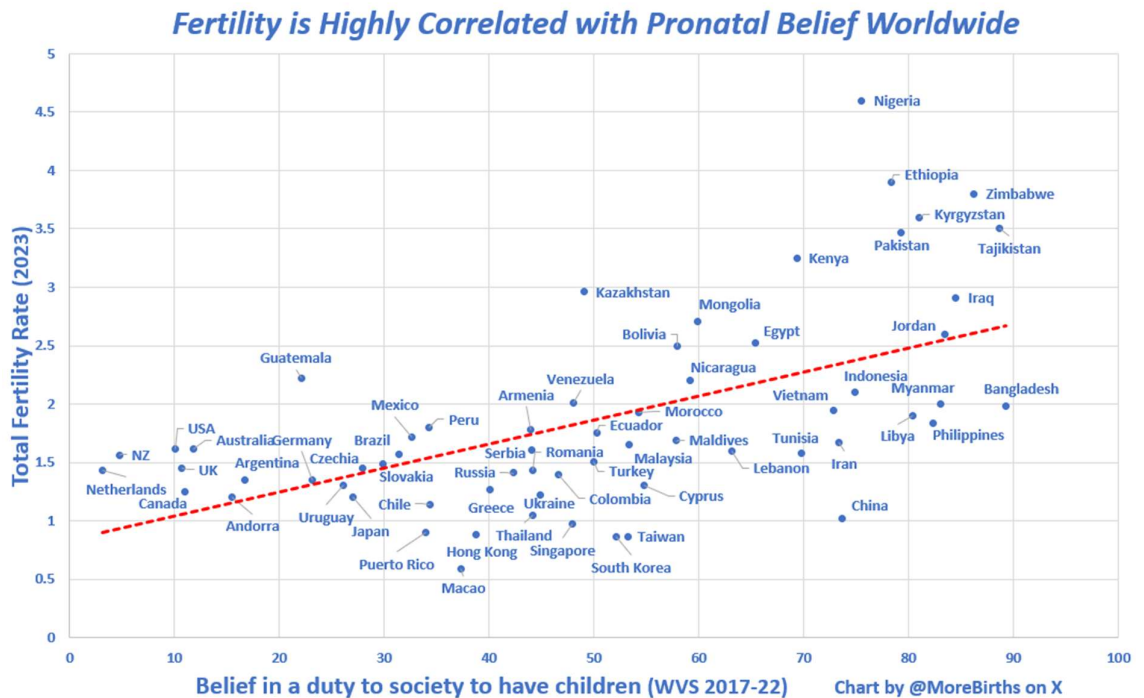
What was going on? This was Britain's glorious age of empire. British people deeply believed in themselves, and they believed in the cause of having children for the greatness of the future.

But that isn't the end of the story. If you know your fertility history, you know that since World War II, France has had higher fertility than the UK every year, and has had one of the highest fertility rates in Europe. What happened? Pronatalism again! The origins of French pronatalism go at least as far back as the 1870-71 defeat at the hands of Prussia and her German allies. After France's further humiliation in World War II, due in no small part the decline in its population relative the other European powers, France embarked on a generations-long project to increase its birthrate, with policies designed with the goal of encouraging large families. In 2024, when president Macron called for a 'demographic rearmament' in France, he was only the last in a long line of French presidents to be explicitly pro-natal.

A worldwide phenomenon

More generally we find that the fertility rate of a country correlates closely with a sense of childbearing being a national duty. Any observer of Israeli society will attest to the centrality of family and the expectations of marriage and childbearing which permeate the population.

Pro-natal belief lies at the heart of Israel's demographic success and we can clearly see a correlation between this factor on the one hand and achieved fertility rates on the other across the world.



The benefits of a pro-natal culture are many:

- (1) A pro-natal culture makes parenthood and especially motherhood higher status. Many thinkers have reflected on how much status matters for birthrates. We seek markers of status, and if money gives more status than parenthood, more people will choose money. On the other hand, if you are a mother of many in Israel or Mongolia, your status is considerable and your place in society is assured. In America? Probably not, unless you are in a religious community that values big families. In Korea? Hardly! In Korea it is the childless K-Pop lifestyle that that is glamorized.
- (2) A pro-natal culture is compatible with freedom. In Israel and Mongolia, birth control and abortion are widely available. People can get married or not, and have children or not, as they choose. Society has a strong opinion of course, that have having children is extremely important and very good! But individual freedom is not lost in the process. *Handmaid's Tale* or Ceaușescu's Romania? No way!
- (3) A pro-natal culture does not need to cast blame or care how we got here. Everyone has a theory of how we ended up with low birthrates, and that usually involves blaming the other gender. Is it men being undesirable partners? Is it women being feminist? If you want to make sure the birth rate crisis gets worse, start a gender war! Who cares how we got here? Let's solve this!

(4) A pro-natal culture means having a big tent, that welcomes all kinds of families
Everyone has an opinion about what kind of family is best. But if society value children highly, it can't help but appreciate every kind of family. Not only is that much nicer, that is actually essential for solving this.

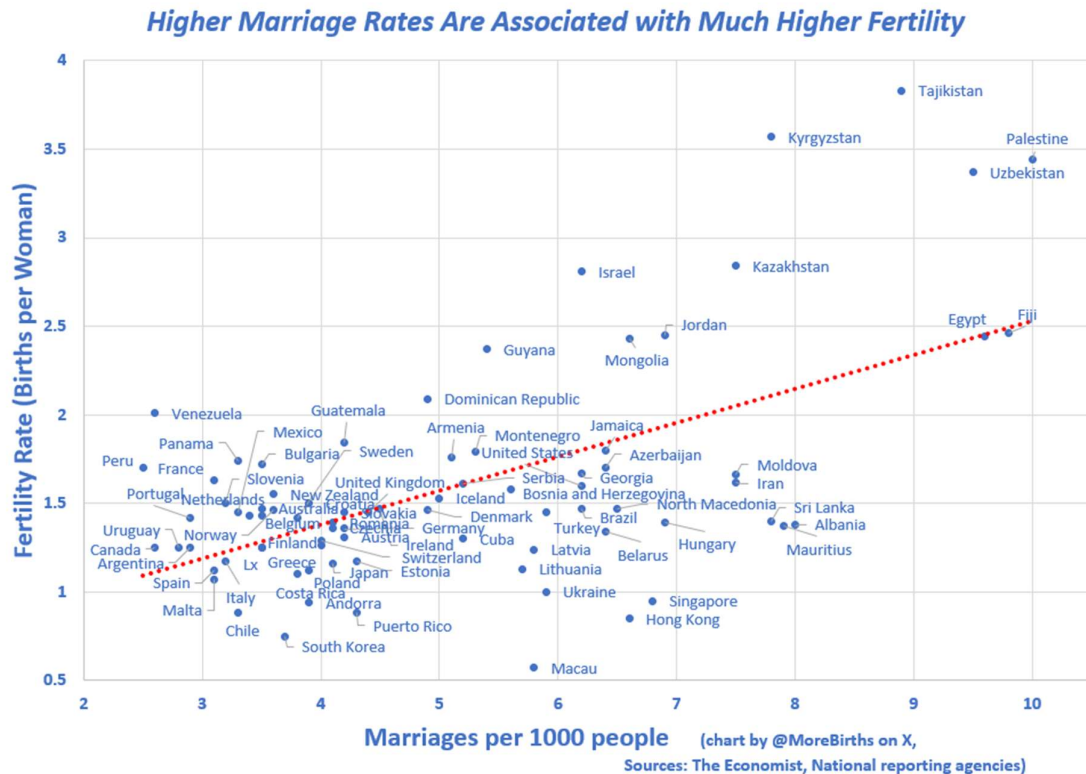
Marriage is a great structure for most families but if we didn't count families without marriage, we would have Korean levels of fertility in America and most European countries. Religion similarly is important for fertility but we need to bring along everyone, not just the church-goers.

A big tent isn't just good politics. It is absolutely necessary. You need a big tent just to make the math work!

2. Marriage, and Especially Earlier Marriage

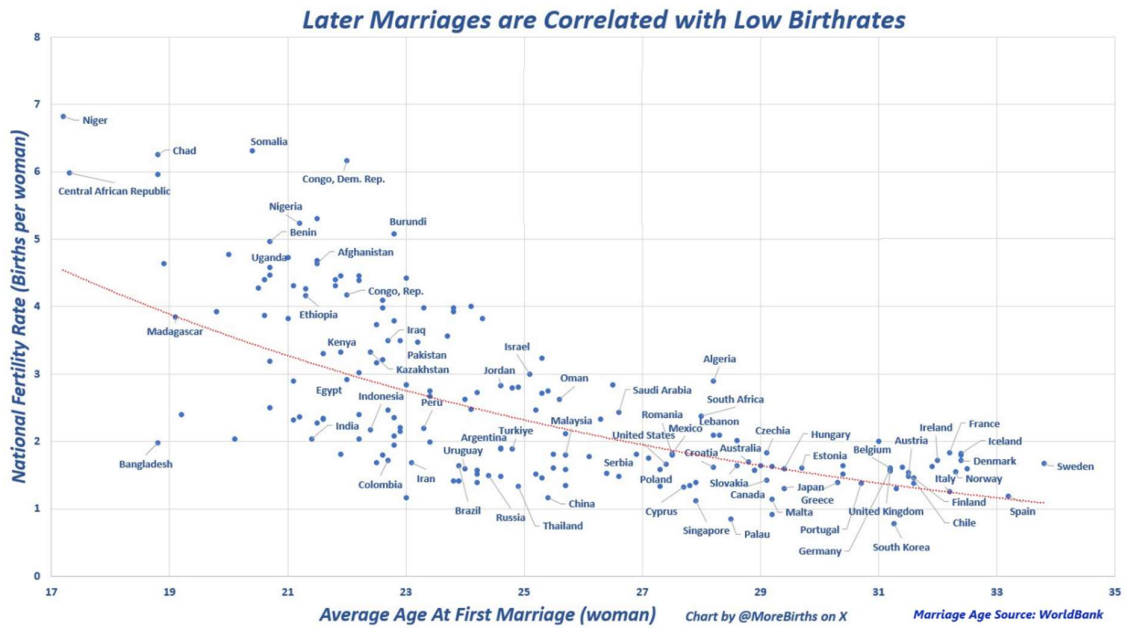
Keeping in mind our big-tent vision and our appreciation for families of all types, we have to talk about marriage.

Marriage matters tremendously for fertility, and the reason is obvious. Raising children is at least a twenty-year project, and most people want a strongly committed partner with whom to take that leap. Even though society no longer demands what we be married to have children, fertility still closely follows the marriage rate of a country, as this chart shows.



How much does marriage matter? There is not a single country, anywhere in the world, that reaches replacement fertility with a low marriage rate.

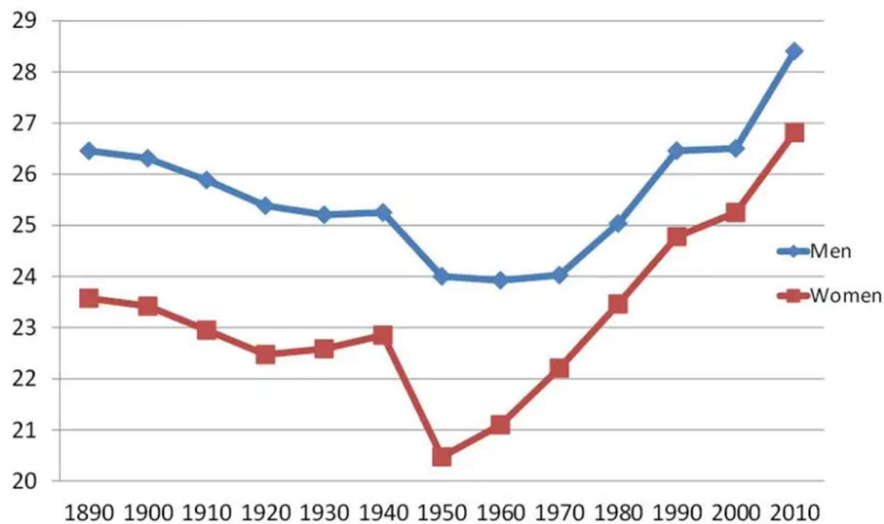
But marriage is rate not the only factor. Marriage age matters too. Fertility is far higher when people are young and the window to having children is quite limited, so if most people are marrying late, family sizes will tend to be small.



Marriage helped drive the Baby Boom

The post-war years in North America and Western Europe were associated with economic boom, early marriage and rising fertility. In 1950, the average age of first marriage for women was below 21 in the US, an historic low and more than three years lower than it had been in the late nineteenth century. The post-war baby boom was, in many ways, a marriage boom.

Figure 1. Median Age at First Marriage by Sex: 1890 to 2010

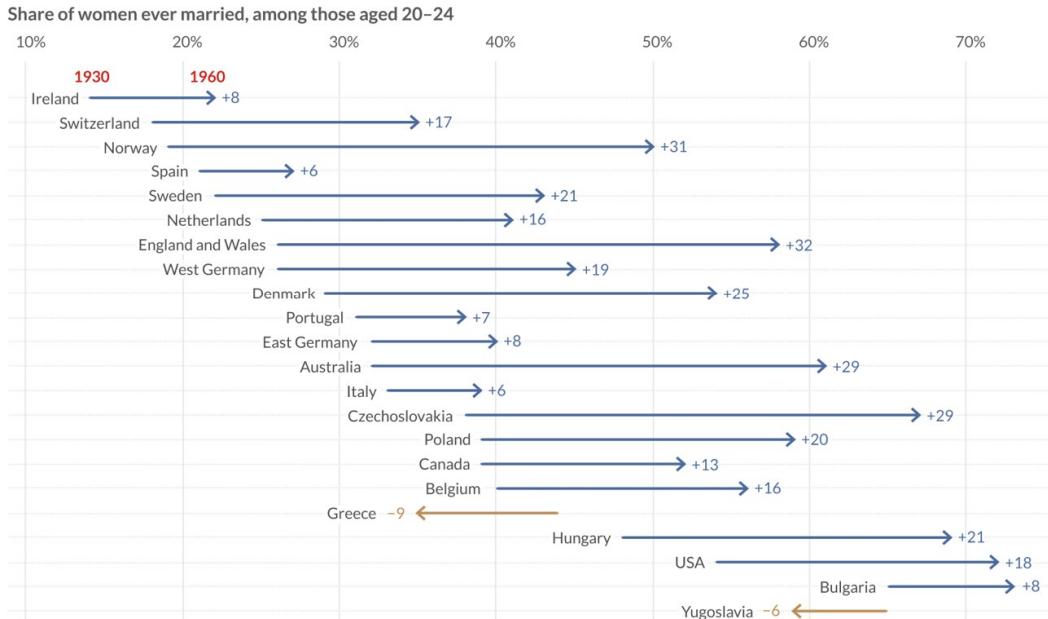


Source: U.S. Decennial Census (1890-2000); American Community Survey (2010). For more information on the ACS, see <http://www.census.gov/acs>

Census

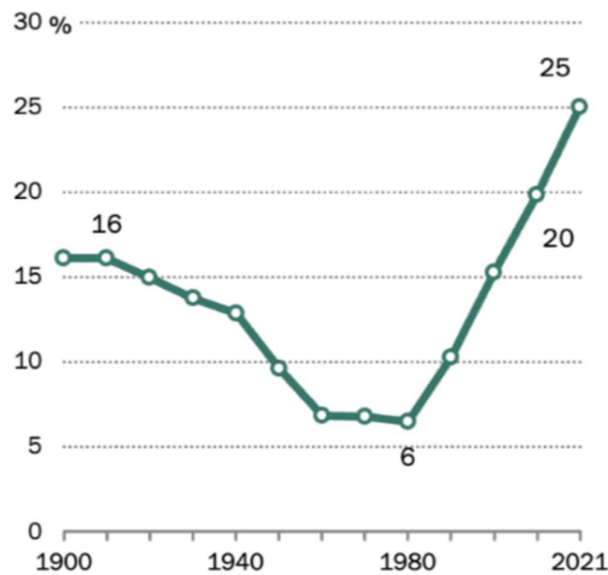
But it wasn't just in America. The Baby Boom occurred in numerous countries and soaring marriage rates among young people was a universal feature. Also rate of marriage was historically high. In the US, the Baby Boom coincided with more than 90% of people marrying.

Marriage rates rose across many high-income countries between 1930 and 1960



Data source: Jan Van Bavel and David S Reher (2013). *The Baby Boom and Its Causes: What We Know and What We Need to Know*.
 OurWorldinData.org — Research and data to make progress against the world's largest problems. Licensed under CC-BY by the author Saloni Dattani

% of 40-year-olds who had never married

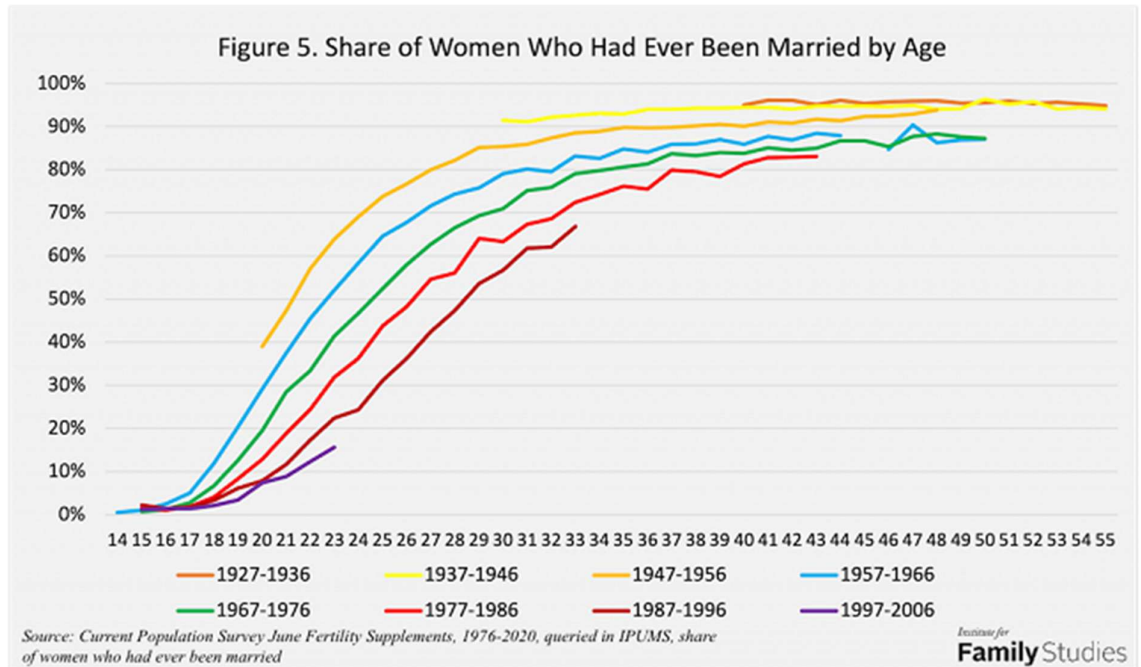


Note: Data labels shown for 1910, 1980, 2010 and 2021.
 Source: Pew Research Center analysis of 1900-2000 decennial census and 2010 and 2021 American Community Survey (IPUMS).

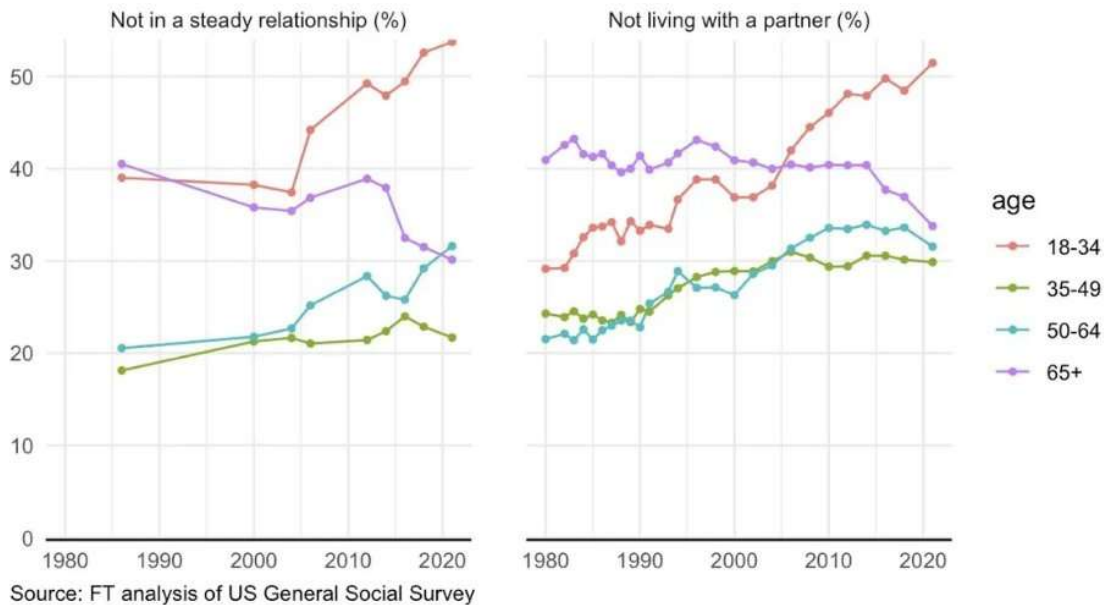
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Falling marriage explains the fertility slump of recent years

As the share of US 40-year-olds who have never married has quadrupled since the late 1970s, and as each cohort marries later, so the US fertility rate has slumped.



In the US, the share of 18-34 year-olds living alone has risen steeply since 1980:



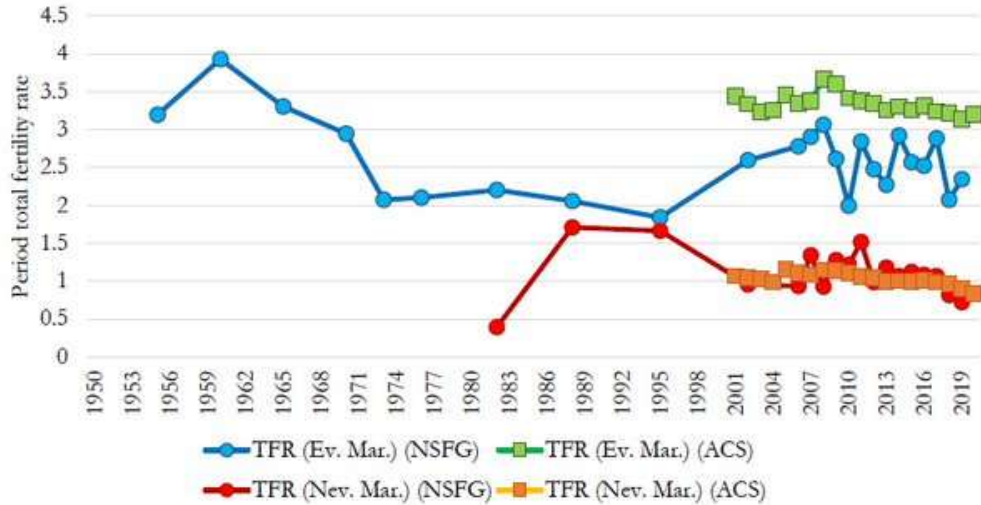
How this links to falling fertility is obvious: delayed commitment and coupling means fewer people are trying to have children during their most fertile years.

Despite the changing world, fertility still tracks with marriage

You might think that marriage is fading importance. You might think that the value of marriage in driving fertility is falling now the births outside of marriage are culturally accepted. You would be wrong.

As Lyman Stone has shown with the Institute for Family Studies, marriage and childbearing continue to be closely linked, at least in the US. Fertility within marriage has not declined in fifty years: it remains high. The problem is that fertility outside marriage is lower, and marriage itself is becoming less common.

FIGURE 2. TOTAL FERTILITY RATES FOR EVER- AND NEVER-MARRIED WOMEN



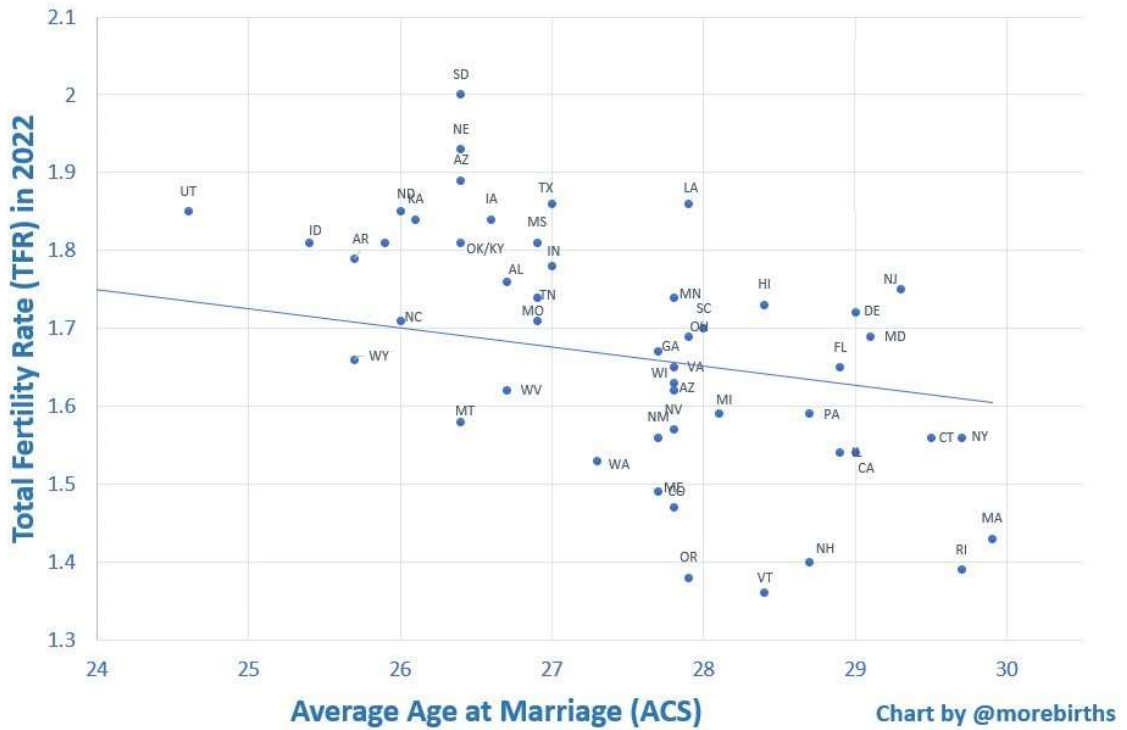
Across US States, the same thing

We can plot fertility in relation to marriage rate and marriage age for US states as well. Again, more and earlier marriage are associated with higher fertility exactly as you would expect.

Fertility Rate Depends Strongly on Marriage Rate

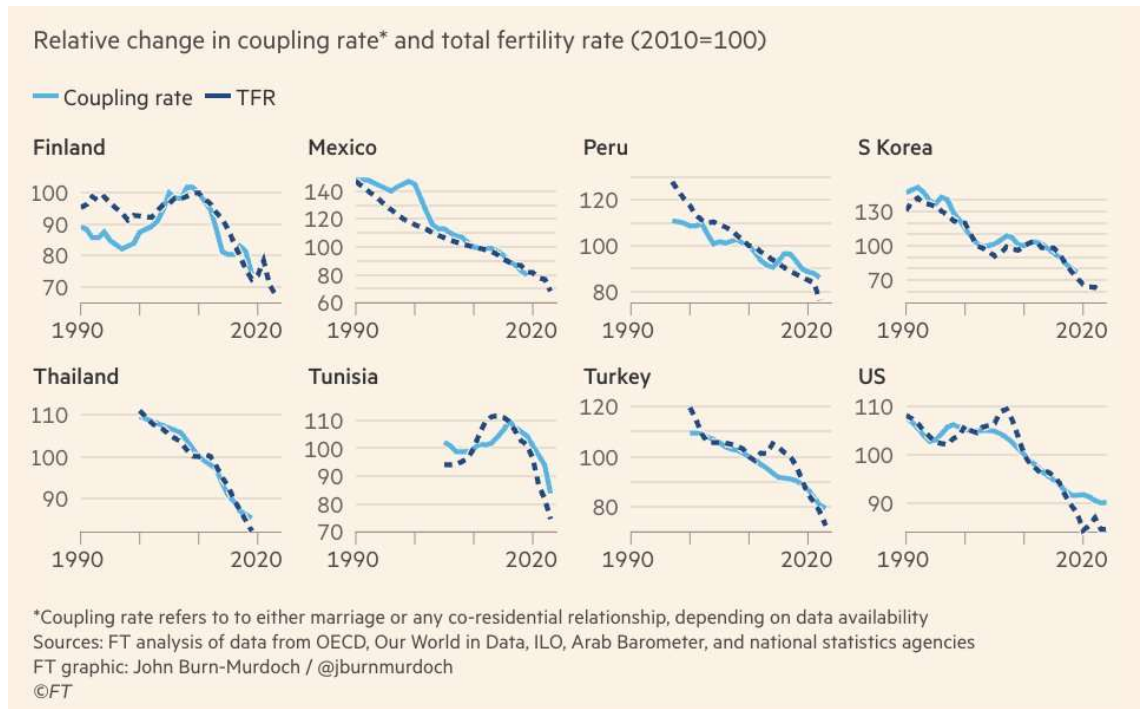


Later Marriages are Associated With Lower Fertility



Fertility tracks partnering almost perfectly over time

Setting aside marriage for a moment, coupling matters if children are to be born. Falling rates of coupling, with or without marriage, closely track collapsing birth rates worldwide.



In a world in which fewer and fewer women are getting pregnant accidentally and childbearing is more and more a conscious decision, the existence of committed relationships matters even more, since outside of them, relatively few women want to take on the challenges of parenthood. Just as marital or relationship commitment is becoming more central to childbearing, it is diminishing, and taking fertility rates down with it.

Treasuring all kinds of families and avoiding shaming

We've discussed the value of marriage, as we must. The causal connection between marriage and fertility is overwhelming. Yet we walk a fine line here. We wish to express that marriage as an institution appears to be essential demographically while at the same time appreciating families of all kinds.

Today's developed societies are strikingly different in terms of their attitude to marriage as compared to the past. The share of births outside marriage is high in many countries in Europe, including France, where it is over 60% and the UK where it is over 50%. In some Latin American countries, it is much higher still, at more than 70% in Mexico, Chile and Costa Rica. Without extra-marital fertility, the rate of childbearing would collapse in many places. We don't just tolerate these families; we need them and should be grateful for them.

Moreover, shaming having a child as a single woman may hurt fertility. In Korea or Taiwan, both with a TFR of under 1.0, we can imagine that the fertility rate would be substantially higher if those societies were more accepting of different types of families.

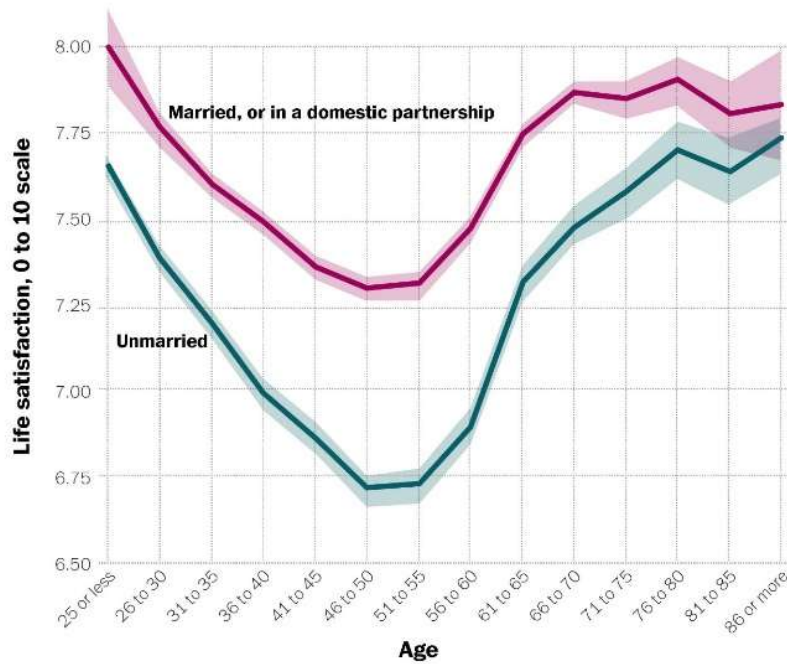
On the benefits of marriage beyond fertility

It is useful to note that marriage is statistically very positive for most people, even apart from the all-important fertility rate. This is important because both feminists and 'manosphere' types rail against marriage, helping to drive the fertility crisis, with arguments that are wrong.

The data show all of the following: Married people tend to be happier, healthier, wealthier and live longer. Although some may dismiss all these things as merely a selection effect, we don't think so. Companionship, stability, cooperation and the care by another surely cause better outcomes in all these ways.

Married people are happier – especially in middle age

Self-reported life satisfaction among married and unmarried people in the U.K., by age. Shaded areas represent confidence intervals.

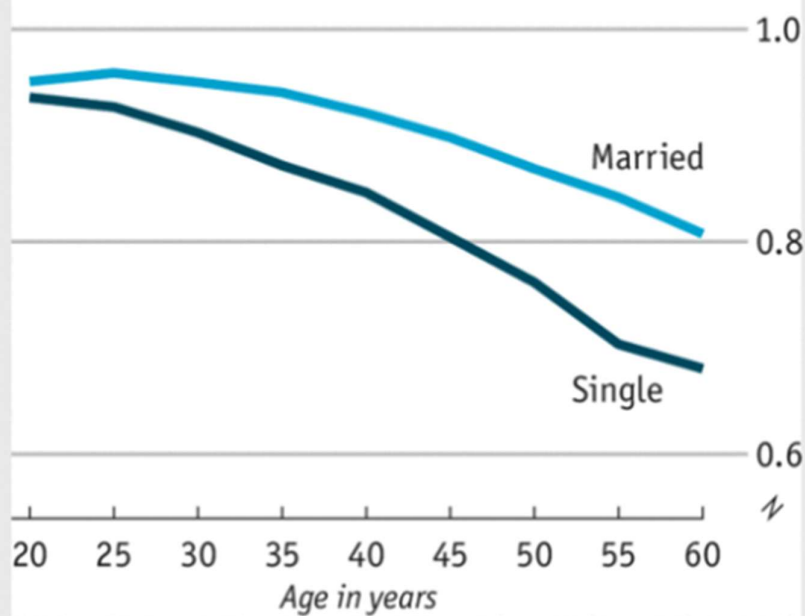


WASHINGTONPOST.COM/WONKBLOG

Source: Grover and Helliwell

Married bliss

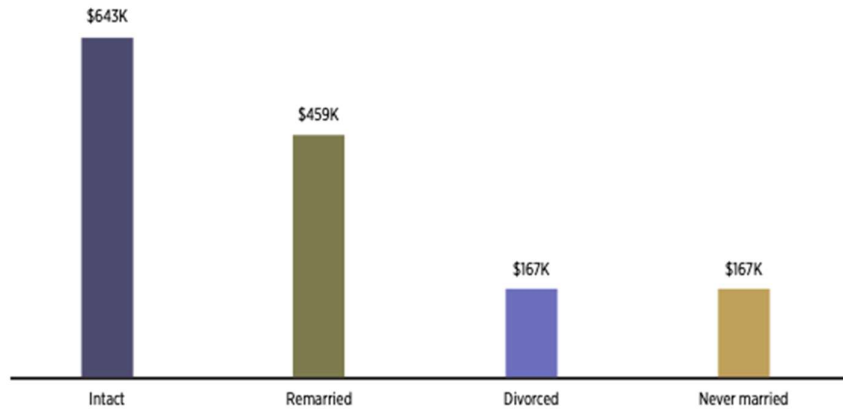
Fraction in good health*



Source: N. Guner; Y. Kulikova; J. Llull

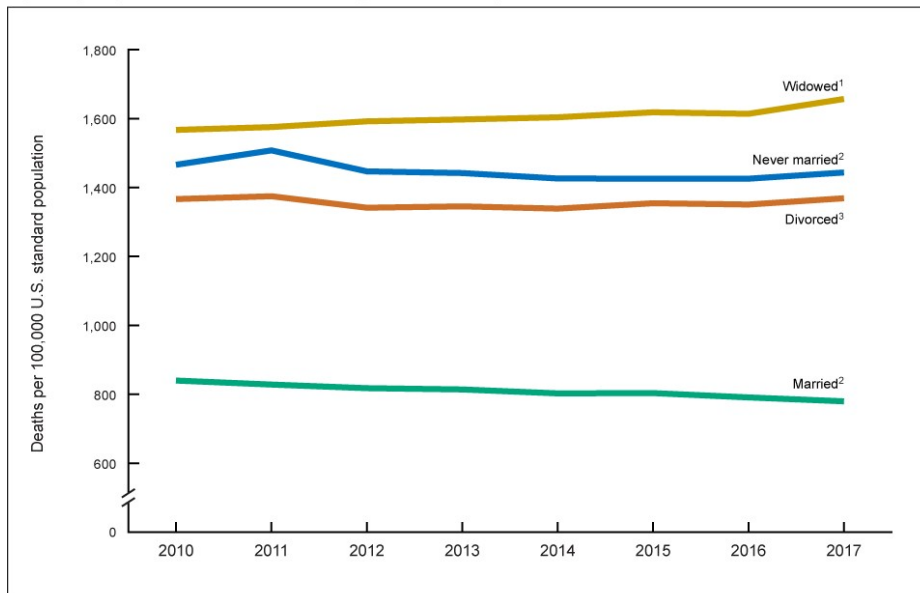
FIGURE 1

Household Assets of 51-60 Year-Old Men and Women, by Marital Status



Note: Average wealth (real estate holdings, retirement savings, cash, and other investments, minus debts), after controlling for education, race, gender, age, and AFQT scores.
Source: National Longitudinal Survey of Youth 1979 (NLSY79), Round 27 (2016).

Figure. Age-adjusted death rates for persons aged 25 and over, by marital status: United States, 2010–2017

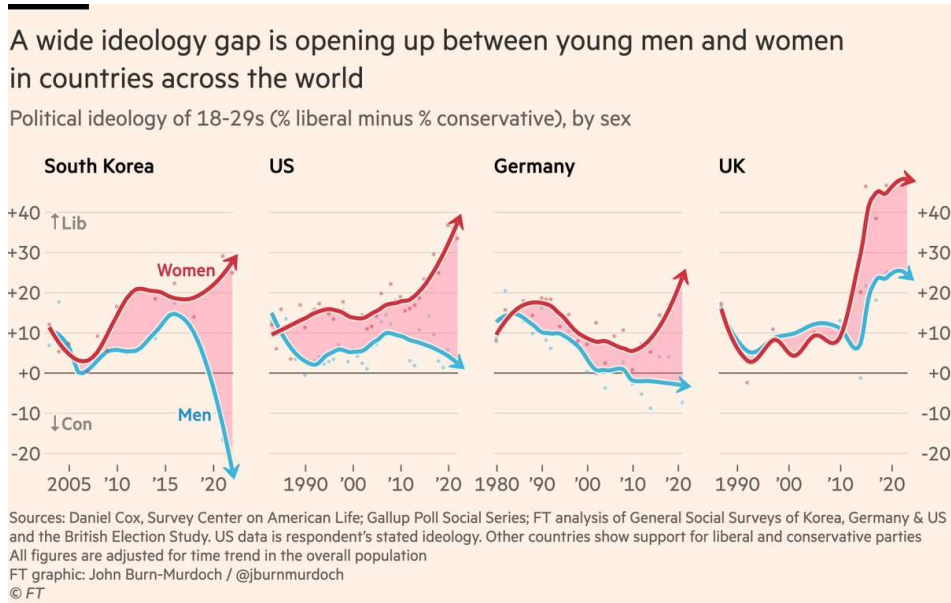


¹Significant increasing trend for 2010–2017, $p < 0.05$.
²Significant decreasing trend for 2010–2017, $p < 0.05$.
³Stable trend for 2010–2017, $p < 0.05$.
SOURCE: NCHS, National Vital Statistics System, Mortality.

Marriage is not for all people of course, but we can talk up marriage in confidence that it is good for most people, and that social metrics would improve if more people were married.

Understanding why marriage is collapsing

It is beyond the scope of this document to understand all of the reasons why partnering is falling so dramatically worldwide. But there are a couple of points to be made. One of the barriers to marriage is the widening ideological gap which has been observed in recent times between the sexes as documented by Financial Times columnist John Burn-Murdoch.

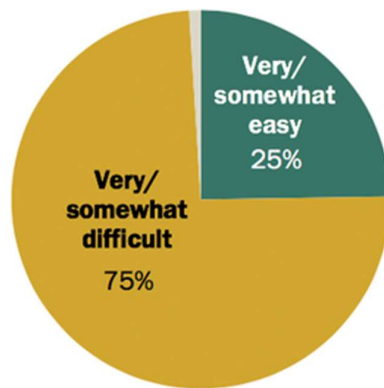
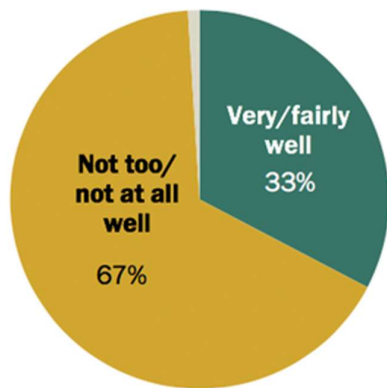


This may be behind the reported increasing difficulty singles find in dating, a normal precondition to marriages.

Most daters say their dating lives aren't going well and it's difficult to find people to date

% of daters saying that, overall, things in their dating life are going ...

% of daters saying they have found it ___ to find people to date in the past year



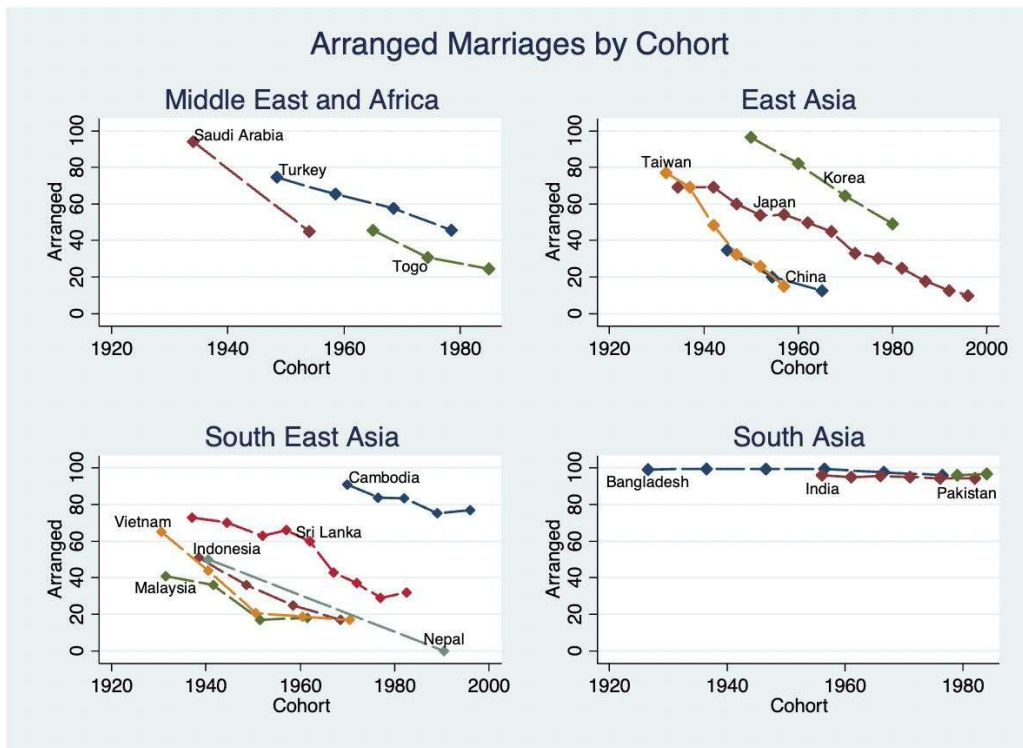
Source: Survey of U.S. adults conducted Oct. 16-28, 2019.
 | "Nearly Half of U.S. Adults Say Dating Has Gotten Harder for Most People in the Last 10 Years"

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It also seems likely that the retreat to electronic device and the many distortions caused by dating apps plays a big role in the failure of coupling.

A place for arranged marriage or matchmaking

We would be remiss if we didn't include a word about arranged marriage and matchmaking in a section on marriage. Arranged marriage and matchmaking were the primary way by which marriages formed in much of the world until recently. The disappearance of this model has left marriage rates far lower than they had been in most countries. Meanwhile, countries that maintain a culture of arranged marriage or matchmaking, such as India, Pakistan and Israel have far healthier fertility than those that do not.²⁵

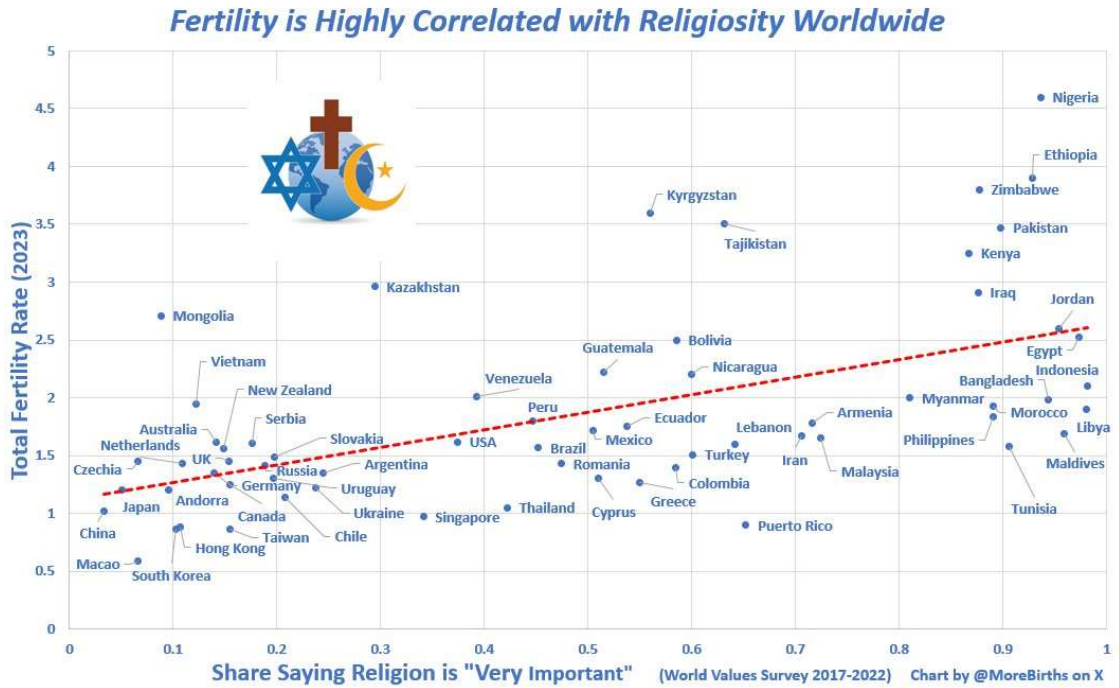


We certainly don't advocate oppressive cultural forms, but it is apparent that many young people are floundering. The option of modern matchmaking should surely be seen as an important tool to help more people find partners. What we have now plainly isn't working.

In any case, those countries, cultures and groups that manage to maintain strong marriage norms are doing much better demographically and will prove far more enduring than those that do not.

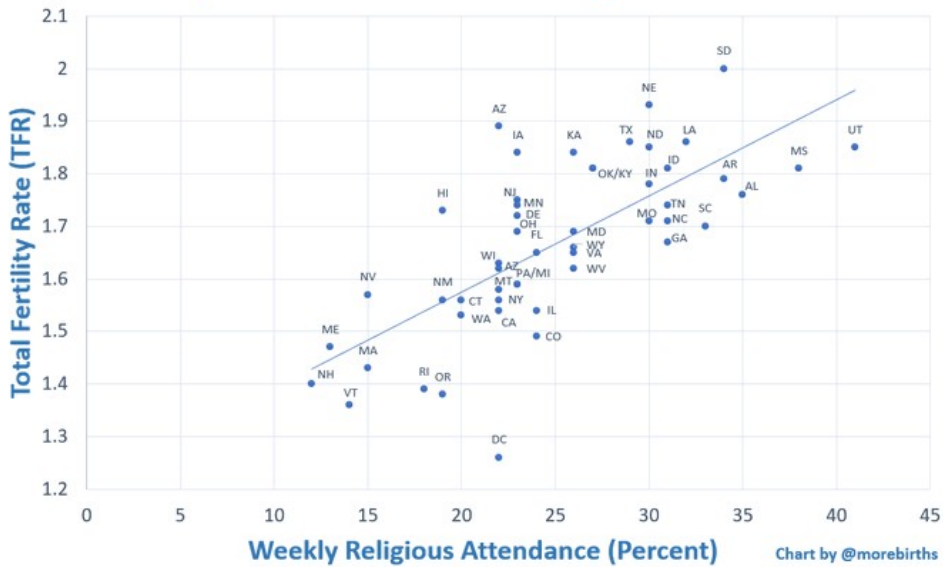
3. Religiosity

Religion is a key cultural component that supports fertility. Religion, at least in its Abrahamic forms (Judaism, Christianity and Islam), positively contributes to childbearing. Global studies have shown a clear correlation both within and across countries between religious adherence on the one hand and fertility rates on the other.



Church attendance is correlated strongly with religious attendance for US states as well. In states where religious attendance is higher, fertility is higher.

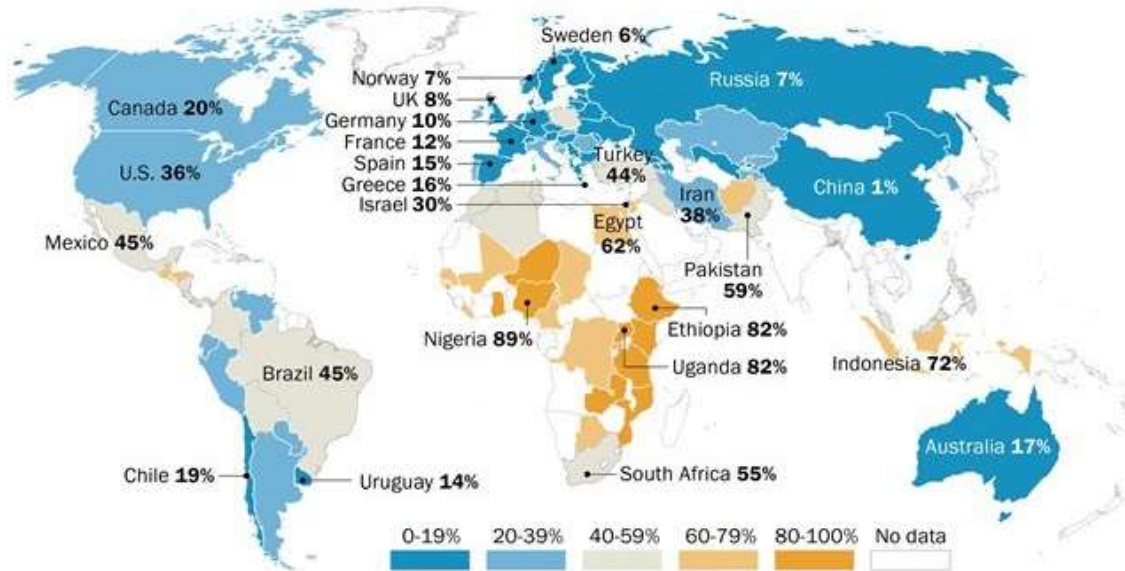
Fertility Rates of US States vs. Religious Attendance



In maps, we see the same phenomenon. The parts of the world where church attendance is high tend to have very high fertility and the parts of the world where church attendance is low tend to have very low fertility. African fertility is so high not simply because Africa is poor but because it is deeply religious.

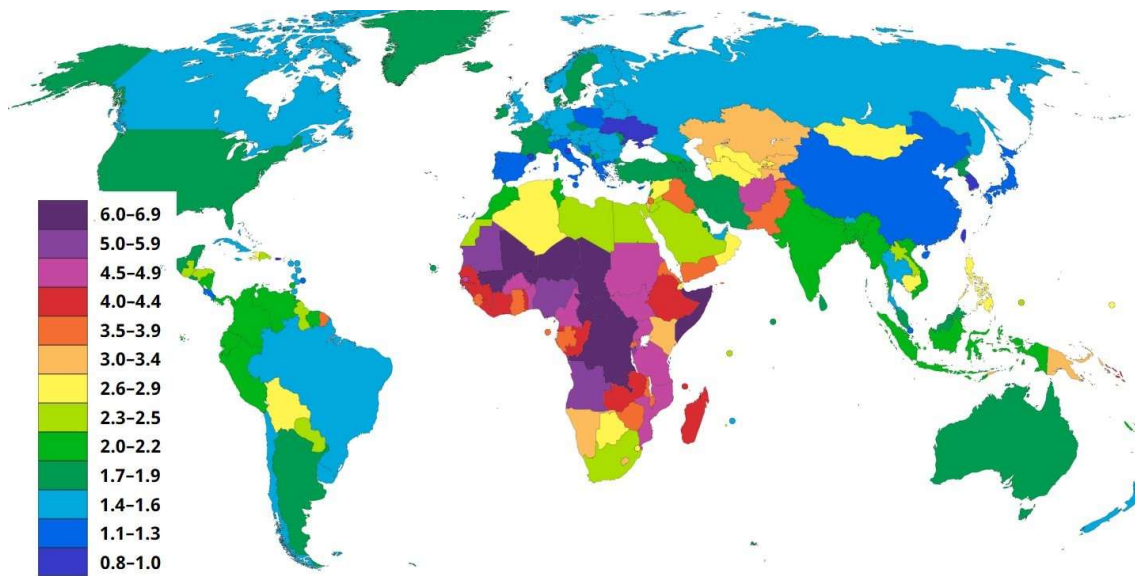
Weekly worship attendance highest in sub-Saharan Africa

% who say they attend worship services at least weekly

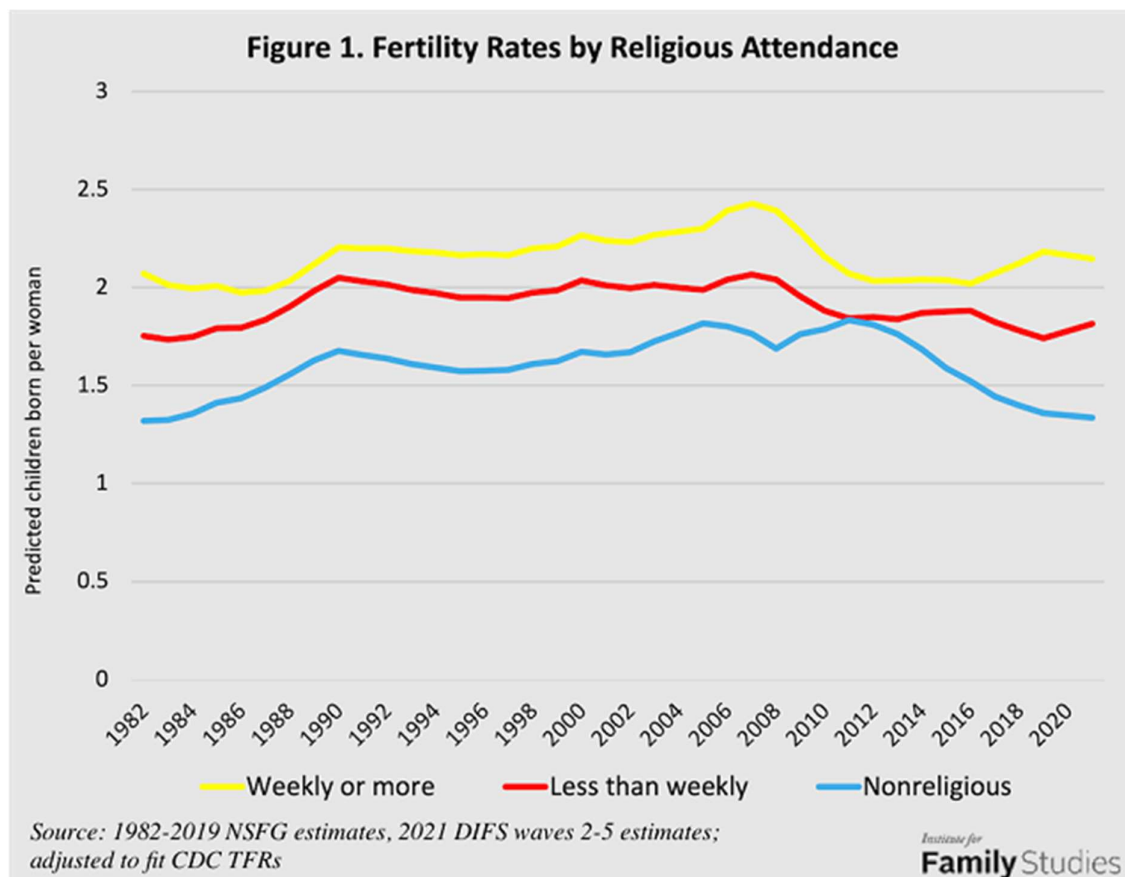


Source: Pew Research Center surveys, 2008 to 2017.
 "The Age Gap in Religion Around the World"

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The linkage between religiosity and fertility that we see across states and countries also exists on the individual level.



The fertility rate of weekly church attenders is almost a whole child higher than the fertility rate of those who never attend and the fertility rate of church attenders and nonattenders has

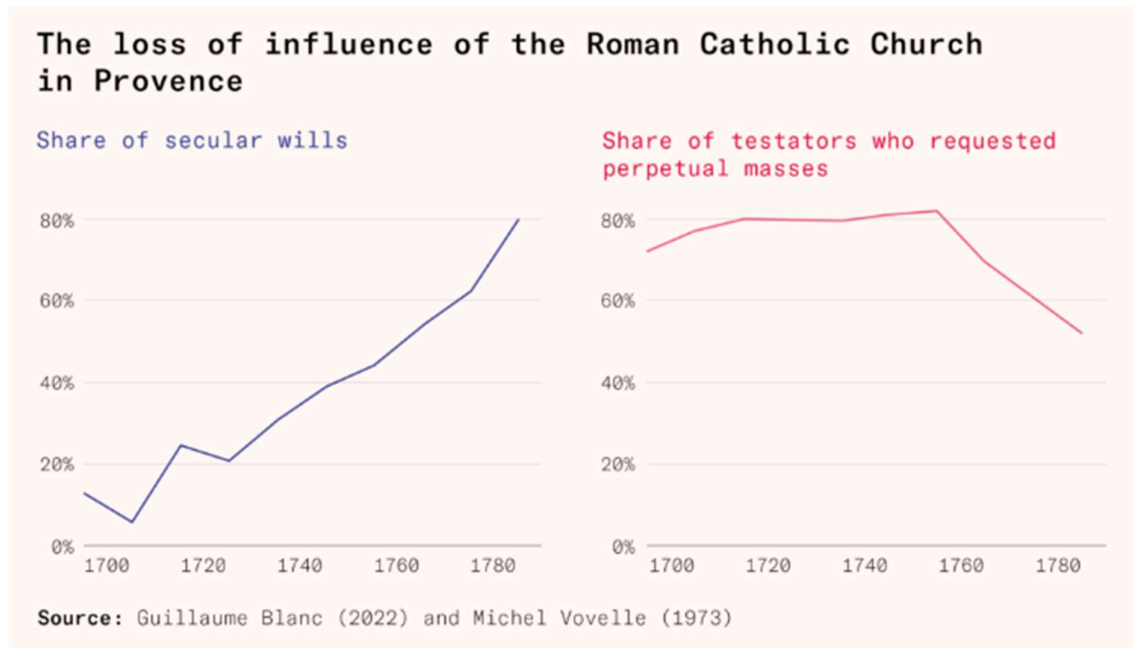
been roughly stable over four decades. Fertility is dropping as more people move from the attending category to the non-attending category. (We saw that similarly marital fertility remains high but fertility drops as fewer people are married.)

In fact, the connection between religion and fertility is one of the strongest findings in all of demography.²⁶

As fertility has plunged worldwide, the religious, from traditionalist Catholics to the Amish, from the Laestadian Lutherans in Finland to Orthodox Jews in Israel, from pious Muslims to devout Africans, are the ones still having children in high numbers.

Secularization and falling fertility in historical France

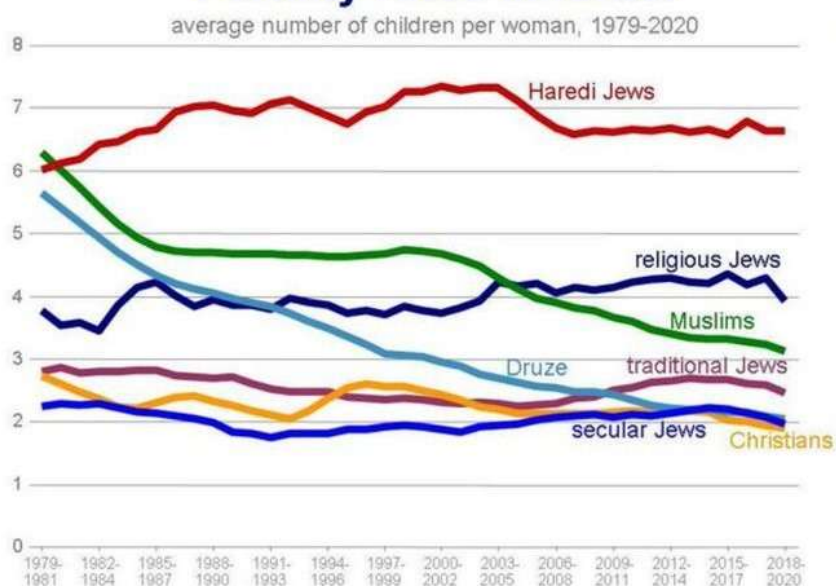
Falling fertility with secularization isn't a new story either. We know French population stagnated in the 1800s while the rest of Europe continued to grow, but why? Recent work has demonstrated that by the eve of French Revolution, French society had dramatically secularized, in contrast to the rest of Europe, and this caused birthrates to plummet.²⁷



Religiosity and Fertility in Israel

In Israel, there is a clear correlation between religious intensity on the one hand and fertility on the other, at least among the c. 80% of the population categorized broadly as Jewish. Haredi Jews have six or seven children each, those reporting themselves as 'religious' and 'traditional' around four and a little under three respectively and those describing themselves as 'Secular' just two (although note, for Israeli Jews, even if you strip out the even moderately religious element, you still have a fertility rate higher than for any other OECD country). Muslims, Druze and (overwhelmingly Arab) Christians have seen their fertility rates fall in line with general rises in income, urbanization and education as one would expect.

Fertility rates in Israel



Source: Dan Ben-David, Shohet Institution and Tel-Aviv University
Data: Central Bureau of Statistics

Religiosity and Fertility in the Netherlands and Finland

In the Netherlands there is a clear (and massive) link between regions where Calvinism is strong and higher fertility rates.

Municipality	TOTAL FERTILITY RATE	
	2014	2023
Netherlands (2.1%)	1.71	1.43
Urk (48%)	2.70	2.58
Reimerswaal (34%)	2.28	1.88
Neder Betuwe (33%)	2.25	2.31
Staphorst (32%)	2.65	2.14
Barneveld (24%)	2.43	2.17
Tholen (24%)	2.25	1.87
Nunspeet (24%)	2.23	2.04
Rijssen-Holten (23%)	2.46	1.96
Zwarterwaterland (21%)	2.19	2.02
Renswoude (21%)	3.03	2.25
Hardinxveld (21%)	2.19	1.84
Scherpenzeel (20%)	2.33	1.93
Woudenberg (20%)	2.16	1.72
Molenlanden (17%)	/	1.99
Borsele (16%)	2.11	1.87
Amsterdam (0.1%)	1.52	1.12
Rotterdam (0.6%)	1.66	1.26
Utrecht (0.3%)	1.66	1.18
Eindhoven (0.2%)	1.47	1.19
Groningen (0.5%)	1.35	1.06
Tilburg (0.1%)	1.54	1.25
Almere (0.3%)	1.74	1.54
Breda (0.1%)	1.58	1.32
Nijmegen (0.2%)	1.45	1.21

% is share of vote for SGP (Calvinist party) in elections 2023

In Finland, meanwhile, national fertility is just 1.25 births per woman. But the fertility in towns like Larsmo that are heavily Laestadian Lutheran is up to triple the national average and holding steady.

Highest TFR in Finnish municipalities by 4 years periods							
1992-1995		1996-1999		2000-2003		2004-2007	
Larsmo	4,06	Larsmo	3,47	Sottunga	3,93	Tyrnävä	3,89
Lumijoki	3,32	Lumijoki	3,30	Merijärvi	3,69	Lumijoki	3,84
Sievi	3,26	Sievi	3,19	Larsmo	3,41	Liminka	3,80
Perho	3,13	Merijärvi	3,17	Liminka	3,34	Larsmo	3,71
Liminka	3,09	Pyhäntä	3,17	Sievi	3,28	Perho	3,70
2008-2011		2012-2015		2016-2019		2020-2023	
Tyrnävä	4,15	Merijärvi	4,00	Kinnula	3,94	Larsmo	3,61
Sievi	3,93	Perho	3,75	Merijärvi	3,50	Pyhäntä	3,37
Merijärvi	3,82	Lumijoki	3,60	Perho	3,30	Kinnula	3,19
Larsmo	3,76	Larsmo	3,56	Larsmo	3,25	Merijärvi	3,04
Perho	3,71	Tyrnävä	3,56	Kumlinge	3,19	Vårdö	2,90

Source : Statistics Finland, births

Share of families with 4+ underaged children		Share of families with 3+ children under 7 years		Share of families with 9+ persons	
Finland	1,8%	Finland	0,8%	Finland	0,2%
Merijärvi	12,8%	Larsmo	5,4%	Perho	4,8%
Perho	11,5%	Pyhäntä	5,1%	Lumijoki	4,7%
Sievi	11,5%	Merijärvi	5,1%	Pyhäntä	4,6%
Tyrnävä	11,3%	Tyrnävä	4,7%	Sievi	4,1%
Larsmo	11,1%	Liminka	4,4%	Tyrnävä	3,6%
Liminka	11,0%	Sievi	4,2%	Merijärvi	3,5%
Lumijoki	10,0%	Perho	4,0%	Siikajoki	3,2%
Pyhäntä	8,0%	Uurainen	4,0%	Liminka	2,7%

Source : Statistics Finland, families

Something great about the Laestadian Lutherans of Finland is that (unlike the Amish) they combine high fertility with strong economic and political integration. Many Finnish leaders, and even Finnish presidents have been Laestadian!

What is about religion that causes so much higher fertility?

A lot of very brilliant people, like the friend of one of us Robin Hanson (a longtime atheist), have recently come to appreciate the value of religious belief a whole lot more in a world of collapsing birthrates. That is not to say religious doctrines have suddenly become true to him. But he has a newfound respect for cultures that have what it takes to endure in a world that is succumbing to fertility collapse.

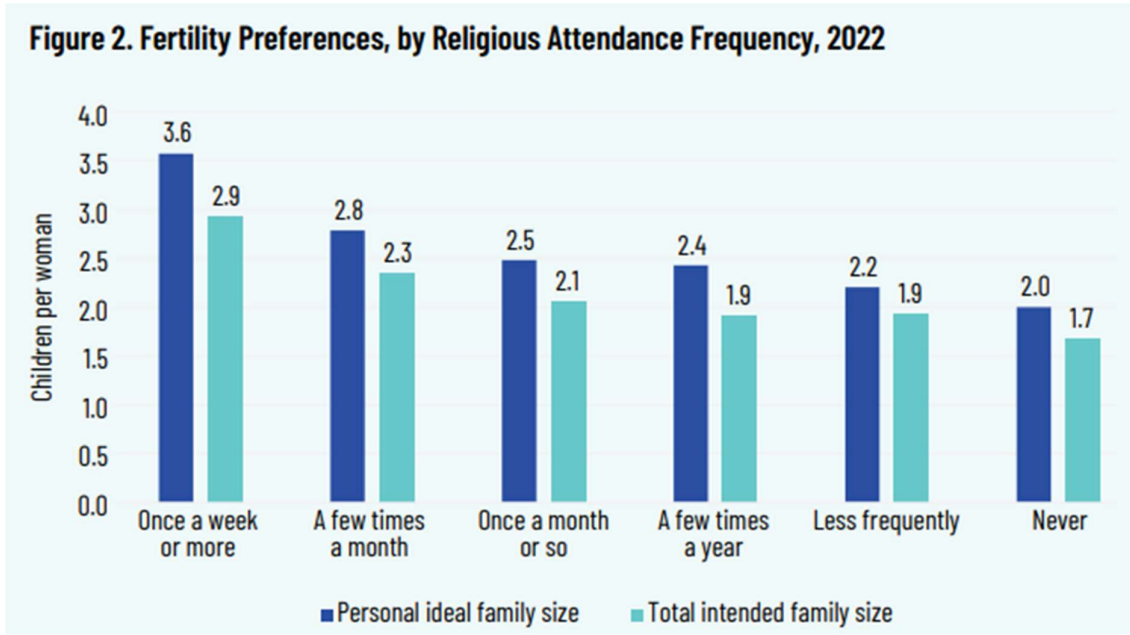
What is it about religiosity that leads to higher fertility? There are several causes. Let's explore.

(1) Religion as source of transcendent meaning and pro-natal belief

As evolutionary psychologist Geoffrey Miller explains, physical attraction and the sex drive were once all that was needed for high fertility. But now with a range of techniques and tools for contraception, people can follow their innate drives without having any children at all. Ways for avoiding pregnancy have existed for centuries but have been perfected much more recently.

In this brave new world, children are a choice rather than a by-product of our biological impulses. Something like religion, which provides beliefs that lead people to want more children, matters even more than in the past.

Demographer Lyman Stone, conducting a large study of religiosity and fertility in Canada, found enormous differences in family ideals and intentions by religious attendance.



<https://www.cardus.ca/research/family/reports/religion-and-fertility-in-canada/>

When you consider the fact that people tend to have fewer children than they want, only the religious in Canada are near replacement.

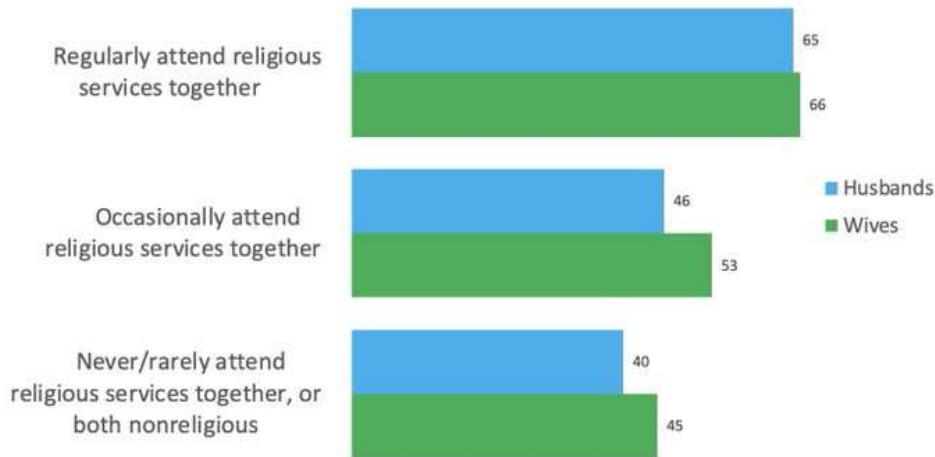
(2) Religion as a cultural bridge between men and women

As discussed earlier, there is a huge ideological gap between men and women. This is a big hindrance to marriage and family formation because most people are very reluctant to partner across an ideological divide. Stone explains that religious communities offer a dating pool that is already pre-screened for common belief and purpose, making it a whole lot easier for young people to find a match.

Common belief is apparently a very big deal. Family studies expert Brad Wilcox reports in his 2024 book that religious couples these days are having a lot more sex, suggesting greater relationship success. It also cannot hurt the business of baby making.

Shared Faith, More Sex

Percent reporting having sex with their spouse once a week or more often

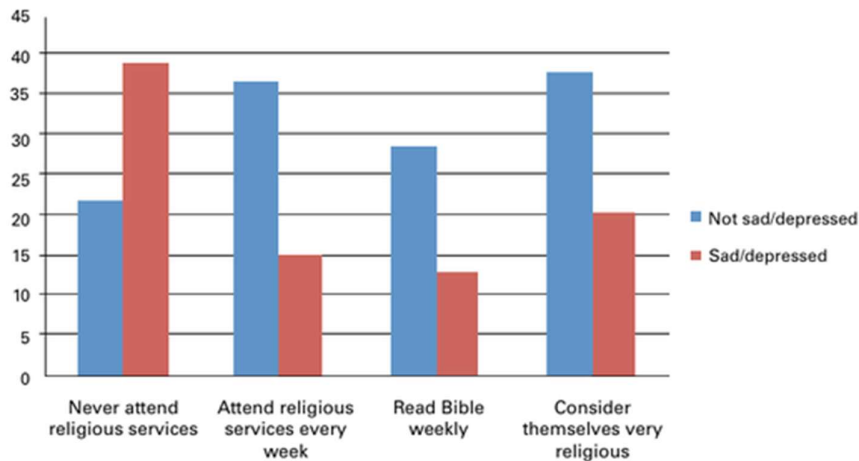


Based on married adults aged 18–55. Source: State of Our Unions Survey (2022).

(3) Greater happiness and mental health

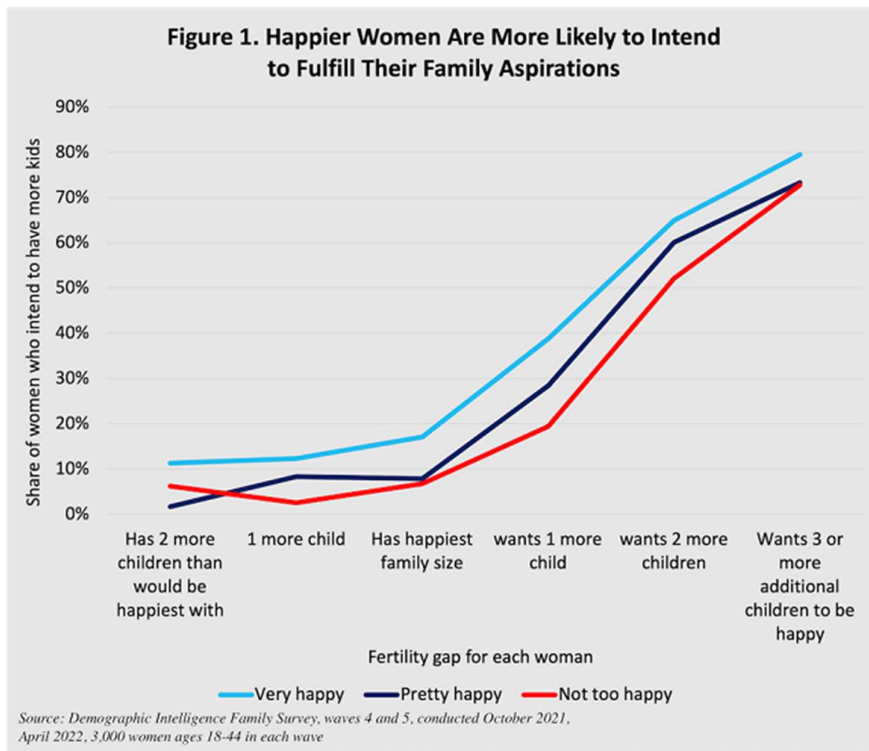
The *Baylor Religion Survey* found that those who are religious tend to have far lower rates of depression than those who are not religious.

Figure 22. God’s Worriers: Percentage Of Depressed And Non-depressed Who:



This is a finding that has been confirmed by numerous other studies.²⁸ such as Fruehwirth, Iyer and Zhang (2019).

This matters because as a report by the Institute for Family Studies showed, happier people are much more likely to go for more kids.



Philosopher Elon Musk recently posted this poem on X:

*“Atheism left an empty space
 Secular religion took its place
 But left the people in despair
 Childless hedonism sans care
 Maybe religion’s not so bad
 To keep you from being sad”*

Apropos.

(4) Faith communities are a social network that makes it easier to raise kids

Journalist and author Tim Carney emphasized in his 2024 book ‘Family Unfriendly’ that religious communities make parenting a lot easier. They do this, he says, by creating thick support networks of like-minded families. Relatedly, Lyman Stone has suggested in podcasts that alloparenting (childcare help by people other than parents) is a big reason why fertility is a lot higher in faith communities.

Relatedly, studies show that having children is socially contagious. Women are much more likely to get pregnant if their friends and acquaintances are pregnant. And a religious community is a great place to catch the baby bug!

(5) Faith groups confer status on mothers and big families that the rest of society does not
Motherhood isn't especially high-status across society these days. But for certain religious groups like the Amish and the Haredi, it is high status to have a lot of kids. And so, their fertility is high.

(6) Faith traditions teach norms around chastity and marriage that are pro-natal
It turns out that the old rules make it a lot easier for people to have a family!

Caveats and additional points:

Not every faith is pro-natal

The Abrahamic faiths (Judaism, Christianity and Islam) all urge the faithful to have more children. For Christianity and Judaism, this starts at the very beginning of the bible, with the command, "Be fruitful, multiply, fill the Earth and subdue it." All three of these faiths are associated with higher birthrates.

But Buddhism, the fourth largest faith, seems to have a low or even negative correlation with fertility²⁹, lacking clear pro-natal teaching. Enlightenment in Buddhism is a solitary affair. Hinduism, the third largest faith, is more complicated. Although less ideologically pro-natal than the Abrahamic faiths, traditional Hinduism celebrates marriage strongly, and that is pro-natal in effect.

The Amish and the Haredim are notably a lot more pro-natal than the ancient traditions they derive from. **That suggests that belief systems are movable on a pro-natal axis, and can be changed to be much more pro-natal!**

Repressing religion is a bad idea, if you care about birth rates

Below is a map of countries that are already falling in population, meaning that they have had low fertility for a very long time.

Countries That Have A Declining Population



Compare that to a map of the current and former Communist world, where religious practice was intentionally forced out.



These maps are pretty close! Notice Eastern Europe and Cuba in the Western Hemisphere. The case of China is especially notable. Demographer Yi Fuxian explains that traditional Confucianism, which is very pro-natal, was stamped out over many years by the CCP.

A challenge for the rest

The world of the future will need a lot of the scientists, engineers and tech types - and these folks are often secular. If there are a lot fewer science and engineering-minded people in the future (as Robin Hanson and many others expect given the low fertility of these types) then the world of the future could be a lot poorer and less advanced.

Can secularists also create a pro-natal culture? There is hope. As we saw with Mongolia and Israel, secular people have high fertility when the national culture positively celebrates having children.

Meanwhile, the lesson of modern fertile sects is that faith groups that are only weakly pro-natal can become a lot more so. In a world of crashing fertility, everything helps.

4. Housing: First Good for Families and then Affordable

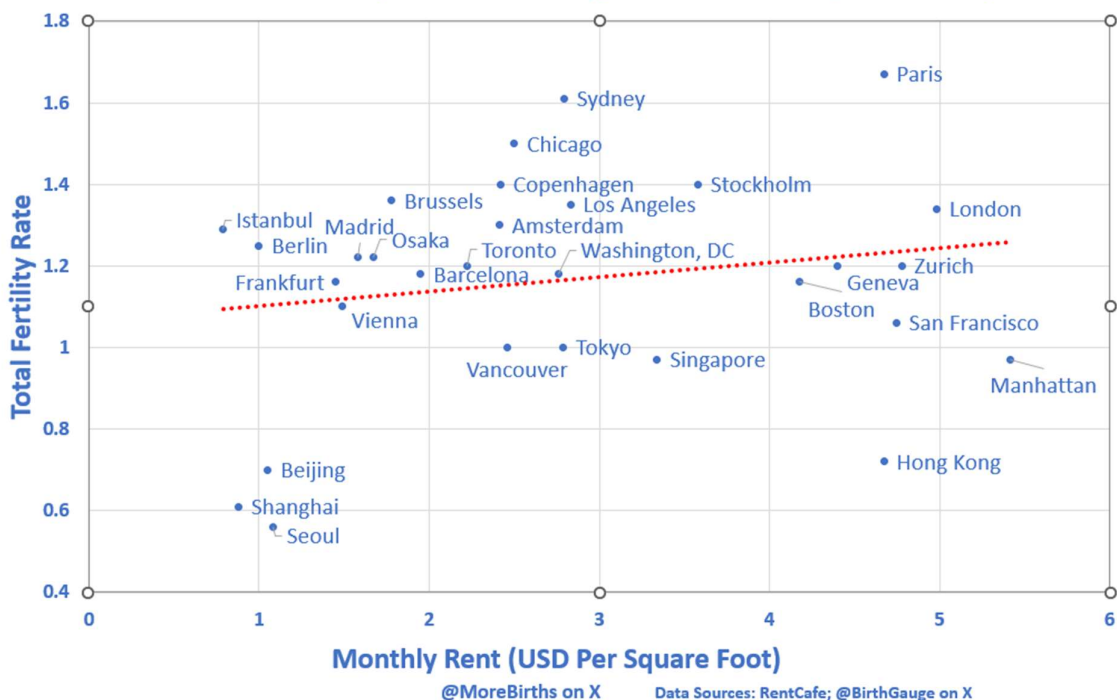
For most people the starting point for talking about housing is price. For fertility, that is the wrong place to start. Would you believe that the lowest fertility places on Earth have housing that is abundant and cheap?

A Theory, Divorced from the Real World

For many people, the solution to what ails housing can be summed up in econ professor Bryan Caplan's book *Build Baby Build*, which argues for the abolishment of single-family zoning to allow unlimited urban density. Caplan claims that urban fertility is low because city housing is expensive. If you could just build upward (and almost every picture in Caplan's graphic novel is skyscrapers) then prices will come down and any housing issues will be cured. Is that true?

Here is a look at what fertility looks like when plotted against rent for what real estate website RentCafe called the 30 "most magnetic cities in the world."

Abundant and Cheap Urban Housing Doesn't Yield Higher Fertility



The first thing you may notice is that fertility is incredibly low in most cities, less than 1.2 on average. But also, price isn't the cause of low urban fertility and making housing cheap doesn't fix it. It turns out in Seoul (TFR 0.56 in 2024), Beijing (TFR 0.70) and Shanghai (TFR 0.61) rents are very low per square foot, just 20% of what they are in London, San Francisco, and Manhattan.

Beijing, Shanghai and Seoul have *already* followed the prescription in Caplan's *Build Baby Build*. They already built more than anyone else and housing is now cheap. You can get 1400

square feet in Seoul and 1700 square feet in Shanghai for the price of 300 square feet in London.

The Financial Times presented this graphic with an air of praise for East Asia and criticism for the Anglosphere. The message is that East Asia builds while the Anglosphere languishes.



Graphic: Financial Times

Wait a minute! There is something wrong with this chart! East Asia isn't doing well where it counts, in family formation. And the problem of low birthrates is worst in precisely the places where they have been building the most. Instead of just grouping all housing together, let's get more specific. What are we really talking about?

The Reality

Here is suburban Atlanta, with a fertility rate of approximately 1.9. One hundred people in Atlanta today can expect around 85 grandchildren between them.



Meanwhile, here is Seoul, South Korea, with a fertility rate of 0.56. One hundred people in Seoul today can expect about 7 grandchildren between them.



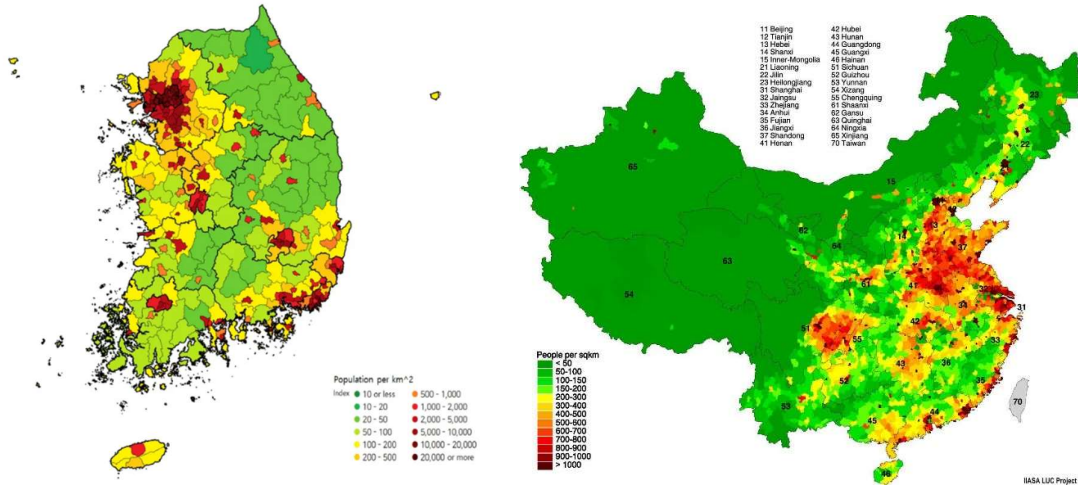
Below is suburban Dallas, with a fertility of close to 2.0. One hundred people in Dallas today can expect to have about 90 grandchildren between them.



And the following is Shanghai, TFR 0.61. One hundred people in Shanghai today can expect about 8 grandchildren between them.



Some readers will protest here. Korea and China are crowded. They have no choice but to build this way. Not so! Most of Korea and China are very sparsely populated.



Well maybe that low urban fertility is just an Asian thing. What about America? Well, below is Manhattan. Manhattan is heavily immigrant and minority. It should have higher fertility, right? The TFR of Manhattan is just 0.97. One hundred Manhattanites will have just 21 grandchildren between them.



Why do people have 3½ times as many kids in sprawling Atlanta as in Seoul or Shanghai? Why do people have twice as many kids in Dallas, a place of suburbs, as in Manhattan?

Do we even need to explain how the first panorama is different from the second and the third panorama is different from the fourth? For many readers, it is so obvious that nothing further needs to be said.

But for the skeptics, let's explain more. Density itself may drive down fertility and in any case, it is generally a proxy for the prevalence of family-unfriendly housing. 'Urban sprawl' has

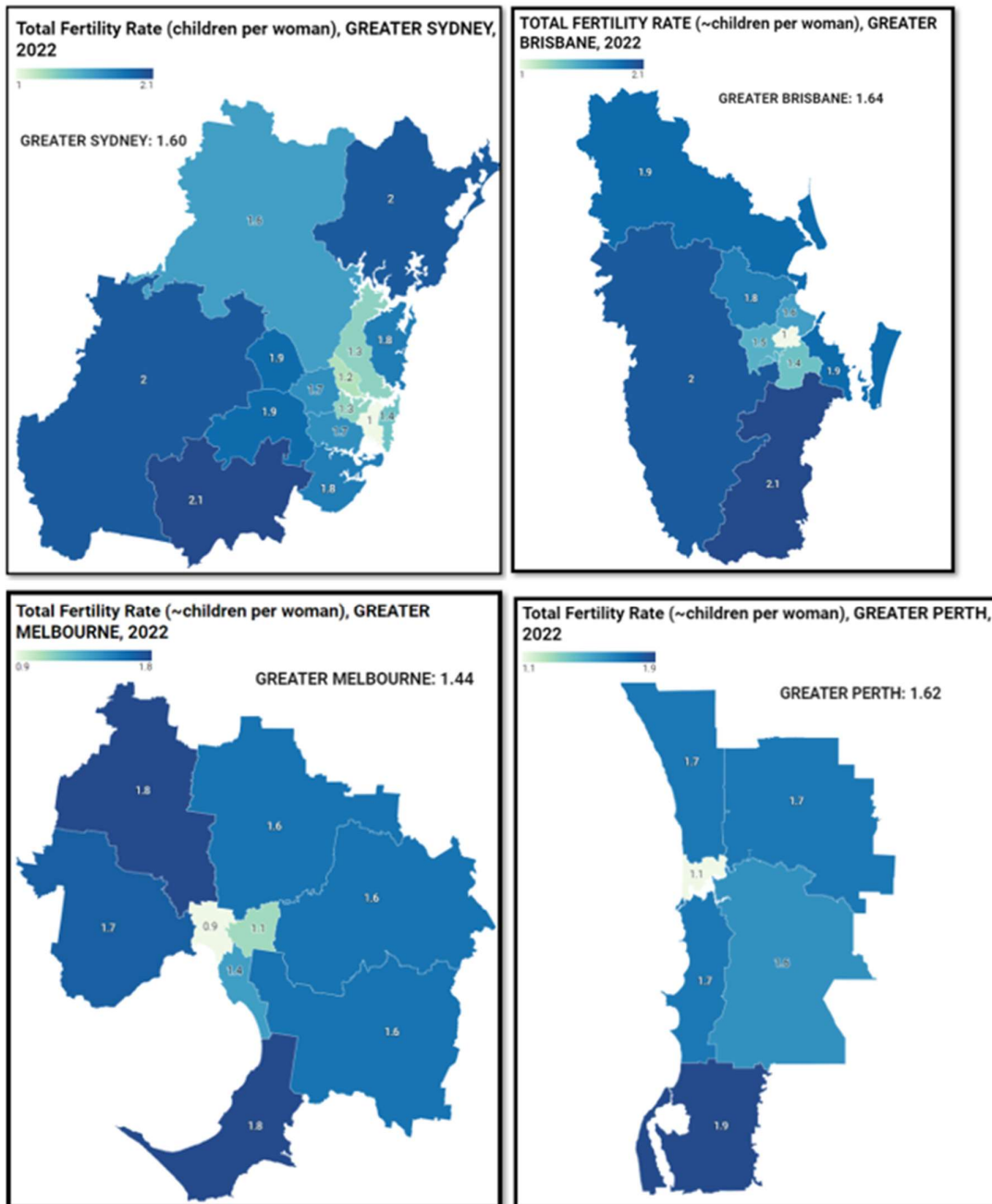
a bad name, but providing housing that is suitable for families at scale looks exactly like sprawl, and such housing is essential if we are going to crack the fertility problem. Meanwhile, urban life itself tends to militate against childbearing and raising families. We have long seen that fertility rates fall as societies urbanize.

It is true that some cities in the developing world have relatively high birth rates, such as Cairo. But Egypt has just 63% female literacy, among the lowest in the world. And even in many relatively poor countries it is striking that the urban fertility rate has already sunk well below that of the surrounding area or country as a whole: the fertility rate in Addis Ababa in Ethiopia in 2015 was reckoned to be 1.7 against an Ethiopian average of more than 4.5 at that time.³⁰ In Kolkata in India the fertility rate is estimated to be not much higher than one child per woman, half the Indian national average.³¹

What about those brilliant economists who advocate for high density as the solution to housing? They can't be wrong, can they? Well, a friend on the inside reported to that Caplan and every other professor in the influential George Mason University economics department who advocates for urban densification (and there are quite a few) raised own their family in a single-family home. No exceptions! Economists teach us that that revealed preferences provide a window into what people really believe!

Australia!

Here are some lovely maps of fertility for greater Sydney, Brisbane, Melbourne and Perth.



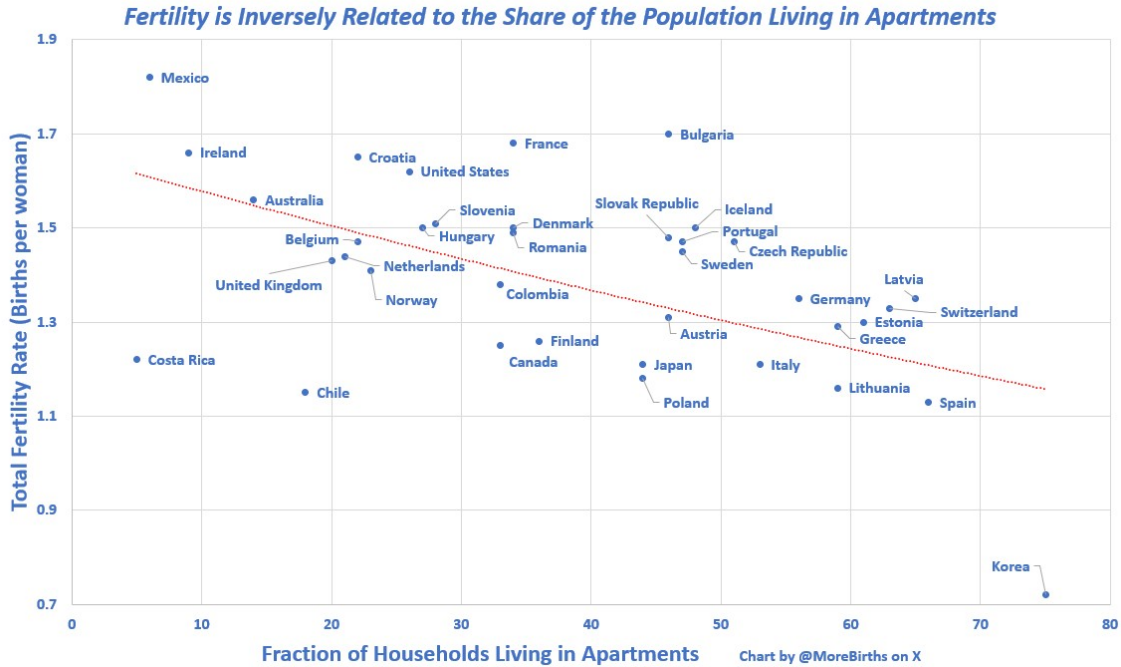
Source: Australian Bureau of Statistics

In every instance, in all four cities, the fertility in the urban core (which is all high-rise apartment towers) is around 1.0 while in the surrounding suburbs which are all zoned strictly for single-family homes, fertility is around 2.0. That's a vast difference that can't be explained by mere selection effects!

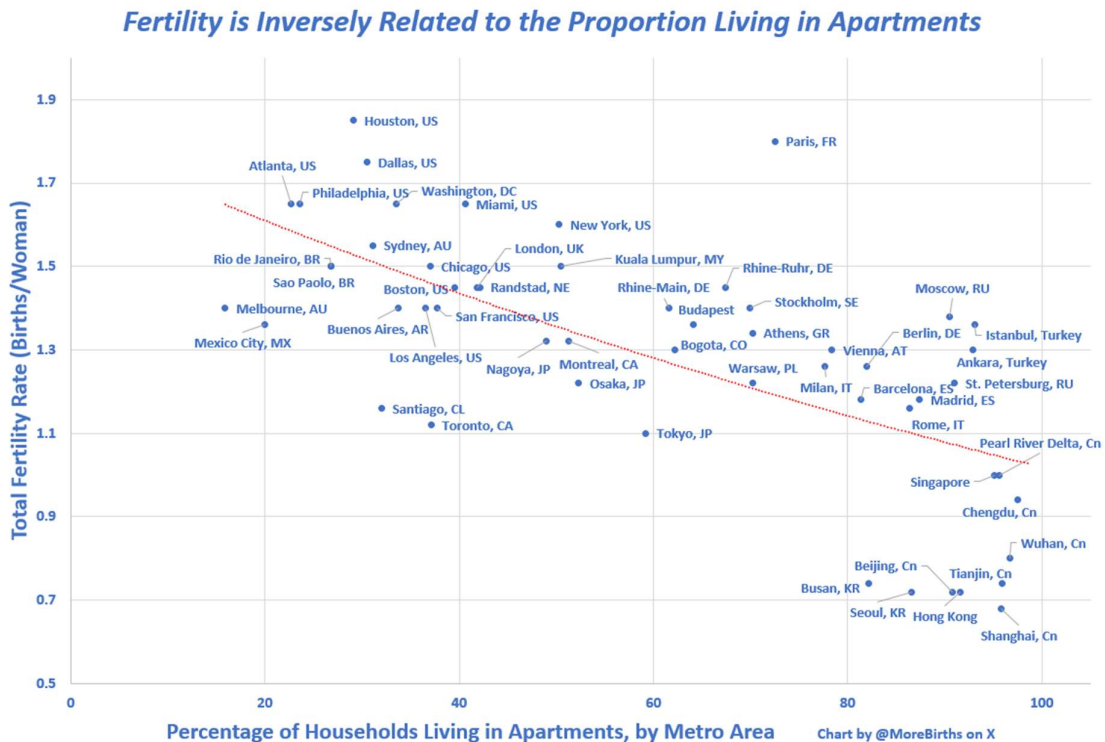
We have maps of the United States, Mexico, Japan, the United Kingdom, the Netherlands, Korea and Germany which all show the same thing. As you move toward the dense core of any city, fertility drops significantly. In suburbs meanwhile, fertility is almost always vastly higher.

Apartments and extreme density appear to be the main problem for fertility

We can plot the share of households living in apartments for different countries. The higher the share the lives in an apartment, the lower the fertility. The difference appears to be about half a child per woman, across the spectrum. In fertility terms, that is a lot.



Within cities, the relationship is the same. The higher the share the lives in an apartment, the lower the fertility. For cities where everyone lives in an apartment, fertility is only around 1.0.



The Fertility Expert Weighs In

Demographer Lyman Stone, who has pored over fertility studies more than anyone we know, offered these thoughts on density and fertility.

"The best evidence we have suggests that living in dense environments causes lower fertility. We know that selective migration does not account for most of the suburban-urban fertility difference. We also know that price/fertility gradients are steeper in denser environments.

We also know that in non-human species reproductive success declines with environmental density even when food stress does not occur. We also know that exogenous shocks to house size or house quality have expected effects on fertility.

In general, housing/marriage/location/baby are problematically confounded decisions; they all go together. So, studying this is all a bit tricky. But there are basically zero studies that have been able to argue that density was pro-natal, on any measure of density.

Now, there remains debate about why density is bad for babies. Some people argue density qua density is bad: basically, they think humans face an evolutionarily crowded environment in cities which triggers serious status anxiety and thus suppressed reproduction. Personally, I think there's decent evidence for both of these lines of thinking. Density probably does provoke certain intensified anxieties and also it really is hard to deliver family-optimal housing in dense environments."

-Lyman Stone, April 2024 in a thread on X

Japan and the depopulation conveyor belt

Building can be good. But the wrong kind of building seems to motivate lower family formation.

Here's what one of us saw in Japan on a recent trip -- So many wonderful family-friendly single-family homes on plenty of land throughout the beautiful Japanese countryside sit vacant and can't be given away. Meanwhile young people endlessly stream into enticing and affordable new high-rise apartment towers being built all over Tokyo, where the data shows they will have very few children.

There seems to be a depopulation conveyor belt running hot in all East Asia, as young people are drawn by affordable city living and likely have a lot fewer kids in the end than they would if they were priced out of the urban core. If you walk around Tokyo, you will see all the ultra-hip young people flocking in – it is a playground for childless adults. Housing that supports family formation is about more than cheap square footage. Tokyo has 137,000 restaurants, so it is possible for a childless couple to eat at a different restaurant every day for

per square kilometer. Yet the fertility of both is around 1.6, comparable to the national average.

What's going on? The majority of Montgomery County, Maryland is suburban with spacious single-family homes, guided over the years by zoning rules that reinforced family-friendly houses.



Above, "high density" in Montgomery County, Maryland

Adjacent D.C., meanwhile, where apartments in high rises are much more common, has a fertility of around 1.1 (0.9 for non-Hispanic whites). Both areas are politically liberal, highly educated and have incomes well above the national average. Yet fertility in D.C. is like that of East Asian countries while Montgomery County's is comparable to France. A vast difference.

This illustrates well the threshold where density and crowding become a problem for fertility. Apartments in towers just aren't made for families. Consider below, newly built apartments in downtown DC. Not a single unit in this complex has more than two bedrooms.



According to modern norms, a two-child family with just one boy and one girl needs three bedrooms because the parents should have their own bedroom and opposite-sex kids of a certain age should have their own rooms. (Child Protective Services does not look favorably on

families that don't follow this. It's a pretty strong norm!) But just seven percent of new apartments in the US have three bedrooms.

In 2023, the share of two- and three-bedroom apartments increased compared to the 10-year average. However, looking at what was built last year, one-bedroom apartments still dominated construction, comprising the largest share of new apartments (48.3%). This was also one of the factors that pushed down the average size of apartments in the last 10 years — a trend that persists despite the recent uptick.

Share of Apartments Built by Unit Type

	Studio	1 bedroom	2 bedroom	3 bedroom
2023	5.2%	48.3%	39.2%	7.3%
Last 10 Years	5.3%	49.1%	38.6%	7.1%
Historical	4.7%	43.1%	43.8%	8.4%

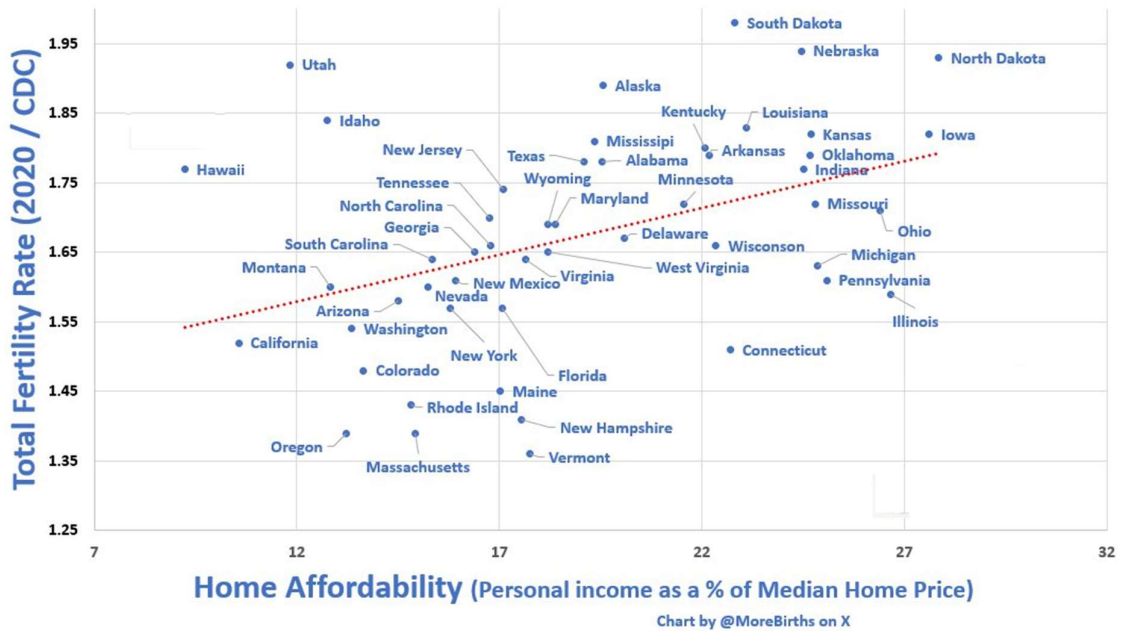
Last 10 years refers to apartments completed between 2014 and 2023.
 Historical represents apartments built before 2014.
 Source: RentCafe analysis of Yardi Matrix data - Get the data - Created with Datawrapper

So, density is not big a problem going from rural West Virginia to suburban Maryland. That's important to know, because we need to bring people together for economic and civilizational thriving! But density becomes a big problem when people are further squeezed into apartments that are ill-suited for families. That's the line.

Now that we've gotten all that out of the way, affordability matters too!

Now that we hammered home what we see as the biggest point, that housing needs to be of the right type, we can add that yes, of course housing needs to be affordable too!

Birth Rates are Higher Where Homes are More Affordable



How a housing shift to suburbs (assisted by mortgages) helped drive the Baby Boom

Most people don't know that before the Baby Boom, fertility was below replacement in many countries including the United States. The paper, "Subreplacement fertility in the West before the Baby Boom" (Van Bavel, 2010) explains:

Between 1925 and 1929, fertility was below the replacement level in at least the following countries: the Czech Republic, France, Germany, and Sweden. None of these countries returned back to the replacement level any time before the start of the Second World War. At the latest by 1936, but earlier in most cases, at least the following countries or regions had joined the subreplacement club: Austria, Belgium, Denmark, Estonia, England, Scotland, Finland, Latvia, Luxembourg, Norway, Switzerland, Canada, the USA, and Australia.

Those years marked a peak of urbanization across these countries. Then something remarkable happened. Assisted by the automobile and new mortgage programs that enabled young people to buy houses early, when it matters for fertility, there was an explosion in the right kind of housing, houses with a yard, and we saw a huge baby boom!

The economy grew rapidly at the same time as it was de-densifying! Another paper, "The American Mortgage in Historical and International Context" (Green and Wachter, 2005) describes what happened.

With the strong expansion of the U.S. economy in the post-World War II period driving up incomes, together with the new institution of the long-term (and therefore affordable), fixed-rate, self-amortizing mortgage, homeownership expanded rapidly. **America was transformed from a nation of urban renters to suburban homeowners.**

As noted earlier, a high rate of marriage was central to the Baby Boom but so was suburban living. Those two pillars together supported the rise in fertility in the US, as well as many other countries.

"Smart Growth" Kills Fertility: The Case of the American West

Portland, Oregon pictured below has a fertility rate of just 1.0, amid high housing prices and a dearth of single-family homes.



This aerial photo looks like two pictures side by side, but it is just one! High density abuts farmland because you aren't allowed to build outward. "Smart growth" is the name for the dumbest housing policies we have.

In 1973, Oregon passed a growth management law to stop the outward growth of cities and towns, forcing ever greater density and ever higher prices. Similar laws were passed in California (1963), and Washington (1990). The result? Housing shortages despite abundant land. Some 99% of Oregon is rural! Across the entire American West, houses are in short supply and fertility is plunging, even though land is bountiful. Why? Because of rules made to stop outward growth and force density. (This is also the case in Canada. Land is everywhere but you aren't allowed build houses on it.)

States that allow new suburbs to be built have far higher birthrates. Below is Cedar Park, Texas, an easy commute to Austin. Fertility in Texas is 30% higher than in Oregon, although on paper Texas is three times denser. Why? Oregonians suffer the artificial density of 'smart growth.' Texans don't.



Oh, and Texas leads the United States, and possibly the world, in economic growth.

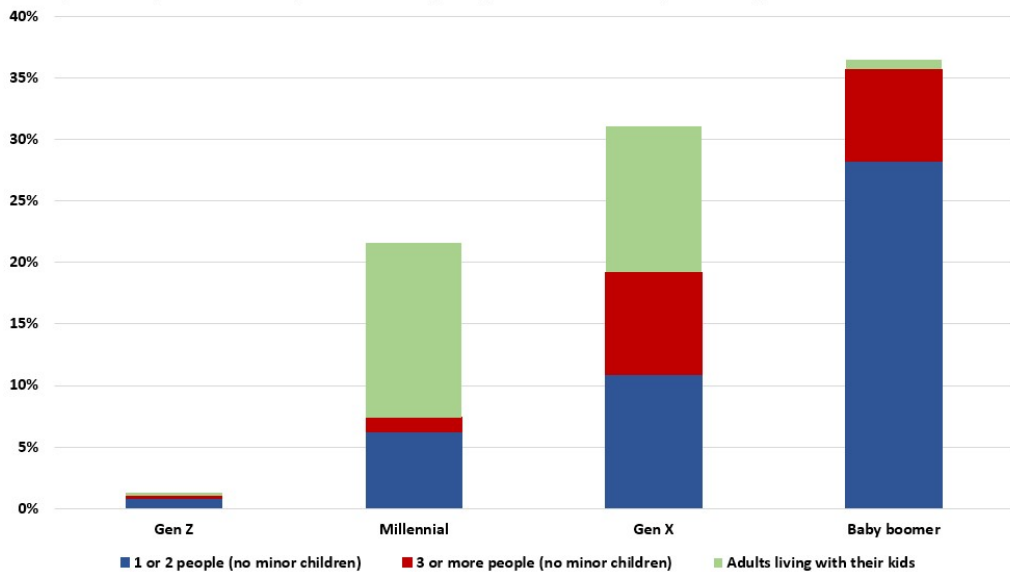
Real houses aren't getting to the ones who need them

There is one more huge issue with housing and fertility. The ones who need the bigger houses usually aren't the ones who have them. Millennials own just 14% of family-sized homes while

empty nesters own 28%. Millennials and Gen Z are often stuck in little apartments completely inappropriate for families while people who are done having kids own way more of them.

Empty Nesters Own 28% of Large Homes; Millennials With Kids Own 14%

Share of 3-bedroom-plus U.S. owner-occupied homes owned by each generation, broken down by household type/size



Source: <https://www.redfin.com/news/empty-nesters-own-large-homes/>

This chart is for the US, but a similar one could be made for almost any developed country.

How do you fix this? Intergenerational transfers could help. If boomers and Gen X want grandkids, they might help their adult children buy a house, or even give them the big house they no longer need. But there are other answers as well. Lyman Stone urges that revenue should come from property taxes rather than income taxes, to encourage people to use no more house than they need.³²

A big problem here is mortgage lock-in. Older people don't want to move, because they would lose the great mortgage interest rate they got years ago, before rates rose. Economists Tyler Cowen and Alex Tabarrok urge the Danish mortgage system. That system unlocks the golden handcuffs and lets older people move without losing the value of their low-interest mortgages.³³

As economist James Rodriguez explains, "Danish sellers are able to earn a *profit* when they trade in their low mortgage rates for more-expensive ones, making it easier to move even when rates rise."³⁴ If empty nesters were thus incentivized to move into apartments and young people could get houses, that would do wonders for fertility!

But also, young people tend to be the poorest segment of society and so are usually stuck in the smallest housing. If the mix of housing shifts from apartments toward houses (as it did during the Baby Boom) then young people are the ones who will benefit most.

There two more reasons to focus on housing:

(1) *How we build affects fertility practically forever!*

Because of the costs and effort involved in construction, major urban centers and even countries can be locked into a decades- or centuries-long trap in which the available housing stock is overwhelmingly unfriendly to those wishing to bear and bring up children. The mix of

housing matters greatly for fertility – family homes on the one hand, ideally with some playing space for children, versus stacked and packed small apartments.

(2) Housing is something policymakers can actually work on!

You can't very well make people religious or legislate that they fall in love. But you can have rules requiring housing that is family friendly. (In fact, we already have rules favoring single family homes. Just don't throw them out of the window.)

What can be done with apartments that have already been built?

Seoul, Tokyo and Shanghai are filled with high-rise apartment towers, and this contributes to the incredibly low fertility in these places. Are they just stuck forever with housing stock that is poor for families?

One solution is to combine small apartments to form larger ones. This should be much easier than converting, say, an office tower into residential housing. Apartments with one- or two-bedrooms units can be combined to create units with four or five bedrooms, which would be much more suitable for families. In the future, there will be an excess of apartments in many cities, as countries depopulate. Combining these into larger units will help deal with this excess while providing family-appropriate housing to help solve the fertility crisis. Although large apartments are not as suitable for families as single-family homes, they would be much better than the small apartments that dominate so many cities.

In conclusion? Build, baby, build! But outward, not upward!

5. Balancing Work and Family, and the Importance of Men’s Income

When it comes to money and fertility, there is a paradox at work. Economics says more wealth should make it easier to have more kids. But it is obvious whether one looks across time or across space – i.e. whether one compares a now wealthy country to its impoverished past or a currently developed country to a developing one – that fertility is negatively correlated with wealth. Compare the England of 1870s, where most of the population lived impoverished lives and the fertility rate was around five children per woman, to the England of the 1970s in which people lived incomparably more materially rich lives but saw their fertility rate plummet below replacement level. Or compare contemporary Germany where women have fewer than 1.5 children with impoverished Niger where they have four times as many.

Workism and the Problem of Priorities

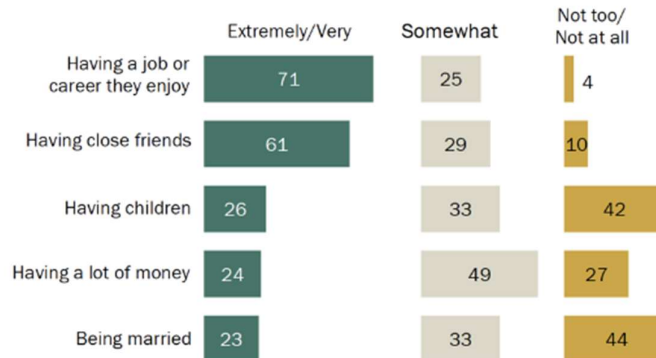
The biggest reason why fertility goes down as countries get rich may be priorities. Atlantic columnist Derek Thompson coined the term *workism* to describe the situation where people prioritize work above everything else. Work is no longer just a means to support families, it is the end in itself. Work is where most people derive status and meaning.

A recent poll sheds like. Like that scene from the movie *Conan the Barbarian*, participants were basically asked, ‘what is best in life?’

The results were eye-opening. Respondents valued ‘having a job or career they enjoy’ as far more important to a fulfilling life than having children. A related question found the same thing in parents’ aspirations for their children. Work has displaced family as the biggest source of meaning for many people.

Americans see jobs and close friends, rather than marriage and parenthood, as highly important elements in living a fulfilling life

% saying, in general, each of the following is ___ important in order for people to live a fulfilling life



Note: Share of respondents who didn't offer an answer are not shown.
 Source: Survey of U.S. adults conducted April 10-16, 2023.
 "Public Has Mixed Views on the Modern American Family"

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What is the solution here? This takes us back to the first fertility factor, a pro-natal ethos and belief. We need a culture that values children so highly that parenthood becomes something to strive for. If career is high status but parenthood is not, what will people choose?

The time conflict between work and kids

In the United States, fertility is higher at low levels of household income but it is also higher at very high levels of income. See this in the chart below. Why is that?

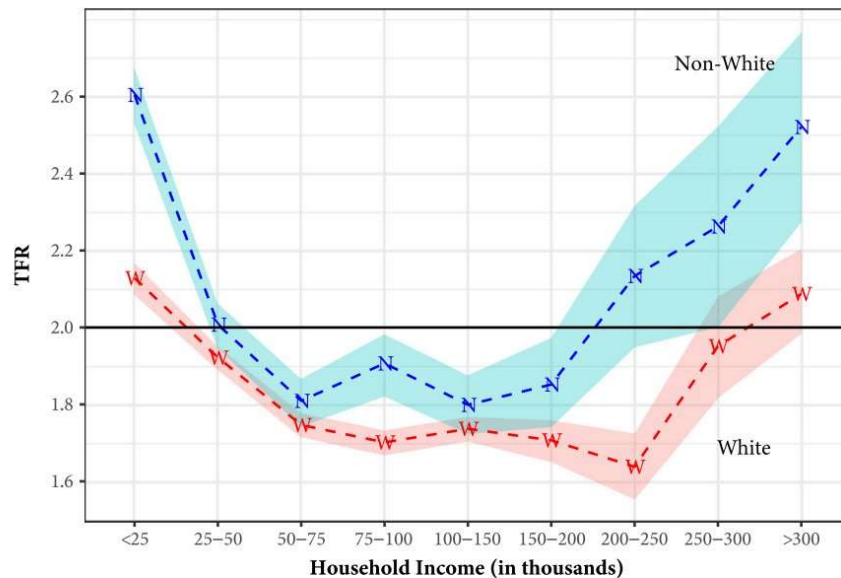


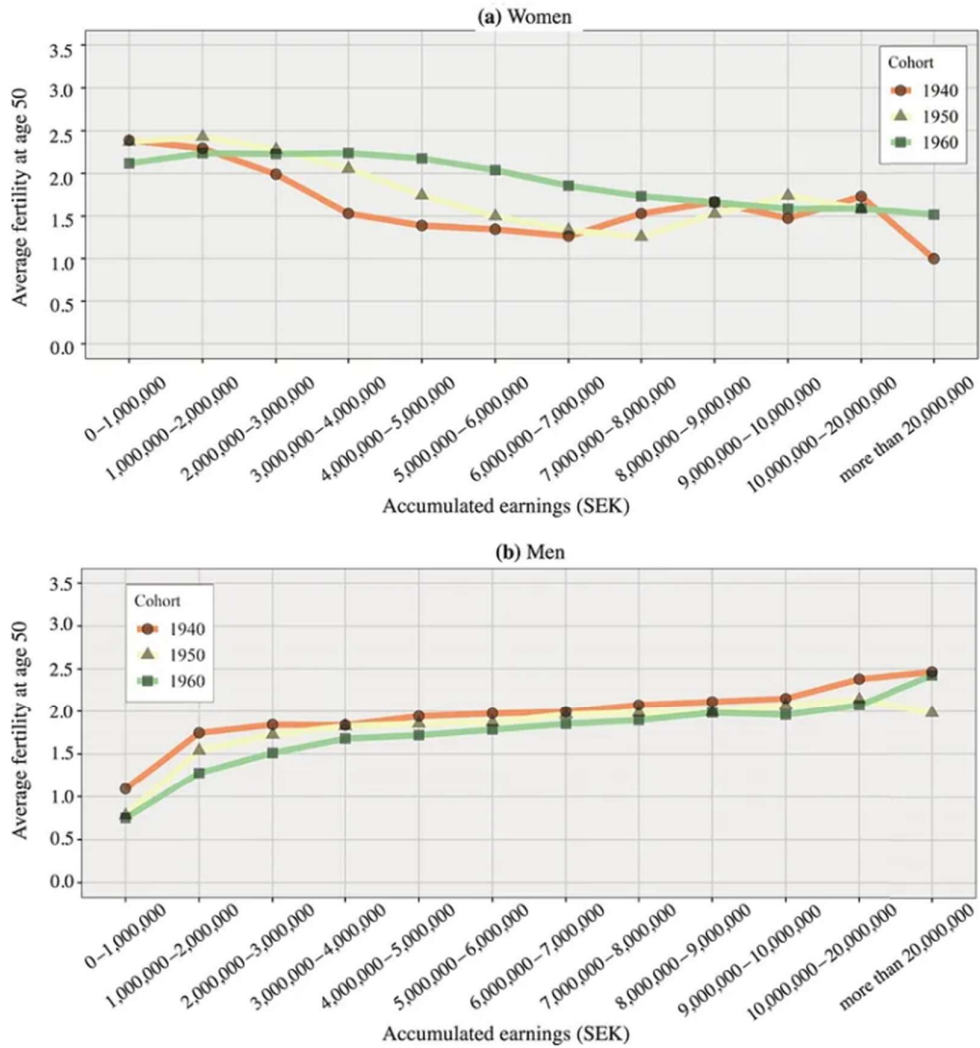
Fig. 7 Total fertility rate ($xTFR$) by race and household income level. We estimate TFR from age-sex distributions within race-income categories using the U.S. Current Population Survey (CPS) March Social and Economic Supplements, combined over 2010–2018. White corresponds to those reporting their race as White only. Non-White corresponds to all other survey respondents. Shaded regions represent confidence intervals (5% to 95%) estimated from 1,000 bootstrap samples in which households in each race-income category are drawn randomly with replacement from the set of all CPS households.

(Hauer, 2020)

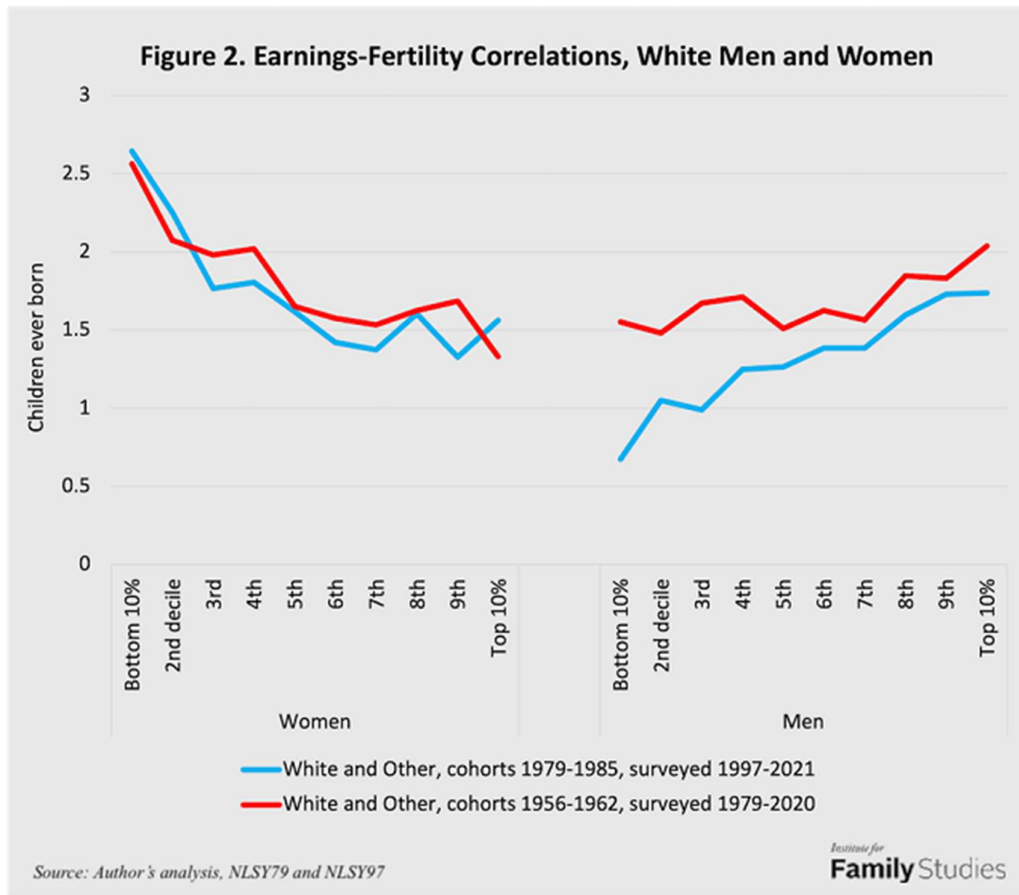
The best explanation is that having two people both working full time outside the home (as is typical in the middle-income ranges) makes it a lot harder to have children. At very low incomes, people are not working and are often living on government assistance. At very high incomes, it is possible to support a family on a single income or people are running businesses and are not hourly wage earners. It may be that the problem is not money itself. It may be the problem is the conflict between money and work in terms of time. One obvious answer is to have just one partner working full time, for those who can swing it.

Men's Income versus women's income

A great paper by Swedish demographer Martin Kolk³⁵ used a large sample to show that women's income was negatively associated with fertility while men's income was positively associated with fertility .



These findings are repeated in numerous other studies. Here is the Institute for Family Studies finding the same thing with a US data set.

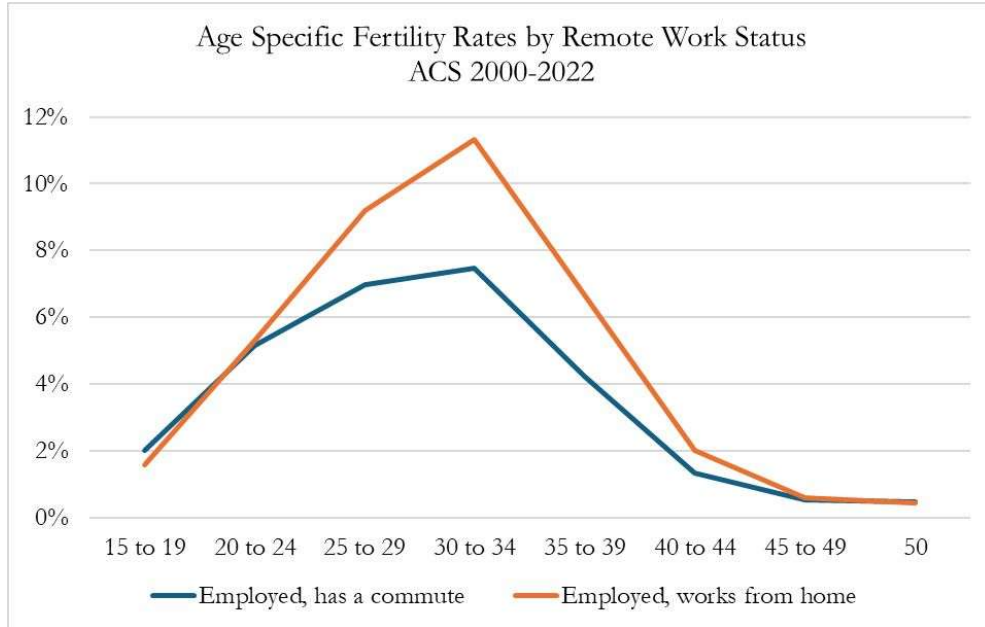


Men with higher earnings are more desirable as partners. They are more likely to marry and provide the economic stability their partners seek to have children. But for women, the relationship is reversed. For women, earnings are negatively correlated with fertility, and one reason is that the conflict between work and childbearing is greatest for women.

If you want to raise fertility, it helps if there are more well-earning men. And that happens to be what women want! The perennial complaint of young women is that there aren't enough good men, and income is a big part of that.

The fertility advantages of telework

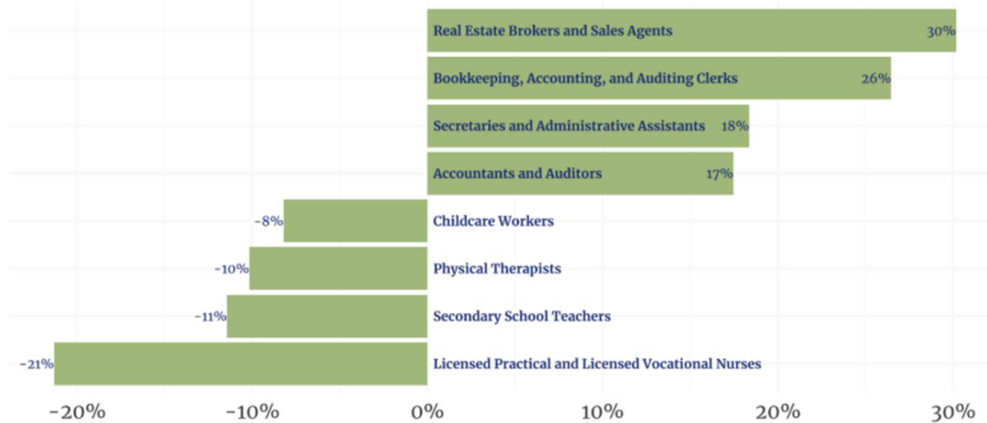
Is there any way to address the conflict between work and family besides having one person quit? One way is via policies that allow work-from-home. Lyman Stone found that where women can work from home, their fertility tends to be around 50% higher, an enormous difference. The sample size was 8.6 *million* employed women!³⁶



Meanwhile, family policy guru Patrick T. Brown found that during the pandemic, fertility soared for women in jobs that allow work from home but plunged for women in jobs that require in-person work.

Relative change in fertility, 2019 to 2023

Among married women age 15-49, selected occupations



Source: American Community Survey, via IPUMS

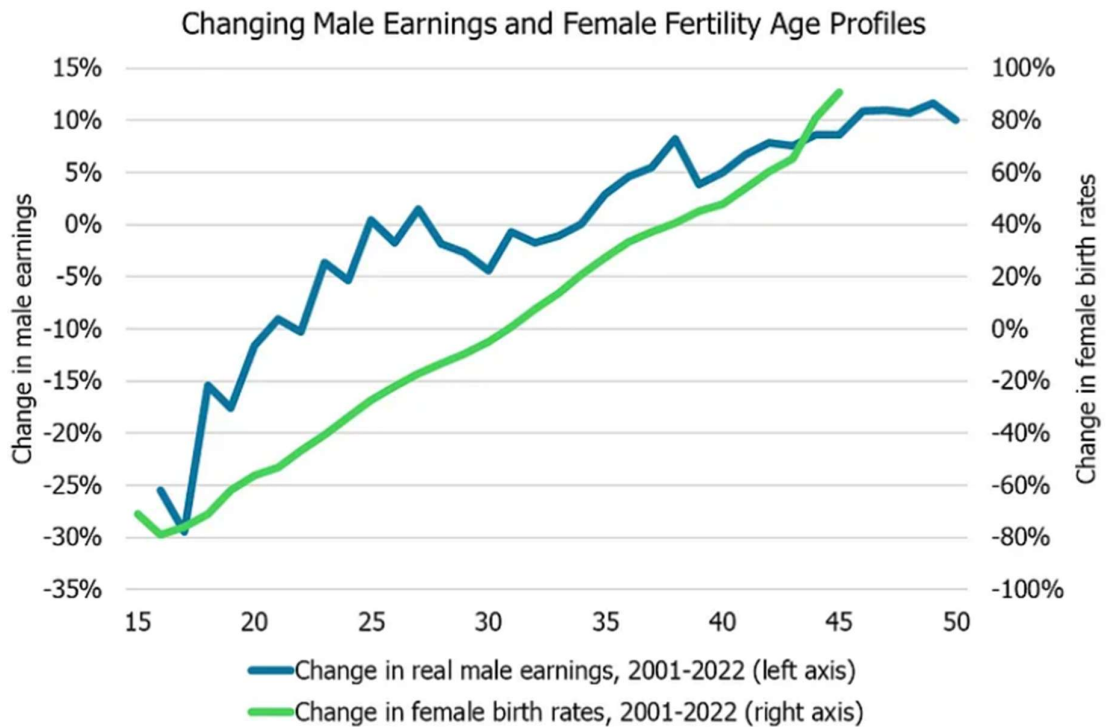
This suggests that if it had not been for remote work, fertility during the pandemic would have fallen by a lot.

Obviously, not all jobs can accommodate remote work. But where remote work is possible, it should be offered, since it tends to be strongly pro-natal. If employers feel that in person work is worth more, they might pay more for that, and give employees a choice.

Income needs to come early

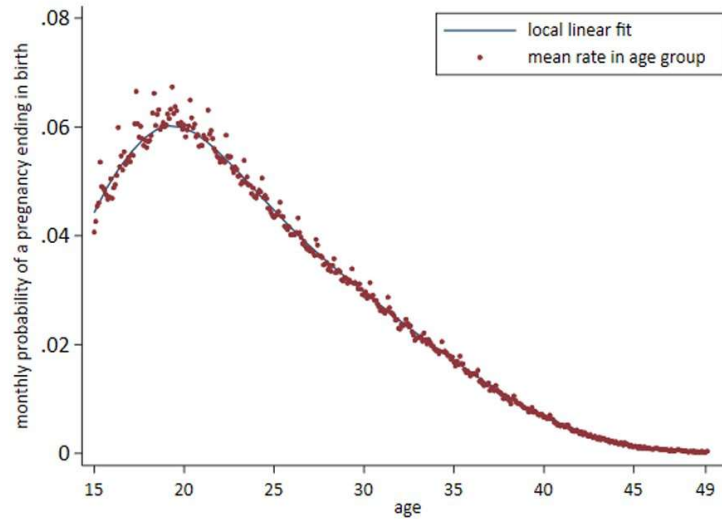
What really matters in modern developed economies is specifically the earning power of the young, or at least those young enough to consider having children, and young men especially. With a reduction in the earning power of young men comes a reduction of coupling and that in turn depresses fertility rates.

In the United States, wages for young men fell in the first two decades of this century with only those in the late 30s and older seeing real rises in their earnings. Fertility rates of the young women of this cohort behaved similarly. Income doesn't help fertility if it comes too late.³⁷



Source: <https://medium.com/@lymanstone/fertility-and-income-some-notes-581e1a6db3c7>

Here what a women’s fecundability curve looks like. Few realize how much higher it is in the 20s.

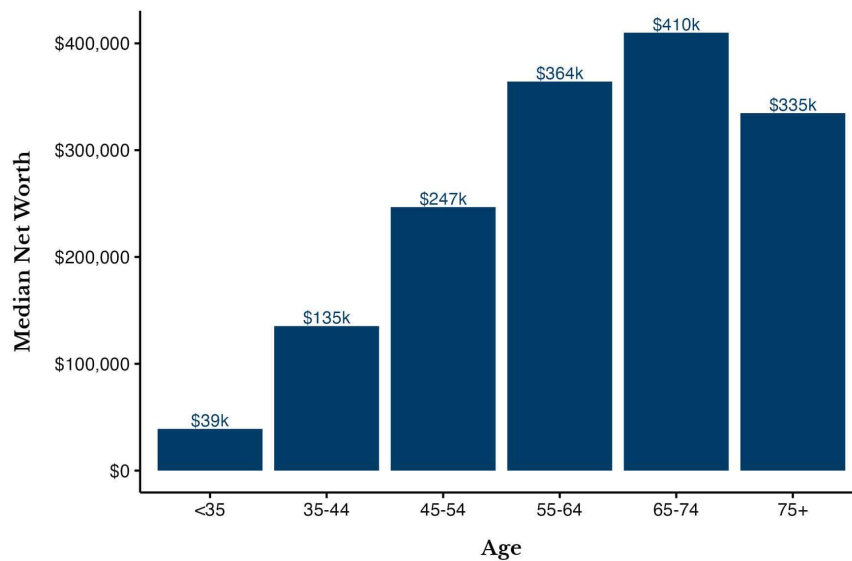


Note: This figure presents estimates of fecundability from DHS data for ages 15-49. Means for each age-in-month group (e.g., 33 years and 2 months old) are plotted as dots, according to Equation 6. Local polynomials (bandwidth 15, order 1) estimated according to Equation 7 are overlaid. fecundability is measured as the monthly probability of beginning a pregnancy that ultimately ends in live birth, among women who are married, noncontracepting, not pregnant, non-postpartum, and non-post-termination.

Source: Age and Infertility Revised, Geruso et al., 2023

Meanwhile, here is what median net worth by age in the United States looks like. Young people under 35 don’t have much money on average, while wealth soars later in life.

Median Net Worth by Age



Source: Survey of Consumer Finances, 2022 (OfDollarsAndData.com)
 Note: Percentiles are calculated using data based on 4,595 U.S. households.

Young people are screaming that is impossible to afford kids while everyone else declares that humanity has never been richer, so what's the problem? Well both things are true. There is a huge mismatch. As we saw above, the ones at the prime age to have kids are mostly not the ones with the money.

One answer to this is that young people need to take the leap to parenthood anyway, while they are still poor. But that isn't very satisfying. Another answer is policy that favors the young and those with children over the old and childless. Here are a few possibilities:

- A tax system that favors those with children. France has used this to great benefit.
- Lean toward property tax and away from income tax. Income taxes hit the young while older people, who tend to be wealthier and retired, may get a pass. Property taxes on the other hand go light on the young, because they have less property!
- Incentivize early inheritance. Typically, people get a windfall when they are somewhere between age 40 and 65, when their parents die. That is way too late to help them to have kids. Can we incentivize that transfer happening sooner?
- Early credentialing can help. Long educations hurt fertility by delaying earning and childbearing until long past the peak of the fertile years. If there were ways to prove your worth to employers without being in school until age 30, that would go a long way to giving us the early household formation that was characteristic of the Baby Boom.

6. Men Pitching In, Women Having Realistic Expectations

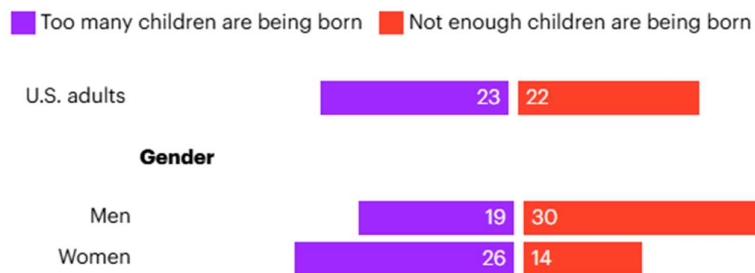
Of all the solutions to the fertility crisis, a favorite of men is a return to some warmed-up version of the 1950s as prevailed, or is imagined to have prevailed, across much of the world in the past. But most women do not wish to return to a world in which they are not able to pursue their own development and goals as far as they wish to, nor to a world of chauvinistic men.

A particular kind low fertility trap has emerged in the eyes of many demographers. Nobel prize winning economist Claudia Goldin explains that there is an incomplete fertility transition in many countries, where women are working full time but also still doing most of the child-rearing.³⁸

More men than women have pro-natal attitudes

In the US at least, men are more aware of the fertility crisis than are women. More than twice as many men as women understand that too few, not too many, children are being born. By contrast, by a 2 to 1 margin, more women think too many children are being born, reflecting the lasting power of the era people feared overpopulation.

In the United States, do you think that...? (% of U.S. adults)



Note: Responses of "about the right number of children are being born" and "not sure" are not shown.

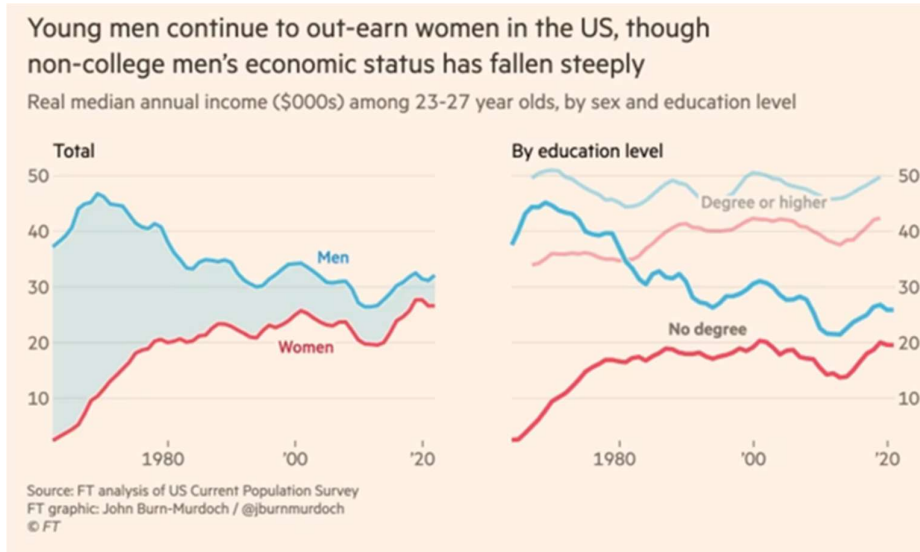
YouGov

Chart: David H. Montgomery • August 5, 2024 • [Get the data](#)

We saw this at the first Natalism conference in Austin, Texas, where men far outnumbered women. Relatedly, when polled, men seem to express higher fertility preferences than women.

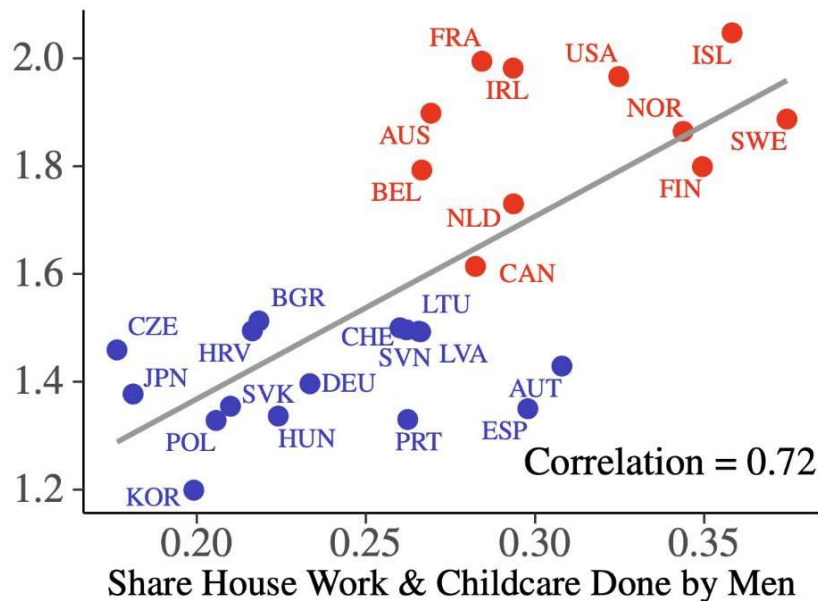
Yet on average, women seem to be carrying a heavier load than men

Consider, women are now earning almost as much as men.



Source: Financial Times

Yet all over the world, women do most of the housework and childcare. Even in egalitarian Sweden, women do 2/3 of housework and childcare. In countries like Korea, women do nearly all of it.



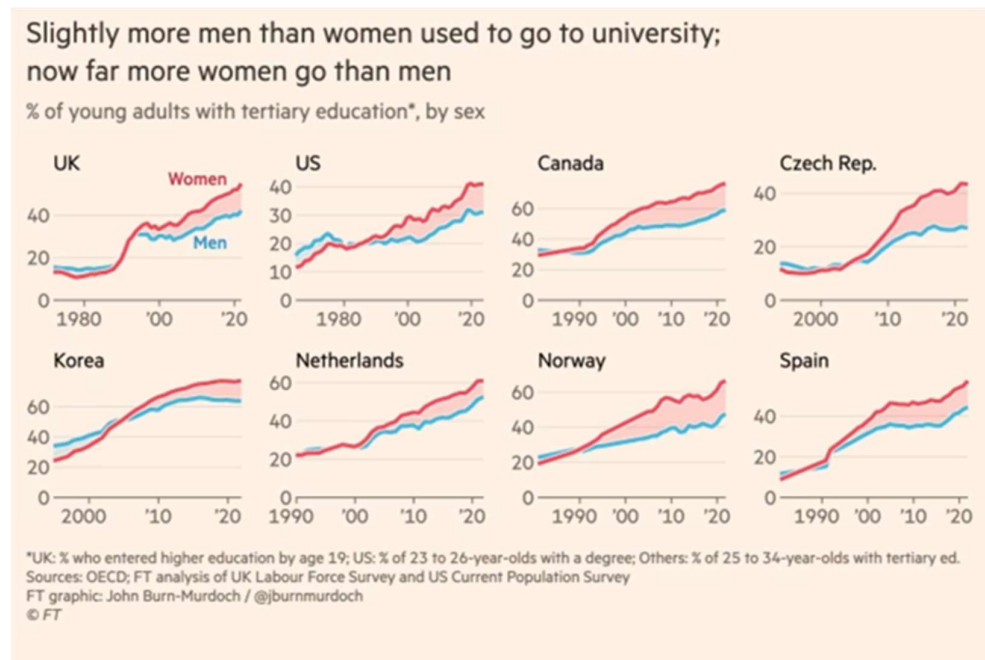
Source: "The Economics of Fertility," by Doepke et al., 2022

Full time work combined with full time parenthood is a heavy load indeed, and that is typically the burden of women but not men these days. Seen from that perspective, it sure seems like a lot of men are wanting children while not doing enough to make it happen.

There are big fertility gains to be had from men doing more in different domains

Although we can find plenty of examples of exceptional men are doing extraordinary things, in terms of education, career and in the domestic domain, the average man just isn't keeping up with the average woman.

Men have fallen far behind women in education, in virtually every country. That means many highly educated women will not find similarly educated men to partner with.



In income too, women have experienced huge gains while men have gone nowhere for generations. Now young men earn barely more than young women. Given that women also shoulder the load of bearing children, men's 'value add' seems unimpressive.

By merely keeping up with women and getting more education and then a decent job, men dramatically increase their odds of having a family because to women, marriageable men (that is, men who at least match comparably to themselves) are in short supply.

Meanwhile, consider that big gap in housework and childcare in the earlier chart. Where men are prepared to roll up their sleeves and help around the house, they seem to have more children, at least looked at on an international-comparison basis. It does make sense that in the pressured dual-career and dual-income households which prevail across much of the world, it makes a big difference when men are willing to take more of the load. Even when men aren't doing as much domestic work as women, merely making the effort seems to make a big difference.

In marriage and family, rewards will come to men who are hardworking and become successful. And for women struggling to find a good man to marry, nothing would be better.

The distortion of the dating apps

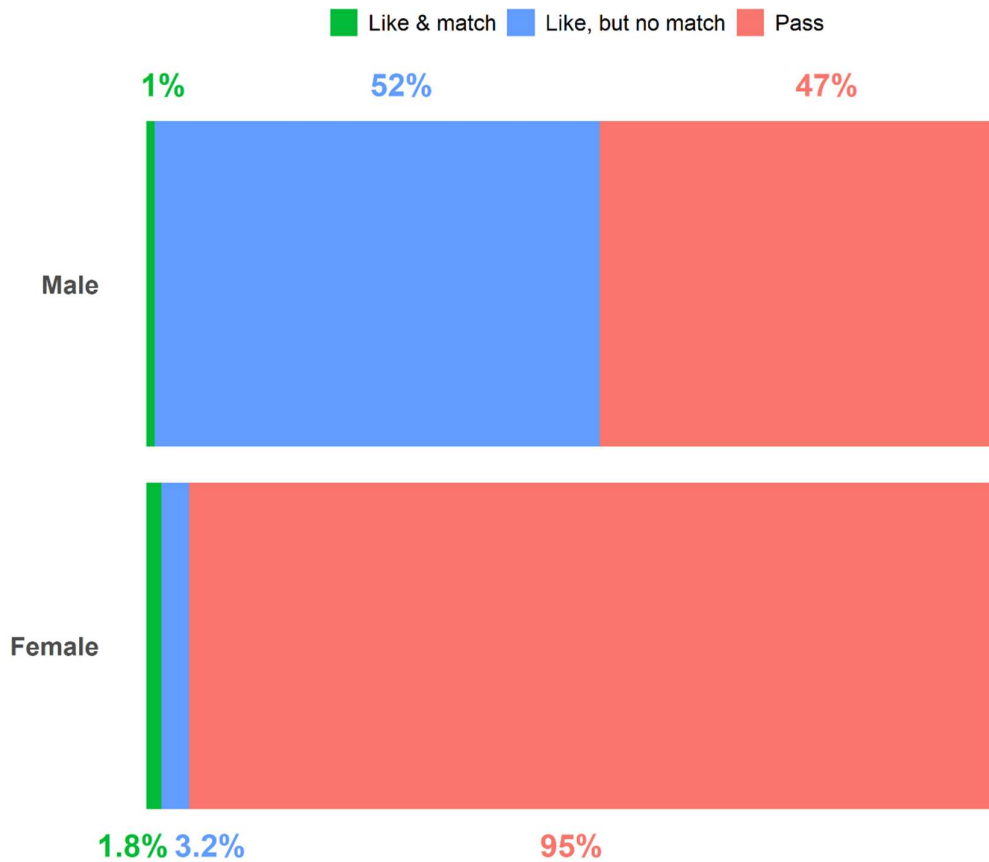
Having urged men to be better, we must add that women may have to soften their standards, if the human race is to continue.

Dating apps now represent a huge share of the connections people make, and they are distorting the dating market like crazy.

Swipestat.io looked at the experiences of men and women on Tinder. Men 'liked' a majority of the profiles they saw but only matched with 1% of women. Women 'liked' just 5% of the profiles they saw and yet got a match with a majority of men that they liked! It seems most women were matching successfully with the top 5% of men, while most men were being rejected by even the most mediocre women.

The Experiences of Men and Women on Tinder

Women match with 36% of those they like while men match with less than 2%



Swipes
Source: Swipestats.io
CC BY

To give just one example of the distortion at play, Swipestats.io reported that 90% of likes by women were for men over 6 feet tall, a category that includes just 14.5% of all men. Through the lens of the apps, many women are given the false impression that they are '9's and '10's and learn to have impossibly high expectations, while many men come away feeling hopeless. With height for example, only one in seven of women will ultimately partner with a 6-foot-tall man, but all are led to believe that he will be available to them. Meanwhile many decent men will want to give up. What a disaster!

The only antidote is for men and women to stay far away from the apps and return to the old ways, at least as far as dating is concerned. Church, work, introductions from family and friends, matchmakers, absolutely anything else! And most women need to set their sights lower. The signals people are getting from the apps aren't real.

7. Relaxed Parenting

One of the key reasons why parents in developed, urban societies have fewer children is that expectations for parenting are through the roof. How did parents ever have as many children as they did, in the old days? Mainly, parents didn't do as much for each child, and then they put them to work young.

These days we have fewer children and try to invest more in them so that they can emerge ahead in the competitive race that characterizes much of developed society.³⁹ But how much does that matter?

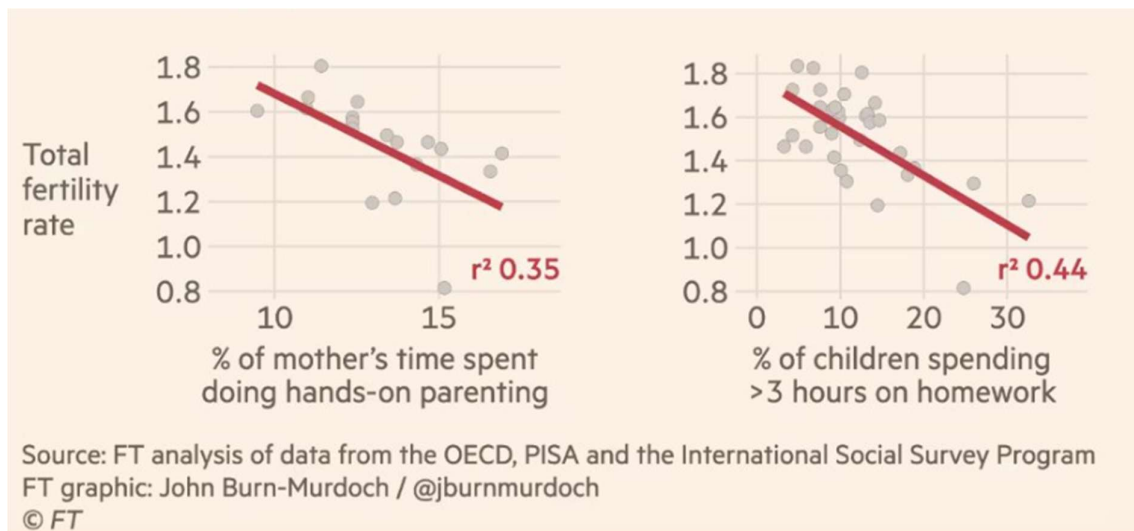
We often have this idea of a quality/quantity tradeoff with children, where you should have fewer kids if you want them to be more successful. But here is an interesting factoid to consider: Almost every US president came from a big family, and none were an only child! The average family that produced a president had more than six children, and all but three had more than two. This makes sense. Presidents have incredible social skills and for that it really helps if they had a lot of siblings.

The whole business of parenting has become too intensive and expensive. Even as birthrates are crashing, parenting has gotten a lot more demanding over time. Parents spend around twice as much time with their kids as they did 40 years ago, according to one study. Travel teams, a rare thing a generation ago, are the norm today. Growing up most of us would walk to the bus stop by ourselves. These days at school bus stops, the number of waiting parents is almost equal to the number of kids. How do they find the time for that?

It seems like it would be hard to have a lot of kids when parenting is like this. And the data bears this out.

Time intensive parenting is linked to lower fertility

Data analyst and journalist John Burn-Murdoch looked at several policy and cultural factors impacting fertility rates. The two most negative correlations? For OECD countries, the amount of time mothers spent on 'hands-on parenting' and the amount time kids spent on homework both were linked to much lower birthrates. Both are proxies for high-intensity parenting.

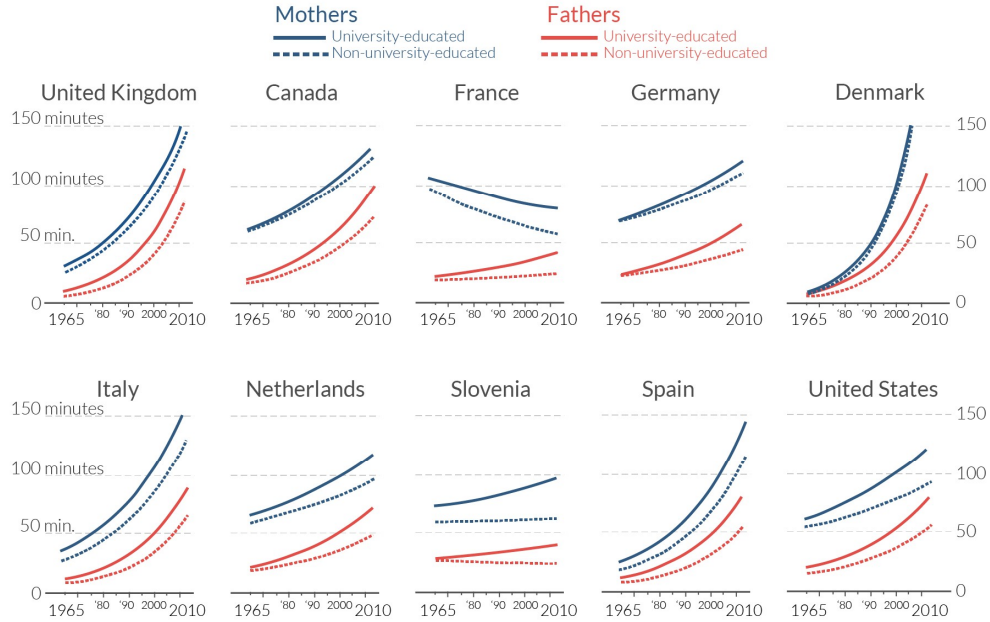


This makes sense. If raising kids is seen as an onerous task, fewer people will want to be parents at all. Those that do become parents will want a lot less children.

It is no surprise, then, that as parents spend more and more time on parenting, so fertility rates are falling:

How much time do parents spend with their children per day? Our World in Data

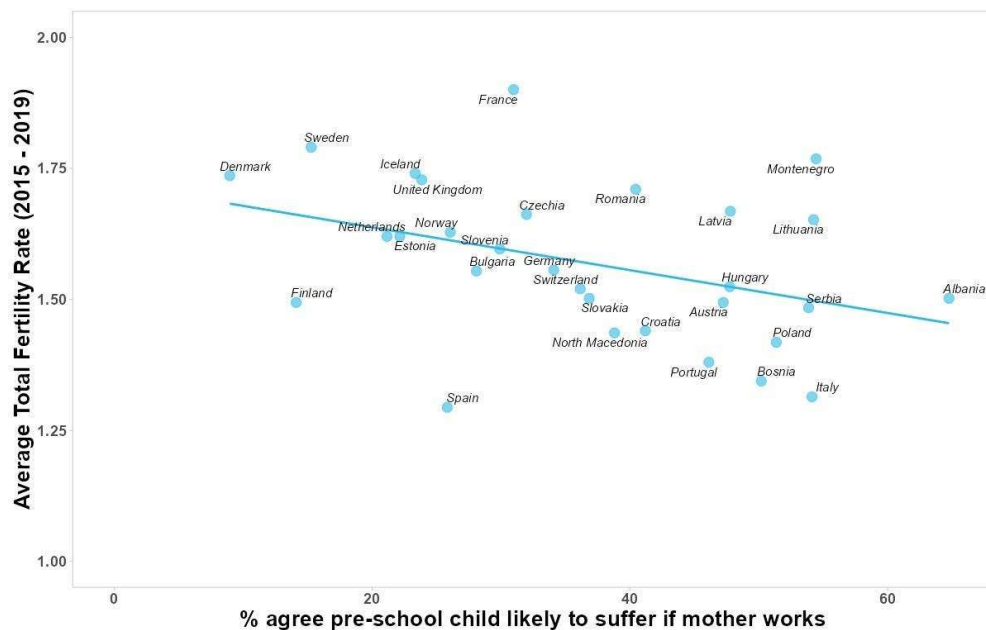
This includes washing, feeding and preparing food, putting to bed, supervising and playing with children.



Daily child care is measured in minutes per day, based on data from the Multinational Time Use Study (MTUS). This is measured for parents aged 18–65 living in households with at least one child under 13 years old. The data presented is based on modelled figures which are comparable across countries by adjusting for partnership status, number of children, age of youngest child, employment status, and survey day of week at the overall sample means. Data source: Guilla M. Dotti Sani & Judith Treas (2016). Educational gradients in parents' child-care time across countries, 1965–2012. *Journal of Marriage and Family*. OurWorldinData.org – Research and data to make progress against the world's largest problems. Licensed under CC-BY by the author Esteban Ortiz-Ospina.

The best family model? Whatever you like!

The Boom Campaign, a pronatalist group, presented this chart showing that the belief that “a child is likely to suffer if their mother works” was linked to lower fertility rates in Europe.



For traditionalists, this is tough to swallow. Surely, it is supposed, it is beneficial for kids to have their mother stay at home with them when they are little. Stay-at-home moms are a cornerstone of many successful families. But so are working moms. In parenting more than almost anything else, we make the perfect the enemy of the good.

It turns out that if women think they must choose either work or having children, then a lot of them will choose only work and birthrates end up being lower. This seems robust. Policy writer Aria Babu looked at the same question for a number of additional countries and found the relationship still holds.

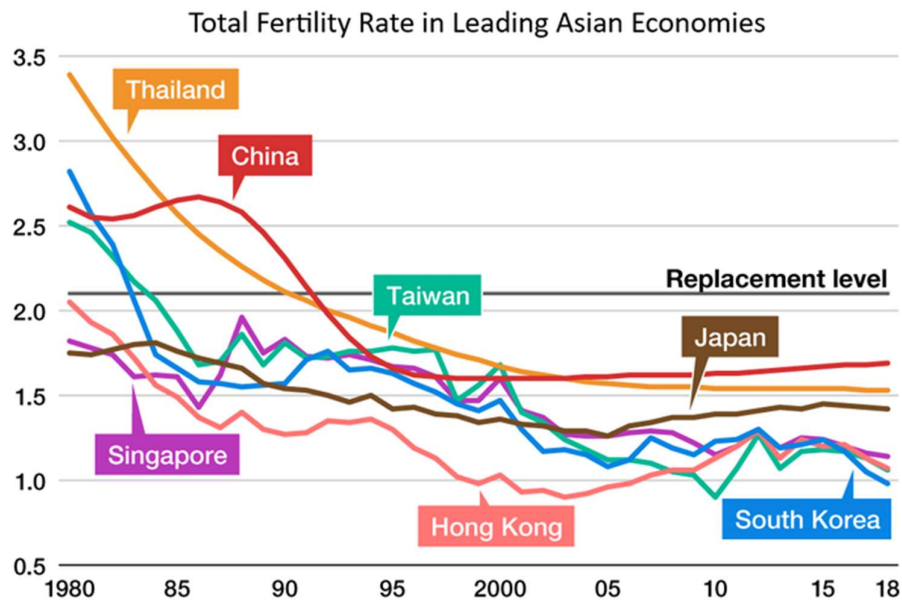
It is more pro-natal to welcome either option, having a full-time parent or having two working parents, with equal enthusiasm. A majority of women want to work, and many have incredible talent. If society denigrates either careerist mothers or stay-at-home moms, a lot of women will reject motherhood completely.

Mainly we need more parents. For that it helps to be very flexible about how people get there.

Tiger Mothers: How is it going?

There is one group so known for intensive parenting that there is a word for it. Yale Professor Amy Chua wrote a bestselling book, *Battle Hymn of the Tiger Mother* that valorized the intensive parenting-style of Asian parents worldwide. Her book drew a lot of strong reactions. Some were inspired to try harder, while many parents were upset that their children would be left behind. No doubt, the book and the mindset that inspired it meant ratcheting parenting up more than ever.

How is all that tiger parenting going? Not very well, if the goal is to keep the lights on in the long run.



Created by Nippon.com based on World Bank and Government of Taiwan statistics.



This is not just an East Asian quirk. The East Asian pattern of high investment in very few children holds around the world. In the United States, East Asian women have the lowest fertility rate of any group, even though they have the highest marriage rates of all.

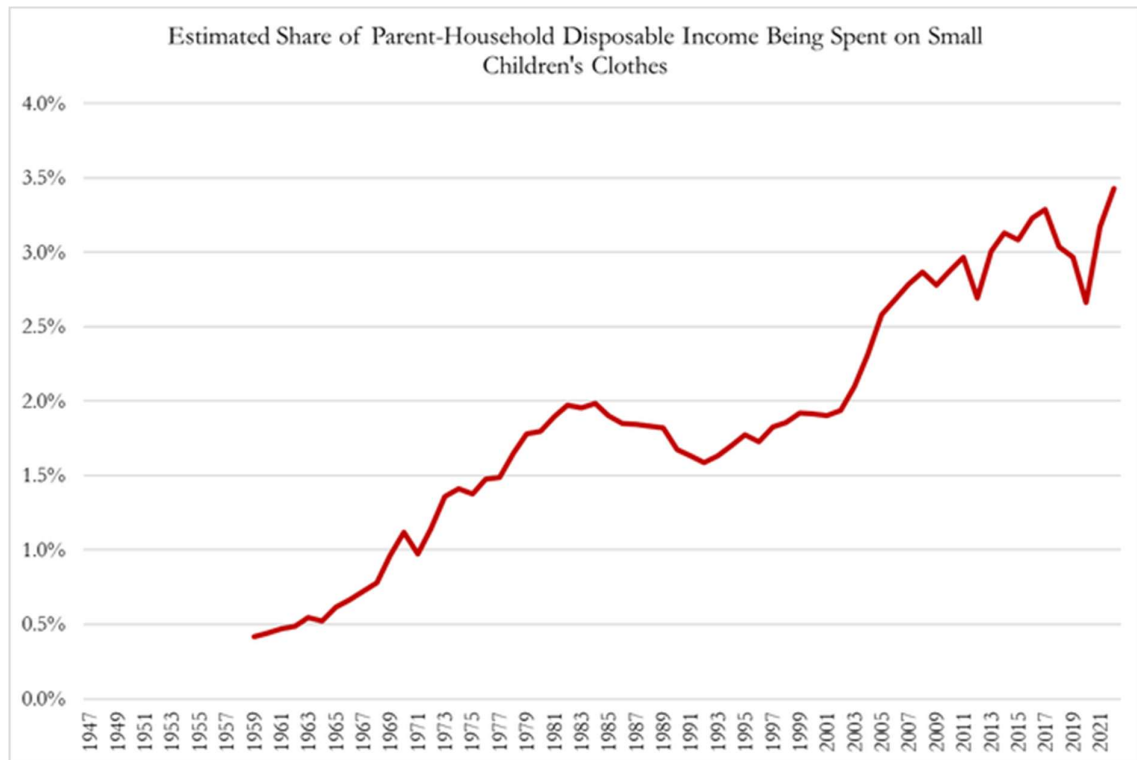
Experts agree, we make parenting much harder than it should be

A lot of writers and thinkers on the topic think we should make parenting less complicated, stressful, and expensive. Economist Bryan Caplan notes in his book *Selfish Reasons to Have More Kids* that parenting should be easier than ever because of modern conveniences and our better quality of life compared to our ancestors. In theory, people should have more kids as society grows richer. Instead, we have fewer, and parenting feels harder. Why? We have placed many new requirements and expectations on ourselves that earlier parents never had. A lot of that effort isn't necessary, he says. Caplan gives another reason not to try too hard with parenting: biology. Nature has a huge influence on how kids turn out regardless of what parents do. Adoption studies show that for all the effort that adoptive parents put into raising kids, they tend to be quite similar to their biological parents. This is liberating in a way. If our parenting matters less, we might as well have fun and not stress so much about whether someone got a little more TV than they were supposed to.

Journalist Tim Carney in his book *Family Unfriendly* laments the 'travel team trap' and revels in the joy of a kind of controlled chaos where families hang out and socialize at events like church barbecues while kids run semi-wild, under the not-especially-watchful eye of their elders. The best part? Parents have a great time, everyone ends up happy and well fed, and nobody had to try very hard. Perhaps the dad manning the grill will sweat a little, but stress is low. When life is as fun as that, it's not hard to imagine having a gaggle of kids. Carney has six and a few in his circle have ten or more. Carney explains that parenting is a lot easier when there are thick parent networks where families back each other up. To have that, he says, it helps when one parent can step back from work to be devoted to the family full time. (For bigger families, that makes a lot of sense. Two full-time wage earners plus a bunch of kids is a harder difficulty setting than most would want.)

Catherine Pakaluk's book about mothers of five or more, *Hannah's Children*, has some choice quotes. "I couldn't care less if my kids are happy. That's their job." – Laura, mother of 9. "It's funny because our culture wants to not have kids do [hard] stuff so that "they can have a childhood" but then when they don't feel useful then they don't know what to do. They feel depressed." – Kim, mother of 12. You get a sense that this is a different parenting style. Yet here is the kicker: a Norwegian study of 114,500 kids found that those in big families were happier and had better mental health!⁴⁰ For mental well-being the best thing parents can give a child is not high intensity parenting but an extra sibling.

Lyman Stone looked at data on clothing spending and found something incredible. US Parents are spending seven times as much of their income on little kids' clothes as they did at the height of the Baby Boom in 1960, even though there were a lot more kids back then. In inflation-adjusted dollars, he found, parents are spending 20x as much on kids' clothes these days!



We lament that parenting is so hard and expensive these days, but in a lot of ways we are doing this to ourselves. We can aim lower in a lot of ways and things will be fine.

Parenting is easier with a backyard

On the topics of making parenting easier, there is one more thing to be add. We know that fertility is far higher in single family homes than in apartments, but why is that?

Here's a guess, from someone raising six kids. It may have to do with the fact parenting is a lot less work when kids have a playroom, a yard to run around in, and a natural sound barrier with the neighbors. That way, kids can entertain themselves in a bunch of different ways while parents can ignore them to get other stuff done. When the family is confined to an apartment, parents have stop what they are doing and take a trip every time the kids want to touch grass, which may be many times a day.

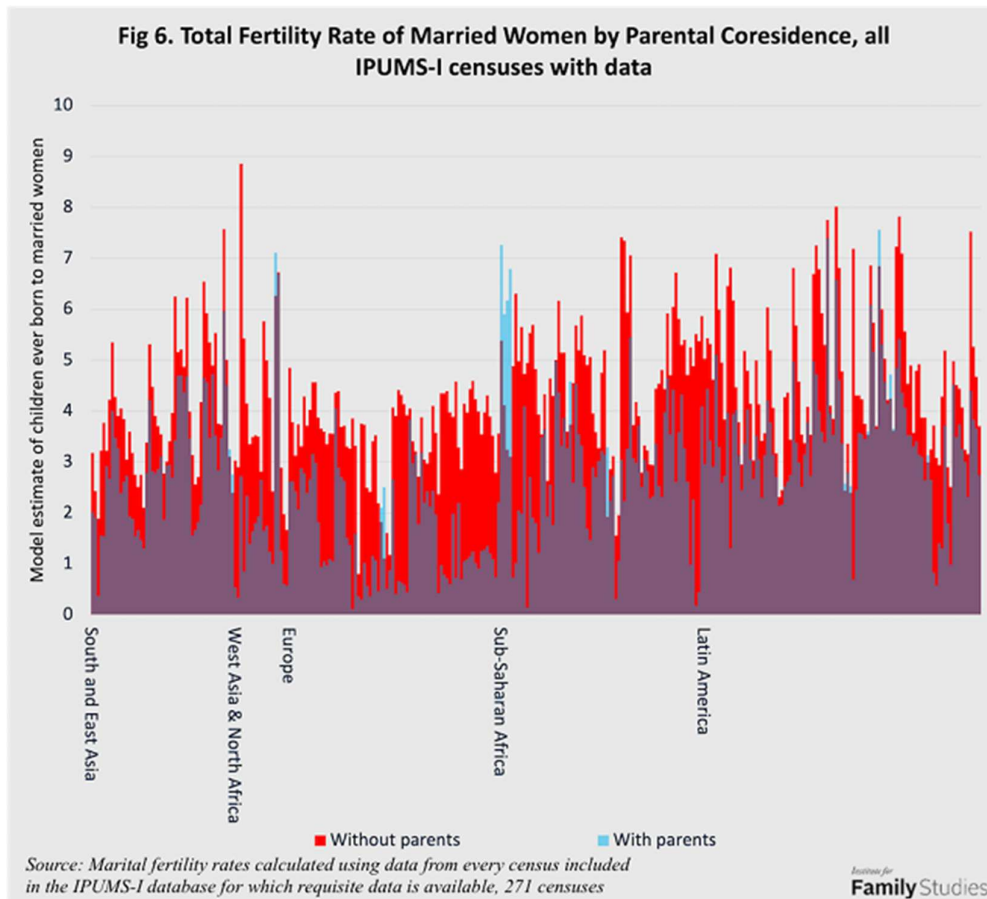
8. For More Grandchildren: Get Grown Children out of the House, but then Help them out!

When it comes to the effect of parents of grown children on fertility, there are two different factors at play. First is independence. One of the worst possible factors for fertility is when adult children remain in the home of their parents. Across hundreds of surveys, the effect of grown children living with their parents is overwhelmingly negative for fertility.

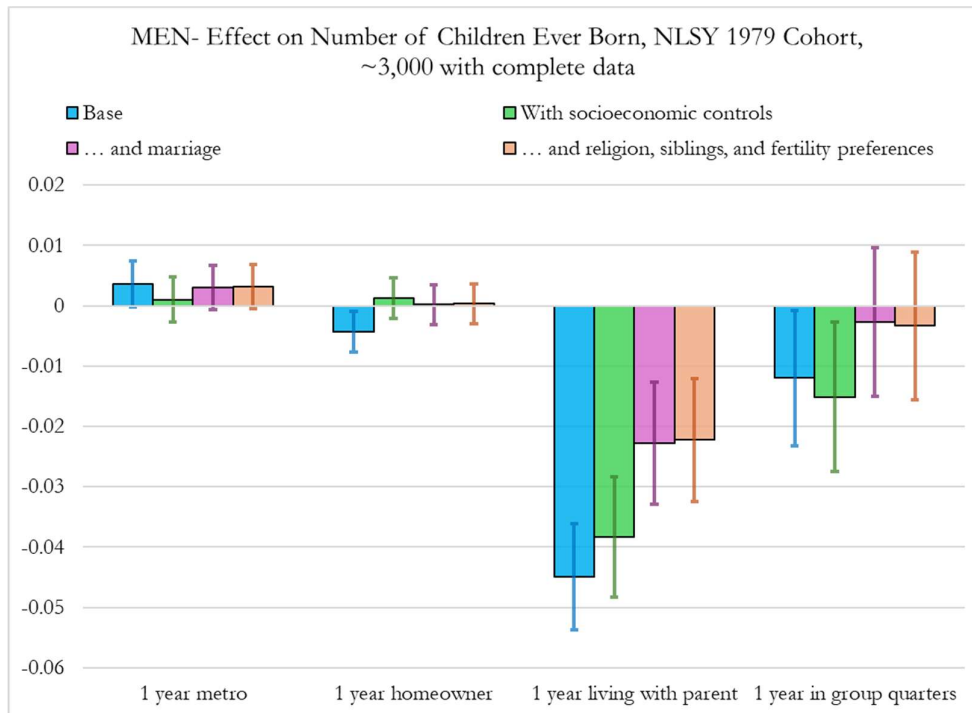
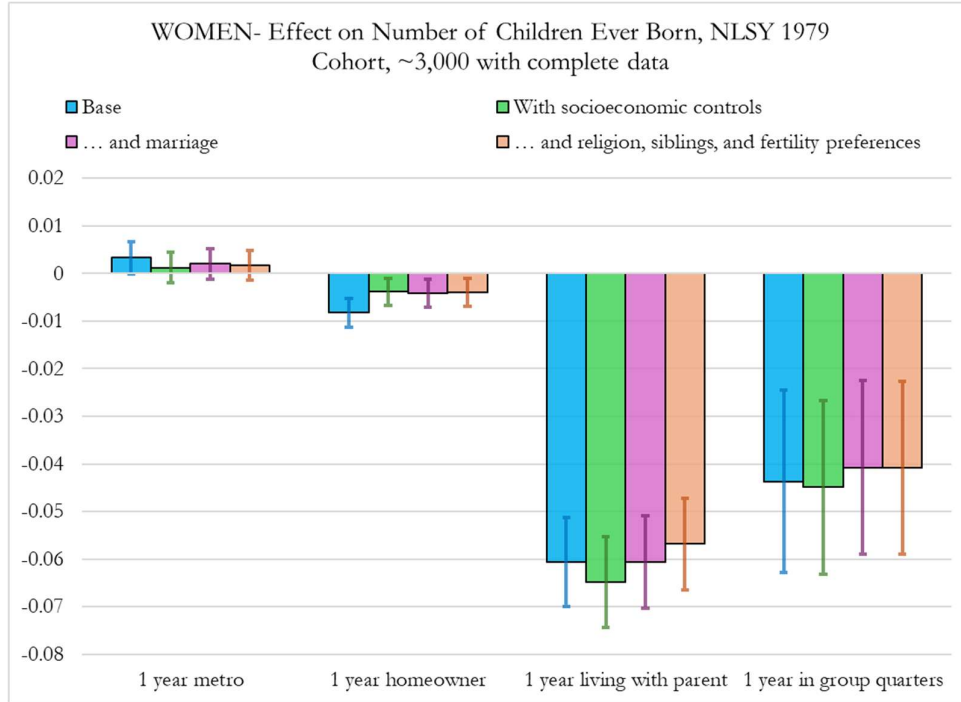
At the same time, most young families struggle immensely with affording a home and with childcare. Parents can support their children to buy a home, and they can support with childcare if they live nearby. But not in the same house!

For fertility, young people must leave the nest

The Institute for Family Studies looked at how fertility is impacted by adult children living with their parents. The effect was overwhelmingly negative, across 271 national censuses gathered by IPUMS International and spanning 300 years and numerous countries on six continents.⁴¹ When an effect shows up so uniformly across so many data sets, it is almost certainly causal and the story here is clear. For young people to have a family, it is extremely important for them to live independently.

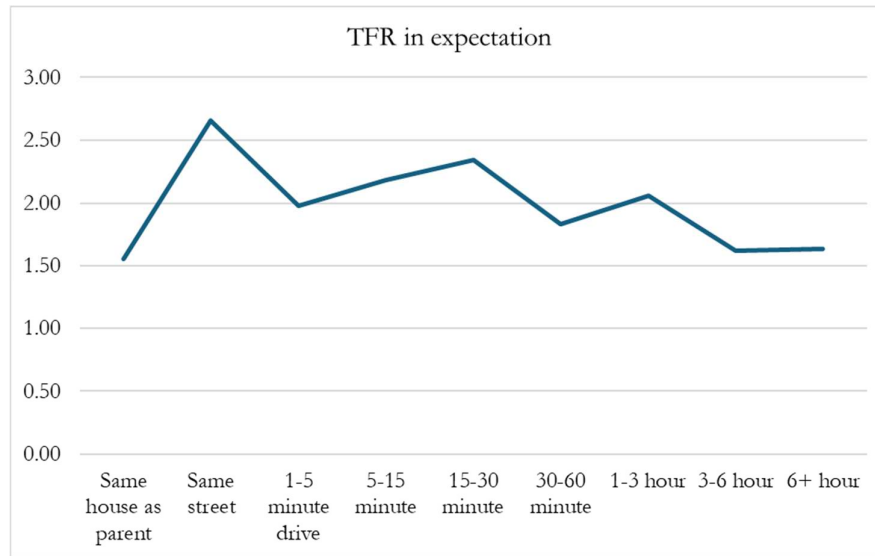


Lyman Stone looked at a cohort in the United States born in 1979, examining the impact of each year of adulthood spent in different living arrangements. What did he find? For both men and for women, each year of adulthood spent living with a parent was very negative for lifetime fertility. Men and women living with their parents are much less likely to partner up, and ultimately much less likely to have children. ⁴²



Grandparents caring for grandkids is invaluable (but with separate residences)

All this is not to say young people should cut off from their parents. Rather, the ideal in terms of fertility seems to be when young people live separately from, but close by to, their parents. Lyman Stone looked at the childbearing plans of women in relation to distance from parents. He found (as expected) that living with parents was negative, but also, living far away was negative too. The optimum? Living separately but close enough to benefit from childcare help!⁴³



If we accept that there is no going back to a world in which most women stay at home full time and look after their children throughout their childhoods then there must be other ways to ensure that the newborns and young children are cared for. There is clearly a big role to be played by grandparents.

Active grandparenting is of course not always possible. Sometimes grandparents of young children are no longer alive – although this would be less and less likely given lengthening life expectancy if each generation had their children relatively young. Indeed, the lengthening of the gap between generations is a problem here.

Another problem is the fact that grandparents are not always around. In some countries and economies (such as the United States), moving long distances away from the area in which one has grown up and in which one's parents still live, is quite common. Society and economies cannot be reordered from the top down in this respect, but if people make it a priority, it is not impossible for grandparents and children to live close together. That need not mean the children staying where they grew up but might mean the grandparents moving to be close to their children who are working fulltime and have children of their own.

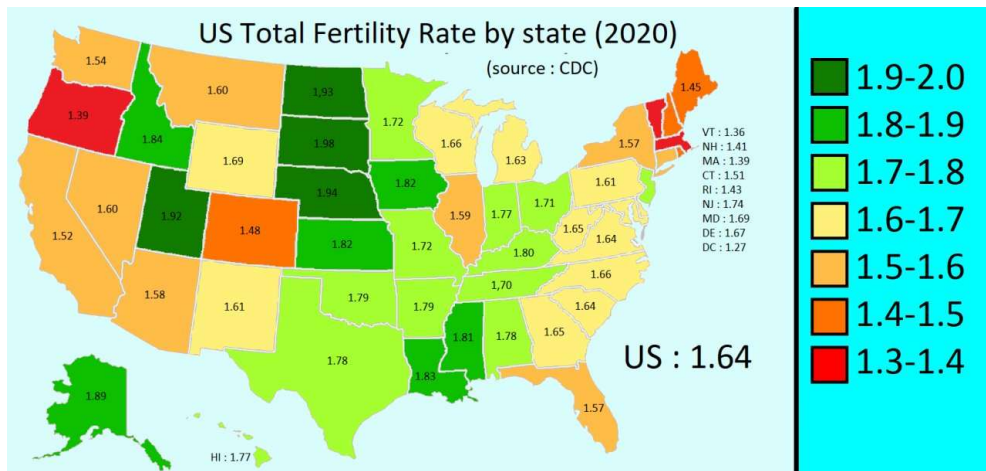
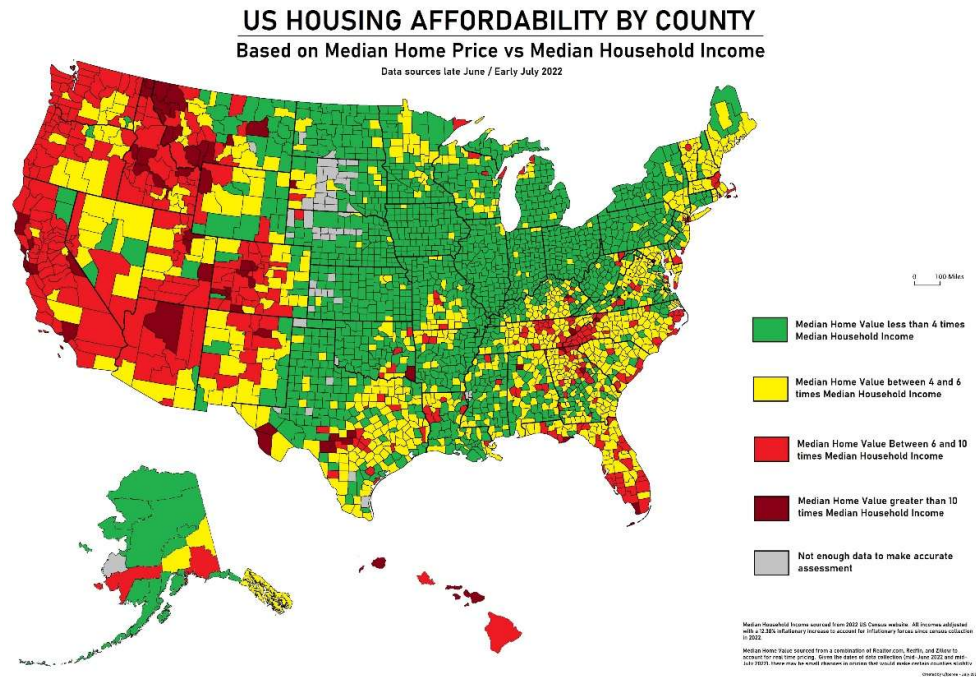
Grandparents as an engine of high Israeli fertility?

One Israeli academic discussing the country's high fertility rate suggested that 'this country runs on grandparents. The whole thing would be impossible without them'; 71% of young Israeli mothers receive regular help from grandparents, rising to 82% of those who are native-born.⁴⁴

Some grandparents are reluctant to prioritize helping with the grandchildren and there is not much that government or law can do about this. But social norms which emphasize fertility and give status to the role of active grandparenting would change this.

Helping grown children become homeowners

In the United States and many other countries, the lack of affordable housing is a big barrier to fertility. In fact, if you look at housing affordability and fertility rate in the United States, the two maps look nearly identical.



One antidote to costly housing? If parents can help their grown children to get a house sooner, they are likely to be rewarded with grandchildren!

9. Elective C-Sections are hurting fertility and should be minimized

One of the most important and under-discussed causes of falling fertility is that too many C-sections are being performed.

According to the World Health Organization, "As countries increase their caesarean section rates up to 10%, maternal and neonatal mortality decrease. However, caesarean section rates higher than 10% are not associated with reductions in maternal and newborn mortality rates."⁴⁵

In line with this, WHO recommends that countries not exceed 10 to 15 percent (10 to 15 C-section deliveries per 100 live births) for optimal maternal and neonatal outcomes. But most countries have C-section rates far above this, and it is hurting fertility.

C-sections are associated with lower fertility for multiple reasons

There are several reasons that C-sections hurt fertility.

First, studies find the ability to conceive is reduced after a C-section, likely because of scar tissue in the uterus.⁴⁶

Second, C-sections significantly increase the time that women must wait between pregnancies, and larger spacings are associated with lower fertility. Women are advised to wait 18-24 months after a C-section before trying to conceive again.⁴⁷

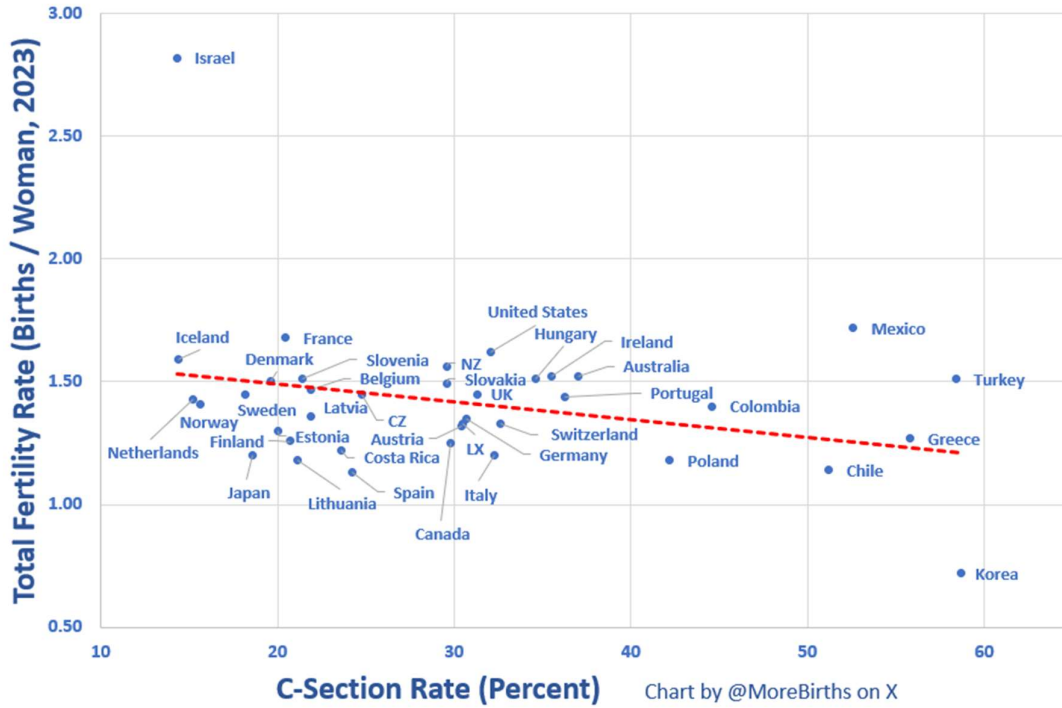
Finally, doctors advise women to avoid becoming pregnant again after 2-3 C-sections. According to Hector Chapa M.D., director for obstetrics and gynecology at the Texas A&M College of Medicine, "most medical authorities do state that if multiple C-sections are planned, the expert recommendation is to adhere to the maximum number of three."⁴⁸

A major study found that "there is no remarkable difference in serious morbidity associated with multiple repeat cesarean sections," which implies that doctors are being overcautious with advice around C-sections. Nevertheless, that is the advice they are giving.⁴⁹

Excessive C-sections are hurting fertility in OECD countries

Given WHO recommendations, the rate of C-sections in most OECD countries is far in excess of what it should be. And the relationship between C-sections and fertility is exactly what you would expect. The more C-sections a country performs, the lower its fertility, and excess C-sections may be costing countries 0.3 births per woman, which is huge effect.

A High Rate of C-Sections is Associated with Significantly Lower Fertility in OECD countries



For US states, the variation is much less, but still the cost of excess C-sections can be seen.

Higher Rates of C-Sections are Associated with Lower Fertility

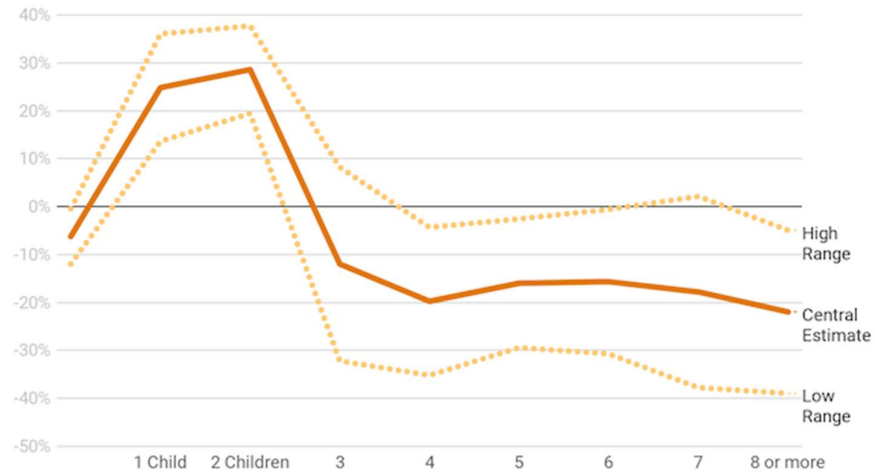


Parity Shows that C-sections are Causing Lower Fertility

The Institute for Families was able to demonstrate that C-sections are not just associated with lower fertility, they are causing it.

Higher C-Section Rates Change What Birth Parity Women Reach

Percent Change in Share of Women Who Stop at a Given Birth Parity Associated with 1 SD Change in C-Section Prevalence



Demographic and Health Surveys, complete dataset. Panel regressions conducted individually for each parity. High/Low range reflect 95% confidence interval.

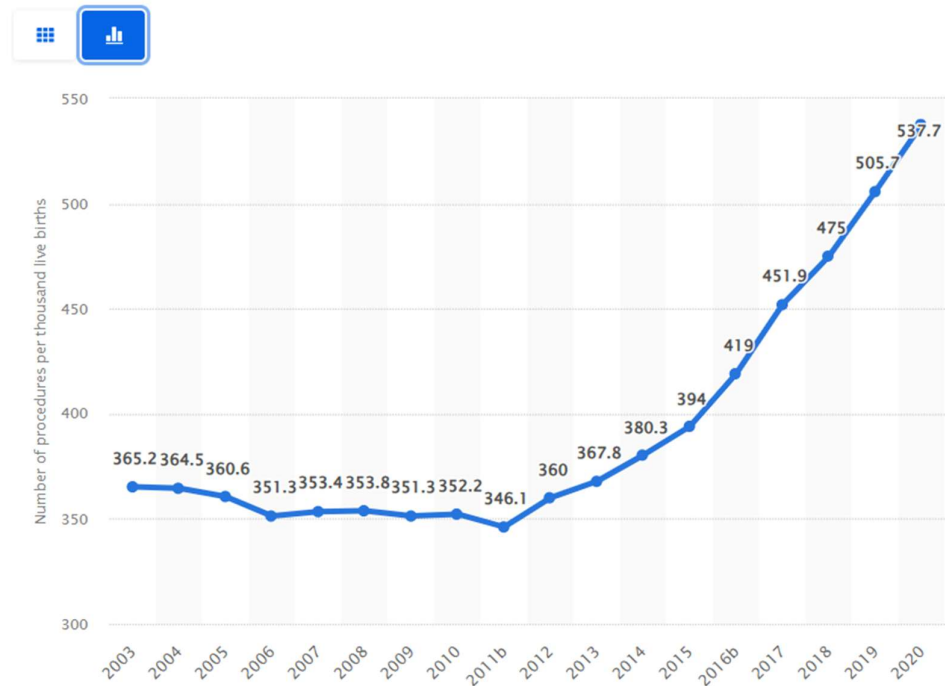
Lyman Stone writes, “Higher rates of C-sections are associated with more women stopping at just 1 or 2 children, and fewer women having 3 or more births. This is, precisely in line with what we would expect if in fact C-sections cause women to avoid higher-parity births.”⁵⁰

South Korea, the extreme case

Perhaps it should not surprise us that South Korea, the country with the world's lowest fertility, also has the highest C-section rate in the world.

Amount of caesarean sections performed in South Korea from 2003 to 2020

(per 1,000 live births)



© Statista 2024

Since 2020, the rate of C-sections in Korea has continued to soar. In the first half of 2024 alone, there were 37,960 natural births compared to 77,102 C-sections, meaning the C-section rate was some 67%.⁵¹

Fix Incentives to Reduce Excessive C-sections

A study of excessive C-sections in Korea found a range of causes, from the desire give one's child an auspicious birthday to scheduling convenience of doctors. But two factors stand out above the others:

- Lower compensation for vaginal deliveries as compared to C-sections
- Higher risk of lawsuits⁵²

The financial incentives of doctors to perform C-sections, combined with the desire to avoid lawsuits is likely driving up C-section rates all over the world. "Doctors have pushed C-sections onto mothers because it rakes in more revenue and requires less care on the part of the physician," says Dr. Park Jae-young, author of "Incomplete Miracle: light and shadow of the Korean healthcare system".⁵³

Prices of Childbirth Across Countries in 2010

Country	Vaginal birth	Cesarean section
United States	\$4,551	\$7,449
Australia	\$2,984	\$7,092
France	\$2,894	\$5,820
Canada	\$2,800	\$4,820
Sweden	\$2,591	\$6,375
Israel	\$1,856	\$2,002
Germany	\$1,789	\$3,732
Finland	\$1,521	\$4,808
Slovenia	\$1,482	\$3,113
Portugal	\$1,266	\$1,998
South Korea	\$1,056	\$1,957

Source: Koechlin etc., "Competing Price Levels of Hospital Services Across Countries." OECD Health Working Papers No. 53, 2010

When the incentive structure is fixed, and when doctors and patients are informed of the fertility risks of excess C-sections, the rate of C-sections can decline and fertility rates can rise. It should be emphasized that excessive C-sections are also bad medicine. C-section rates above the recommended level increase the risk of death for mothers, due to risk of infection and complications from anesthesia.⁵⁴

On the Role of Midwives

Relatedly, midwives have an important role to play in reducing unnecessary C-sections. Midwives can provide the attention and patience a long labor requires, while doctors are liable to choose the faster and more profitable option, which is usually surgery. A study found "Midwifery-led care is recognized as the best choice of maternity care for low-risk women." We note that midwife-assisted births can still occur in a hospital setting where a C-section is available should complications arise.⁵⁵

Male desires driving C-sections?

But there is another factor behind C-sections that isn't often discussed. Not infrequently, men want their wives or girlfriends to get C-sections so that the vagina stays narrow. Women in Brazil, Cambodia and Thailand requested C-sections because they said it would preserve their sexual value for their partners.⁵⁶

We don't want to moralize but we find this abhorrent and feel men should value their partners more for motherhood than for sex. In a truly pronatal culture, we hope such attitudes will disappear.

Israel for the win, again

One nation has a lower rate of C-section than any other in the OECD and that nation is Israel. Is it any wonder? You will notice that Israel is the one country that brought the compensation for vaginal births and C-sections into alignment. That is surely intentional.

A pro-natal culture has many manifestations, and avoiding unnecessary and fertility-reducing C-sections is clearly one of them!

10. Education: The right messages and raising fertility awareness

We regard education and especially education of young people, as the lowest hanging fruit for raising fertility. There are two important parts to this. The first part is stopping anti-natal propaganda that is rife in schools, under the guise of environmentalism. (This isn't hyperbole: An organization founded by Paul Ehrlich has been focused on training school teachers to deliver population control messages for many years.) Instead, children should know the current reality that birthrates are too low and that society collectively needs people to have more children. The second part is educating young people about the limits of their fertility, especially as it relates to age. These days, it is far more likely that someone in an advanced country will experience unplanned childlessness than unwanted pregnancy, yet Sex Ed in high school is focused entirely on the former problem.

Getting Anti-natal Propaganda Out of Schools

At a time when the fertility rate in the United States is far below replacement at roughly 1.6 births per woman, parents would be shocked to learn that an extreme organization dedicated to limiting human population is active in schools throughout the US and Canada. They would be outraged if they know their children are getting lessons seemingly designed to prod them to have fewer children, by a group founded by a vocal advocate of China's one-child policy and India's forced sterilizations.

As unlikely as it may seem, population extremist Paul R. Ehrlich continues to influence the education of millions of American children through the organization *he founded*, and that organization continues to spread the same debunked anti-natal ideas that made Ehrlich famous.

Population Connection was founded in 1968 by Ehrlich as *Zero Population Growth*. The images and material shown below are published on their websites.



ZPG gave itself a more neutral sounding name in 2002, and is now dedicated to educating American and Canadian children based on its radical ideology, without the permission or knowledge of most parents. *Population Connection* bills itself as the number one population education organization in America through its arm *Population Education*, a description that is almost certainly accurate. Their educational goals are achieved through an enormous network of teachers they have trained over decades.

In the *Birthgap – Inverted World* documentary we hear current *Population Connection* president John Seager tell demographer and filmmaker Stephen J Shaw, "Our materials are

integrated into the classroom. We have about 50,000 teachers who reach about 3 million students every year.”

But *Population Connection* is not simply in the business of educating about population. True to its founding, it is against population growth, and children presented with its anti-natalist materials are likely to want to have fewer children of their own. The following comes from its own mission statement:

“Overpopulation threatens the quality of life for people everywhere. Population Connection is the national grassroots population organization that educates young people and advocates progressive action to stabilize world population at a level that can be sustained by Earth’s resources.”

Paul Ehrlich is known as the author of *The Population Bomb*, a panic-inducing (and wrong in every prediction) bestseller that set off a wave of human rights violations around the world, from China’s brutal one-child policy to India’s forced sterilizations. Ehrlich was an outspoken advocate of both. When China finally scrapped its policy after 35 tragic years in 2015, Ehrlich took to then-Twitter with an outraged rant. He was perhaps the only person in the world to mourn the demise of China’s One Child Policy.

Although the group rebranded, its identity never changed. The teaching material this organization produces for kids includes the same extreme fearmongering about overpopulation that made Ehrlich famous.

“World Population” is a six-minute video and may be *Population Connection’s* most popular item of its hundreds of educational materials. It has millions of views on each of several video platforms (and each view may represent a showing to a whole classroom).



To show “overpopulation” in a way designed to shock the viewer, the video starts with an ancient “baseline” population of 170 million people in the year 1 CE, which is eighteen centuries before modern civilization arose.



From the ancient level of 170 million people, the video shows the world of today seemingly on fire with little exploding population bombs going off all over the planet. Meanwhile, the background sound is a heartbeat, beating slowly in ancient times and thumping to a frantic crescendo of about 200 beats per minute in the present. Paul Ehrlich's message of sheer population panic comes through loud and clear. Many of the millions of children who have watched this video surely now believe that they should have fewer children, if any at all.

In one lesson plan for elementary schoolers, participants take on the role of animals in a habitat, trying to survive on limited resources. If there are too many participants, the resources will run out (and death would ensue if this exercise were real).

Grades K-2, 3-5

Habitat Scramble

Habitat Scramble
Population Education

SUBJECTS: Language Arts, Math, Science, Social Studies

TOPICS: Biodiversity/Habitat, Carrying Capacity, Interdependence in Nature

RESOURCE OVERVIEW

In a role-playing simulation, students act as species in a habitat trying to survive by collecting cards that represent all of the essential habitat services – water, soil, shelter, space, air, and food.

This is the same bad analogy that Ehrlich used in *The Population Bomb*. Ehrlich’s book begins, “The battle to feed all of humanity is over. Hundreds of millions of people are going to starve to death.”

But that is just not how things work for humans. We aren’t hunter-gatherers, we grow our food. University of Maryland Economics Professor Julian Simon thoroughly debunked Ehrlich’s ideas in his 1978 book *The Ultimate Resource* (spoiler, the ultimate resource is many innovative people, working together). Ehrlich famously lost their bet. Resources became more abundant and cheaper as population grew.

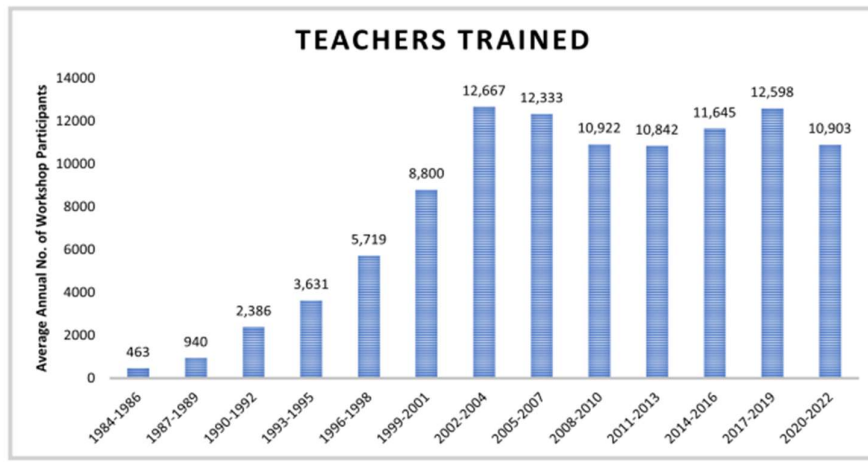
Another bad lesson entitled “Carrying Capacity” teaches that if population were much lower, we would all be better off. But that gets history backward. When Earth had far fewer people, most people were worse off, with hunger and poverty being common. Contra the Ehrlich-style narrative, when population grew and people could innovate together and realize economies of scale, an age of abundance ensued. Hundreds of lessons like this all have the goal of persuading youngsters to have fewer children in the future, under the guise of environmentalism.

Population Connection also errs in focusing on total population when fertility tells the true story of what is happening today. Fertility rates have fallen far below replacement in virtually every developed country, but total populations in some countries are still growing due to rising numbers of the elderly, a phenomenon called population momentum.

There are a few countries, desperately poor and lacking in education or modern birth control, that still fit the story that Population Connection tells, of population growing rapidly.

Yet Population Connection provides these education programs not in those countries but in the United States and Canada, which already have fertility rates way below replacement.

The huge reach of *Population Connection* is presented proudly on its website. It boasts that it has trained some 100,000 educators over the past ten years. Even more educators have been trained over the past 30 years, with an average of more than 10,000 teachers per year trained in their material.



The influence of this radically anti-natal organization even extends into AP classes! From *Population Connection’s* own website, we find this statement of accomplishment:

- Collaborated with AP College Board Consultants to provide resources for AP Institute trainings in five different courses: AP Environmental Science (APES), AP Human Geography (APHG), AP World History (APWH), AP US History (APUSH), and AP US Government and Politics (AP USGP). In 2021, we worked with 42 different consultants to share resources at 136 workshops, reaching 2,018 AP teachers. In 2022, we worked with 36 consultants to reach 1,687 AP teachers through 114 AP Institute workshops.

It is of course outrageous that the man whose radical anti-population philosophy led to some of the worst human rights violations in modern history founded an organization that now educates millions of their children every year.

But the ultimate scandal is that Millennials and Generation Z, many educated by Paul Ehrlich’s own population fearmongering group under the guise of environmentalism, now have a birthrate that is lower than any generation in American history, partly due to the impact of such education.

Getting this and similar anti-natal education out of schools is surely be the first step to raising fertility. As mentioned earlier, overpopulation fearmongering has historically been fantastically effective at lowering birthrates, whether it is true or not.

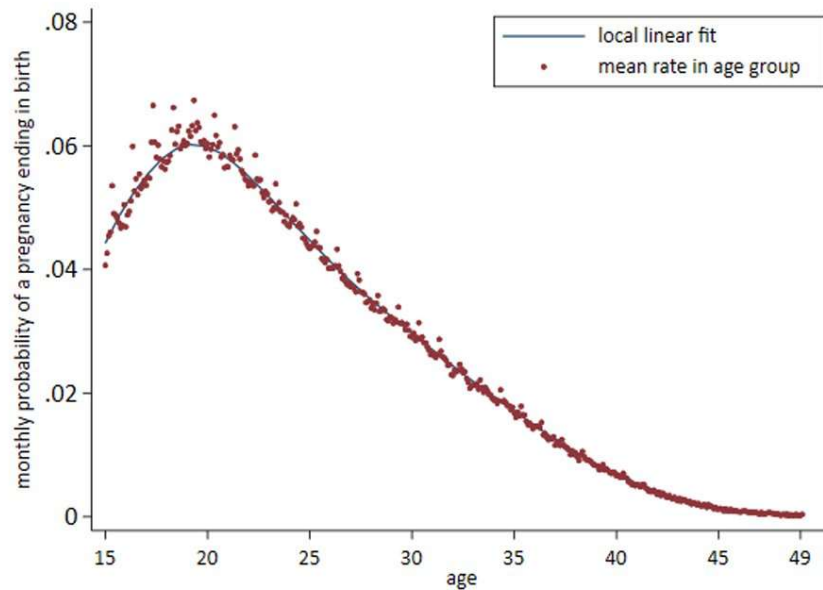
The right education, in the face of demographic collapse

Overpopulation fearmongering was probably never appropriate in schools. But it is completely senseless and counterproductive with today’s problem is the literal opposite, too few births.

To resolve the world’s fertility crisis, the very opposite approach needs to be taken in our education systems, not one of indoctrination but explanation of the dangers that population collapse poses and, at a more personal level, the kind of timing required to ensure that young men and women have the number of children they want. Charts like the one below by demographer Anna Rotkirch should be available to young people in high school, in a world where perhaps 30% or more will fail to have the children they hoped to have.



Another curve, crucially important to teach young people in a world where many will be left unintentionally childless, is the one below. The 2023 paper (“Age and Infertility Revisited” by Geruso, LoPalo and Spears) used a dataset of 2.8 million women, sampled across 62 countries, to discover what the age-related fertility really looks like. The curve shows how easy it is for a woman to get pregnant at different ages.



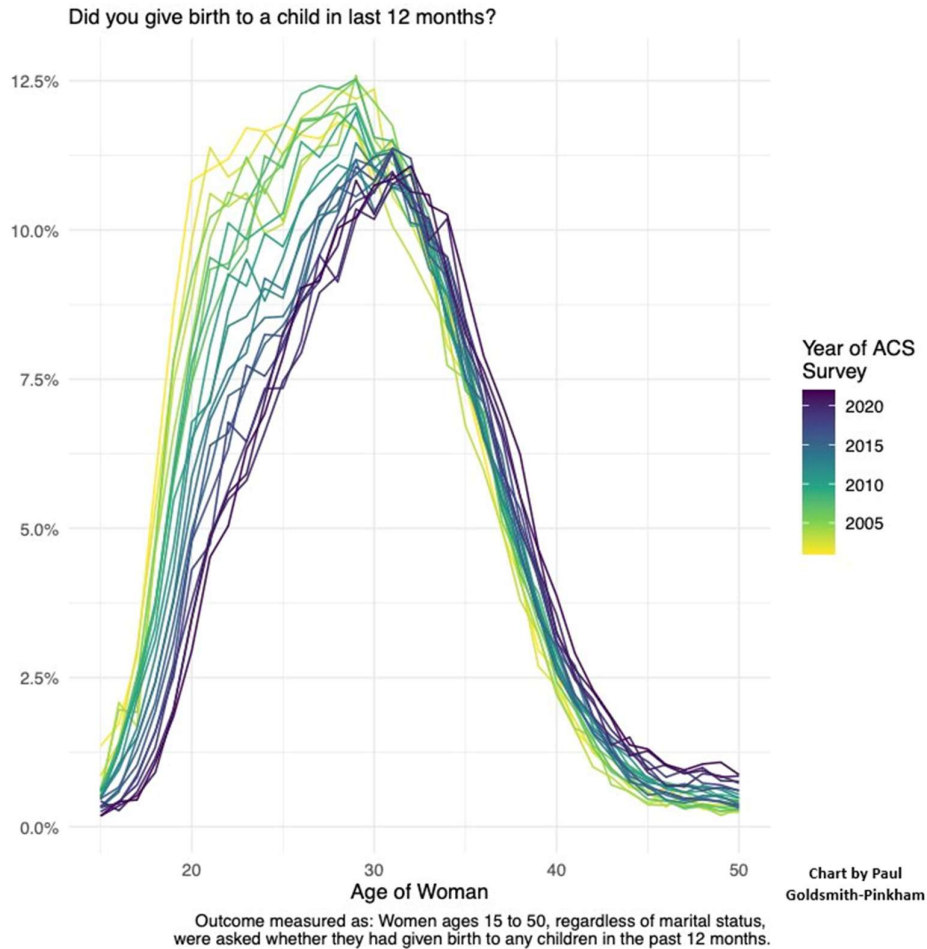
Note: This figure presents estimates of fecundability from DHS data for ages 15-49. Means for each age-in-month group (e.g., 33 years and 2 months old) are plotted as dots, according to Equation 6. Local polynomials (bandwidth 15, order 1) estimated according to Equation 7 are overlaid. fecundability is measured as the monthly probability of beginning a pregnancy that ultimately ends in live birth, among women who are married, noncontracepting, not pregnant, non-postpartum, and non-post-termination.

This curve is far different than any of us knew – most of us have had the vague notion that the ability to get pregnant falls after 35. In fact, fecundability (the ability to get pregnant) has already declined by 2/3 at age 32. Most women will still be able to get pregnant, but a growing share of couples will find themselves infertile as the age of childbearing is pushed ever further back.

How Fertility is Limited by Age, Visualized

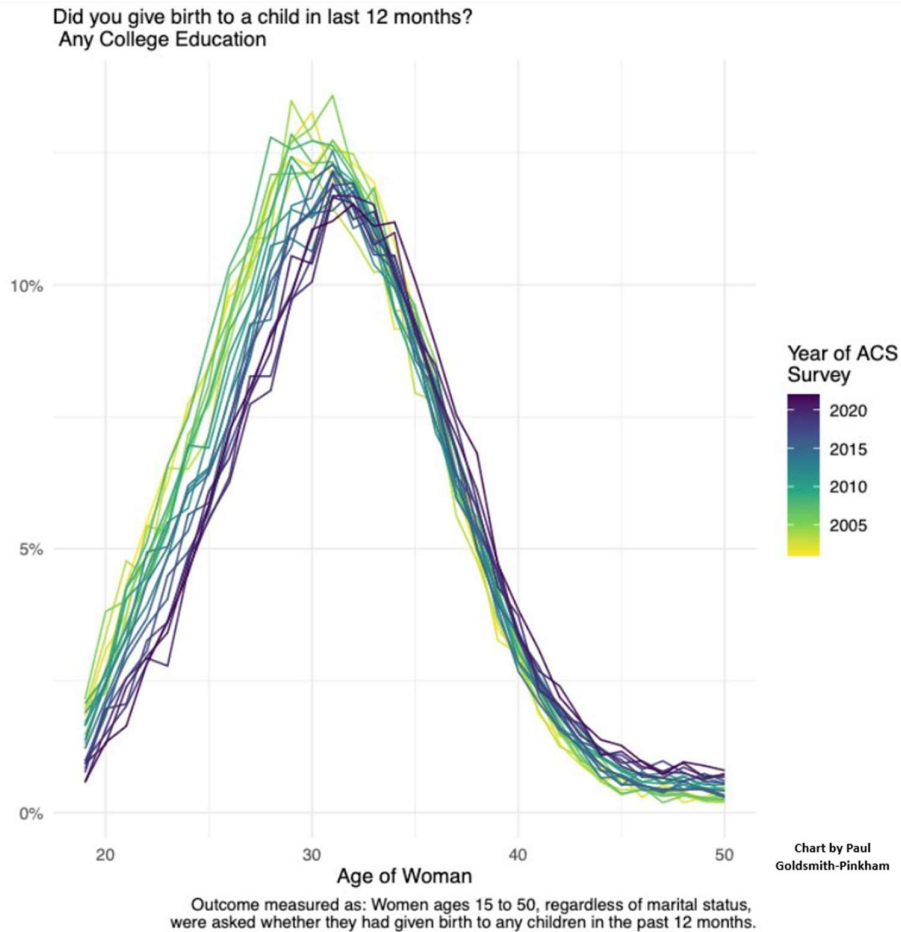
Why it is so crucial to educate young people about the narrow fertility window of youth? Fertility plunged in the United States from about 2.05 births per woman in 2000 to just 1.6 births per woman in 2020, well below replacement amid a global crisis of low birthrates. But fertility desires did not change much at all during that time. Ideal fertility according to surveys has stayed around 2.5 births per woman since 1970, and perhaps has even increased a bit in recent years.

So why did births fall so much when fertility desires stayed about the same? Yale professor Paul Goldsmith-Pinkham created great visuals that plot fertility across different ages over time. They offer a big clue about why women are not having all the children that they want to have.



In this chart, the most yellow line is birth odds by age in 2000. The most violet line is births odds by age in 2020. The area under the curve is proportional to the total fertility rate in that year. What has happened? The left part of the fertility curve has shifted more and more to the right as women avoided teen pregnancy, postponed family, and had children later than before. Meanwhile, the right part of the curve changed very little because women aren't actually able to increase fertility that much in their 30s and beyond. As a result, later childbearing does not on average make up for children not born to women in their 20s.

What if we look only at women who went to college? College-educated women avoided teen pregnancy even back in 2000 and are more conscientious about education and planning for family. These women started families around three years later in 2020 than in 2000, as the left part of the curves show. But again, the right part of the curve was still almost the same in 2020 as in 2000. Instead of shifting neatly to the right, the curve just got narrower, and the total fertility rate (represented by the area under the curve) kept going down.



In other words, delayed fertility could not be made up. Even though women's plans have greatly changed, physical fertility limits have hardly changed at all. (American women in 2020 had an ideal fertility that was almost a whole child more than actual fertility, 2.5 vs. 1.6).

Think about what this means! Birthrates, now much too low, would likely be quite a lot higher if women just started a bit earlier.

Technology has not been able to extend a woman's reproductive window that much

As the next chart shows, IVF success rates have improved quite a lot for women in their 30s. Meanwhile, women over age 42 continue to have a low success rate from IVF. When older women do get pregnant using IVF, it is often with a donor egg. As much as we want to believe that technology overcomes age-related fertility decline, that hasn't happened very much yet.

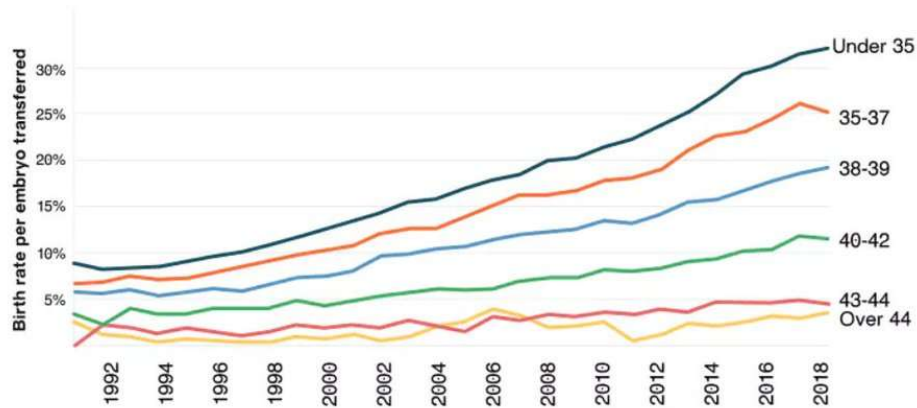
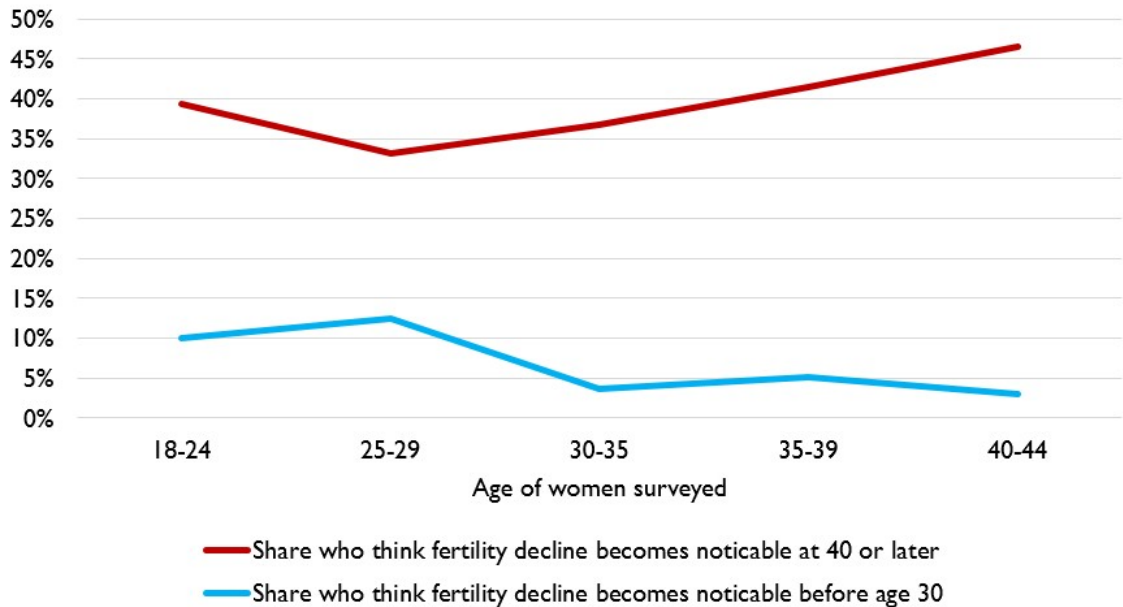


Figure 1. IVF success rates per embryo transferred for patients up to 43 years old since 1991

Knowledge of fertility is incredibly poor

Remember that fertility curve from earlier, that shows that fecundability peaks at 20 and is 2/3 lower by 32? Demographer Lyman Stone plotted results of a survey on fertility knowledge based on polling data, and he found that fertility knowledge is awful.

Frequency of Large Errors in Estimating Fertility Decline

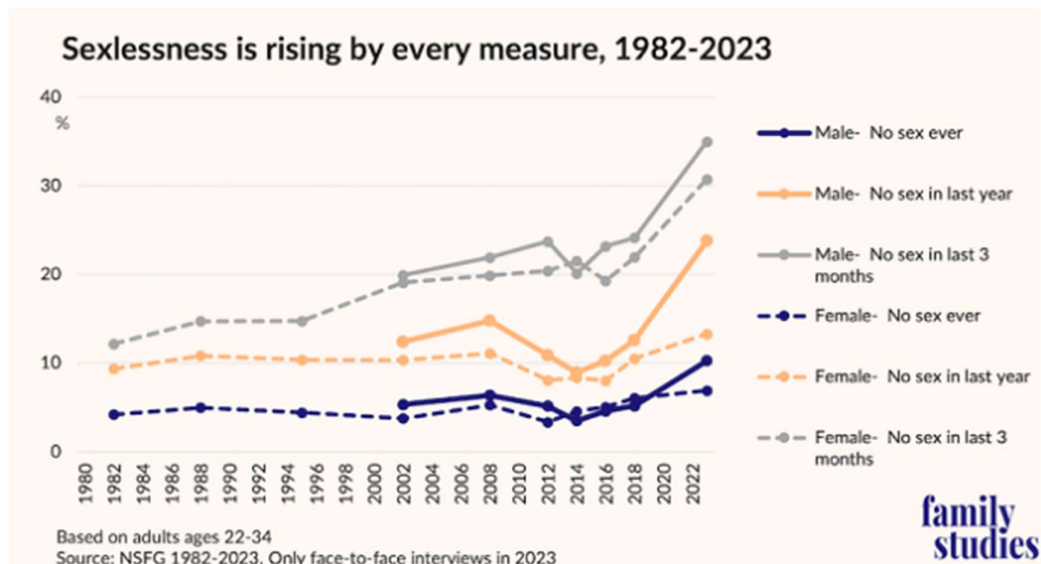


Only 10% of women are aware that fertility decline is noticeable before age 30, while almost half of women think fertility decline becomes noticeable at 40 or later. But by then, the fertility window is almost closed for most women. These facts are sad and promising at the same time. Sad because almost all of us are close to people who wanted to have children but started too late, if that isn't your own story. Promising because things could be better for future generations who will be able to plan around peak fertility, if they can receive proper education on the fertility window while still young.

11. Go Big or Go Home: Larger Family Norms to Reach Replacement

There is a mathematical reality that we must come to terms with to solve the low birthrate crisis. A two-child norm will not do. If you believe like we do there is no going back to the world of the 1950s when almost all women had children, and if you project, like we do, that current education and relationship trends mean childlessness will go a lot higher from here, then big families are the only way to return to high birthrates.

The Institute for Family Studies produced this chart just a few weeks ago:



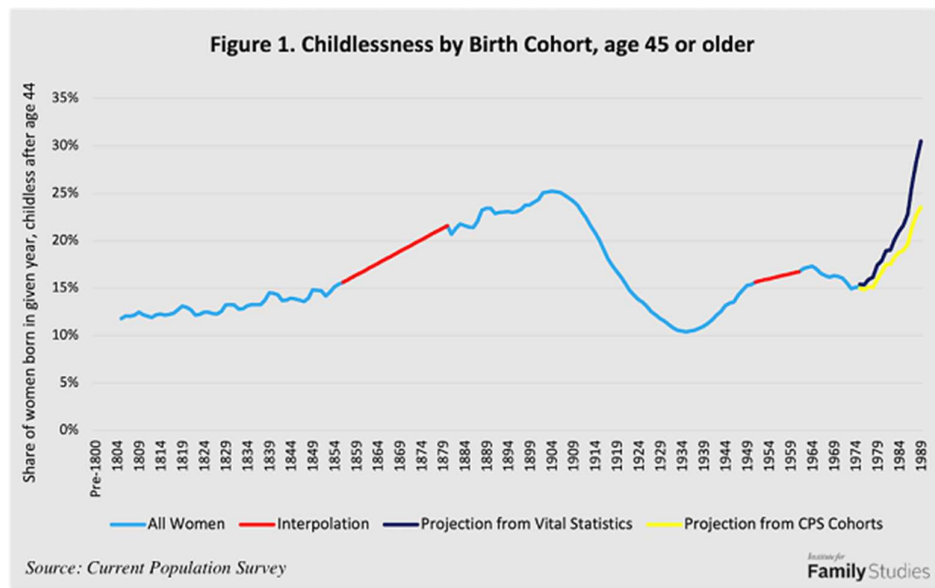
Rates of sexlessness are soaring among those in their peak childbearing years, and charts like this could be made for every developed country. Young adults haven't only cast aside tradition, religion and marriage. They remain with their parents in huge numbers, are living their lives online and not hitting the milestones of life. Hikikomori, the strange Japanese phenomenon of young adults cocooning and isolating from the world seems to have gone global.

How is someone supposed to go from that to parenthood?

The basic arithmetic of childlessness

Barring a miracle, it is clear to us that a much higher percentage of young people will be childless than in the recent past, due to the decline in partnering and long delays in hitting milestones.

The Institute for Family Studies, produced this chart for the US:



(Source: <https://ifstudies.org/blog/1-in-4-projecting-childlessness-among-todays-young-women>)

For younger millennials, childlessness rates could be above 30% and for Gen Z, childlessness rates may be higher still. In Europe and East Asia, rates of childless are often higher than in the US. Already childless rates across parts of East Asia were above 30% even before the rise of the Internet, smartphones, social media and the chaos of dating apps.

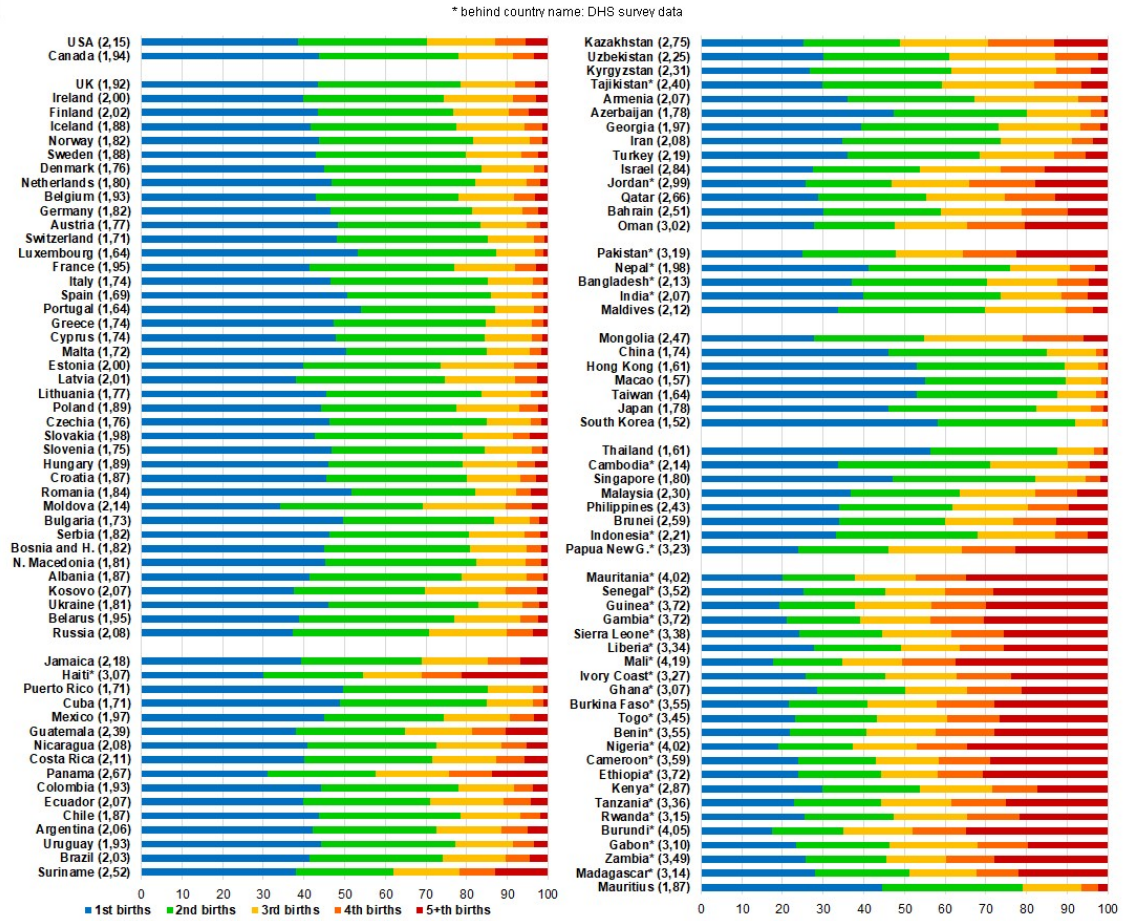
Meanwhile, there is a strong two child norm across the developed world. The chart below, by the account @BirthGauge on X, illustrates that two-child norm pervades the developed world.

He explains how to interpret the chart below:

“Looking at the birth order shows how family sizes vary across countries and uncovers some surprises. In most developed countries, there are almost as many second births as there are first births, but much fewer third births than second births, which indicates a strong two-child norm.

However if the number of first, second and third births is roughly the same and there are fewer fourth births (like in Mongolia for example), this indicates a three-child-norm. Thus by comparing the size of the bars, one can get a rough indicator of family norms.”

Distribution of Births by Birth Order and Average Birth Order (in Brackets) 2017-2022



Clearly a two-child-norm pervades most countries.

But what happens when you combine a two-child-norm with 1/3 being childless? A fertility rate of perhaps 1.5 or less is the result.

Numerous commenters on fertility have noticed this.

VB Knives 
@Empty_America

...

Yes. The 2 child ideal results in TFR of about 1.5 for pretty obvious reasons.

To reach 2.1, you actually need a "norm" of 3 children.

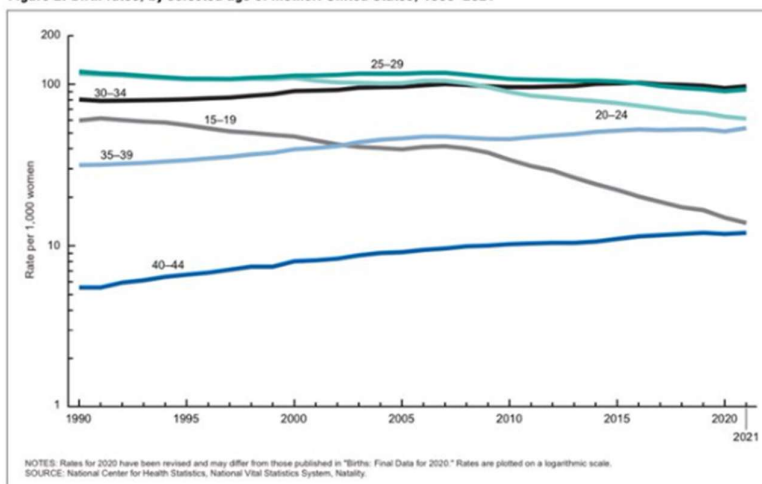
 **Autistic Luddite**  @ludditeautist · Dec 31, 2023

Replying to @Empty_America

The US birth rate decline is 100% due to fewer births among mothers 15-24, and specifically teens. Other age groups actually went up. The 2 child ideal + not everyone actually having kids + few unintended pregnancies = tfr of 1.5

cdc.gov/nchs/data/nvsr...

Figure 2. Birth rates, by selected age of mother: United States, 1990-2021

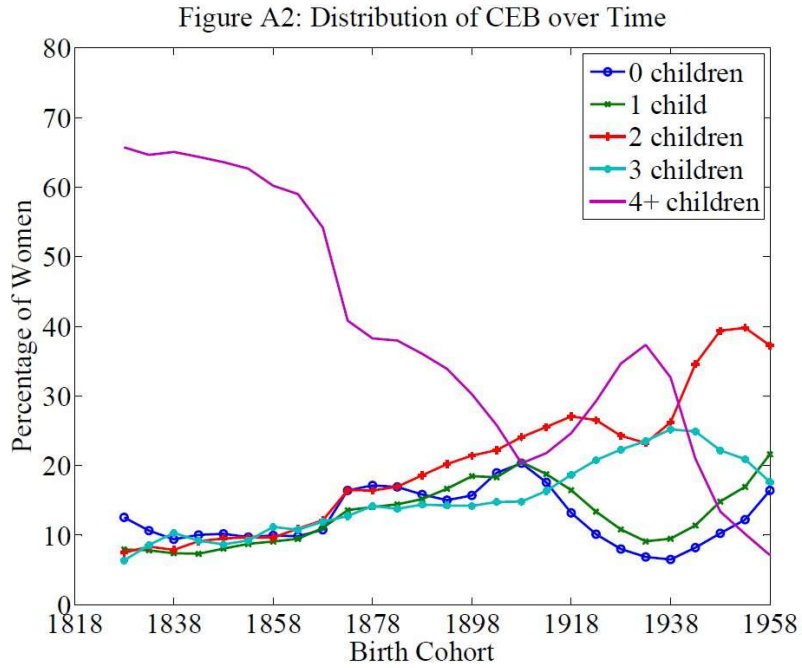


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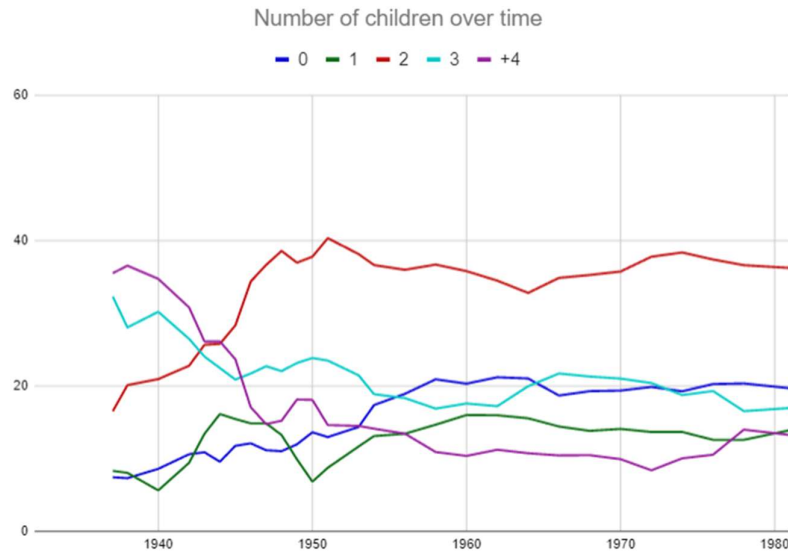
In our world today, a two-child-norm will not get you anywhere close to replacement. You need larger families, to make up for everyone who isn't getting to family at all for a hundred different reasons. They may be ideologically opposed to kids, may be infertile, may only socialize online, may have little income, may live with their parents, may be unable to find a partner, may not be heterosexual, may be consumed with work, may have substance problems, or many of the above. Good luck getting people to change all that! In our view, a far more plausible path to replacement is if those with children average one more.

Large families were the norm until recently

For most of American history until the 20th century four or more children was the norm for greater than 60% of the population while only around 10% stopped at 2. A similar pattern existed around the world.



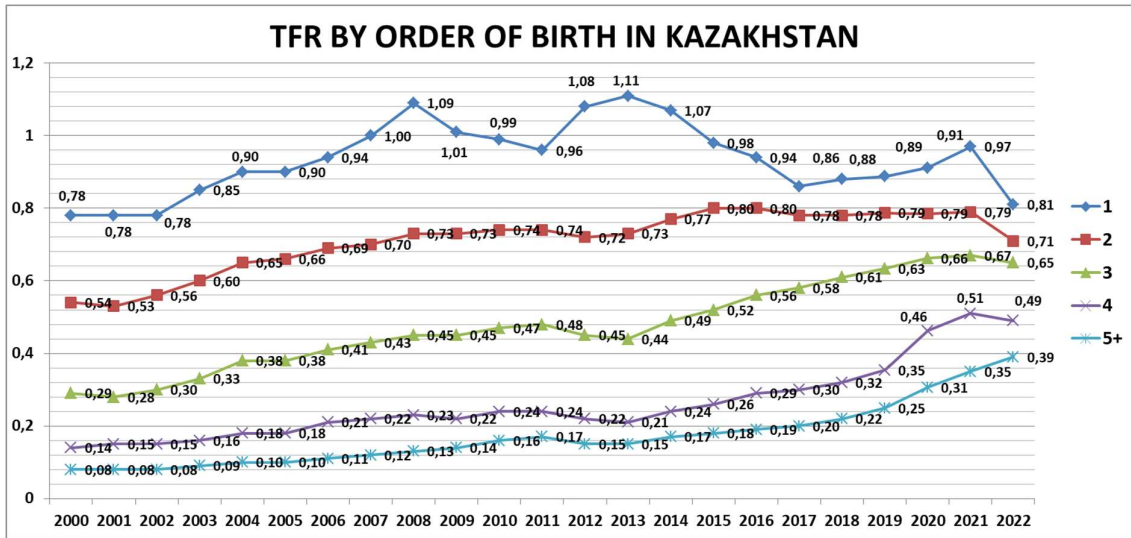
Source: Larry E. Jones & Michele Tertilt, 2006. "An Economic History of Fertility in the U.S.: 1826-1960," NBER Working Papers 12796, National Bureau of Economic Research, Inc.



This chart continues where the last one left off. Starting with the cohort born in the 1950s, two kids became the strong norm. But that was culture. There is no reason why we have to stop at two (except if you live in a small apartment, of course).

Larger families are the easiest way to get a recovery

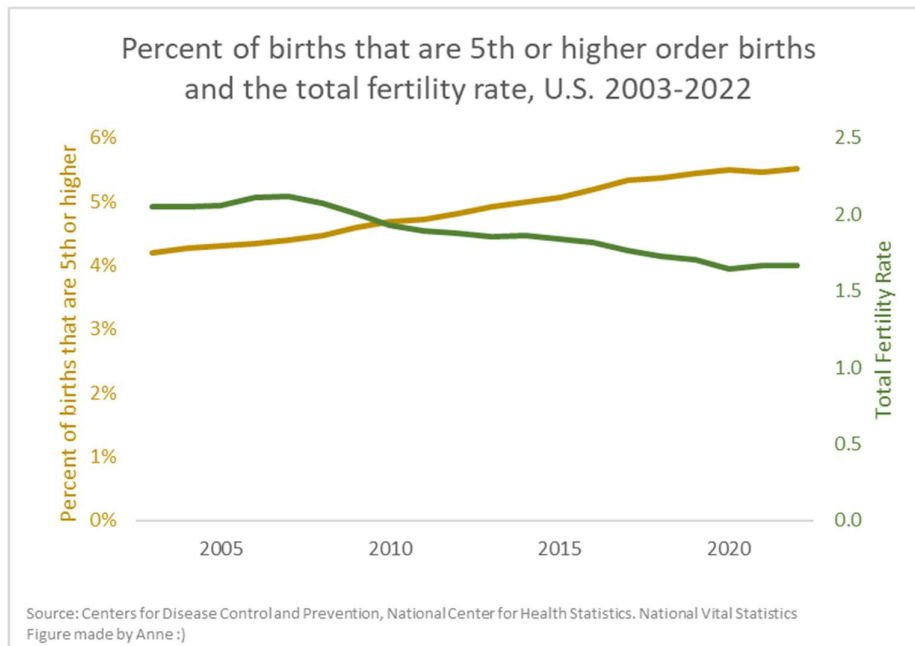
One the few examples of a country that went from below replacement fertility to above is Kazakhstan, which we looked at earlier.



What is amazing is that Kazakhstan’s fertility rose from 1.80 in 2000 to nearly 3 today, entirely because of families choosing to become larger.

Pronatal culture? It’s happening!

Something interesting is showing up the US fertility data. Demographer Anne Morse posted this chart on X:



While the fertility rate in the US has continued to decline, the share of births that are 5th order or higher has risen sharply, albeit from a very low level.

Catherine Pakaluk knows

A word should be said about Catherine Pakaluk and her extraordinary book 'Hannah's Children.' Pakaluk undertook in-depth interviews with college-educated mothers of five or more children. Her interviewees acknowledged the costs of having a large family and one spoke of being 'constantly frazzled.' As highly-educated women, many had to put aside their career and other aspirations. But many of these women had religious beliefs and a strong sense of pro-natal mission. They had husbands who were committed to the cause as well, and tended to have solid incomes.

And in terms of the self-actualization foregone or not, as one mother-of-seven (Oxford educated and religious) told one of the authors of this document: 'Bringing seven children into the world and sending them off rounded, mature and responsible people is the most creative and fulfilling thing you can do.'⁵⁷

I (Daniel) am proud to say I wrote the very first review of Hannah's Children, several weeks before it was released. The title my review was, "Are these the ones who will save us?" I do believe that mothers who embrace bigger families as a mission will be a big part of our salvation as a society.

12. Policy Matters: The example of France

If you know anything about European demography, you know that France has had much better fertility than the rest of Europe, and that this fertility gap between France and its neighbors has persisted for many decades.

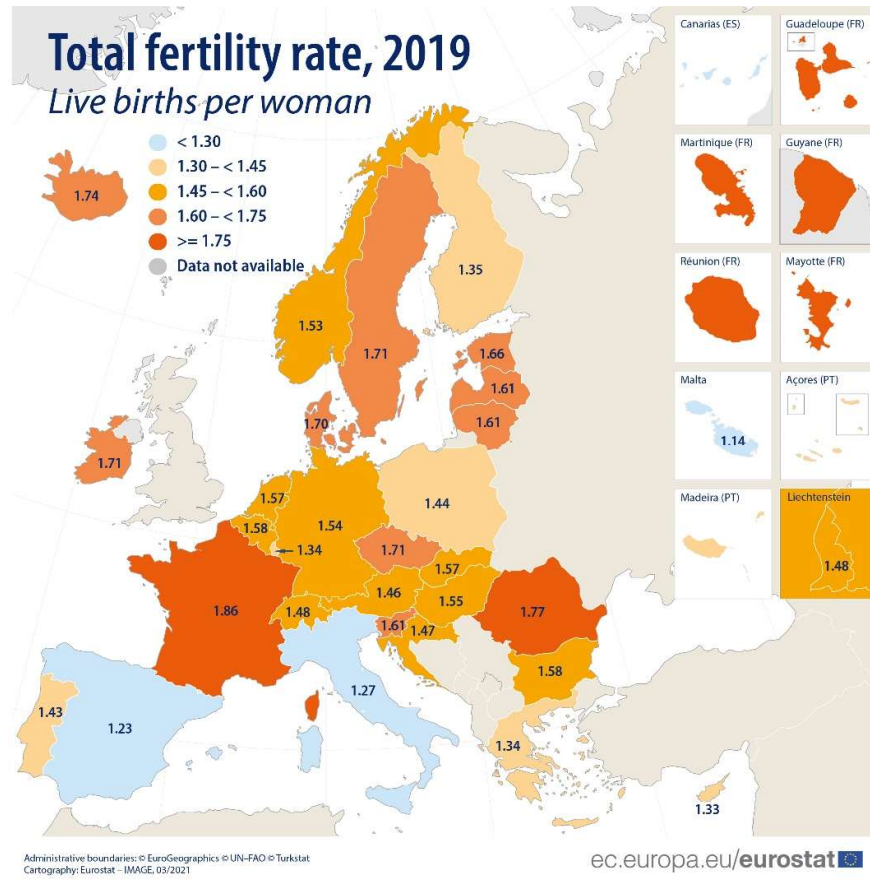
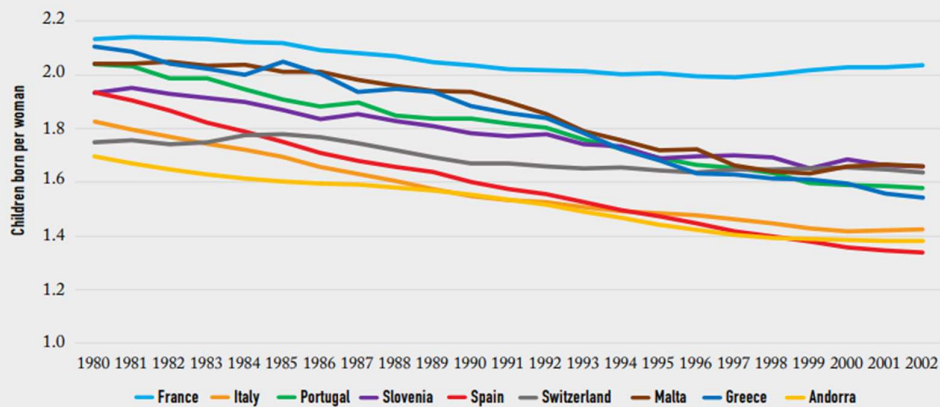


Figure 5. Cohort Completed Fertility by Country



Source: Human Fertility Database

A new report by the Institute for Family Studies, *Is There Hope for Low Fertility? 'Demographic Rearmament' in Southern Europe* by Lyman Stone and Erin Wingerter finds that the relatively pro-natal policies in France resulted in higher fertility by 0.1 to 0.3 births per woman. Given that fertility is about half a child more per woman in France than in Spain and Italy, the authors are clearly choosing to err on the conservative side.

Evidence that higher French fertility really is due to policy

In arriving at the conclusion that French pro-natal policy is producing higher fertility, the authors dispense with two counter-proposals, the first that the difference is due to some ethnic or cultural factors peculiar to the French people and the second that the higher French fertility is due to immigration.

Regarding the question of peculiar French differences, the authors look at the border regions with France and Italy. There is ethnic and cultural similarity on both sides of the borders with France and Italy, and yet there is a sharp fertility divide in both instances.

Regarding the question of immigration, the authors find that completed fertility is relatively flat by amount of French ancestry, and that immigrant numbers cannot account for significantly higher French fertility. Notably the French share of immigrants is lower than some of its neighbors. Thus, higher native French birth rates are the root cause of higher French fertility.

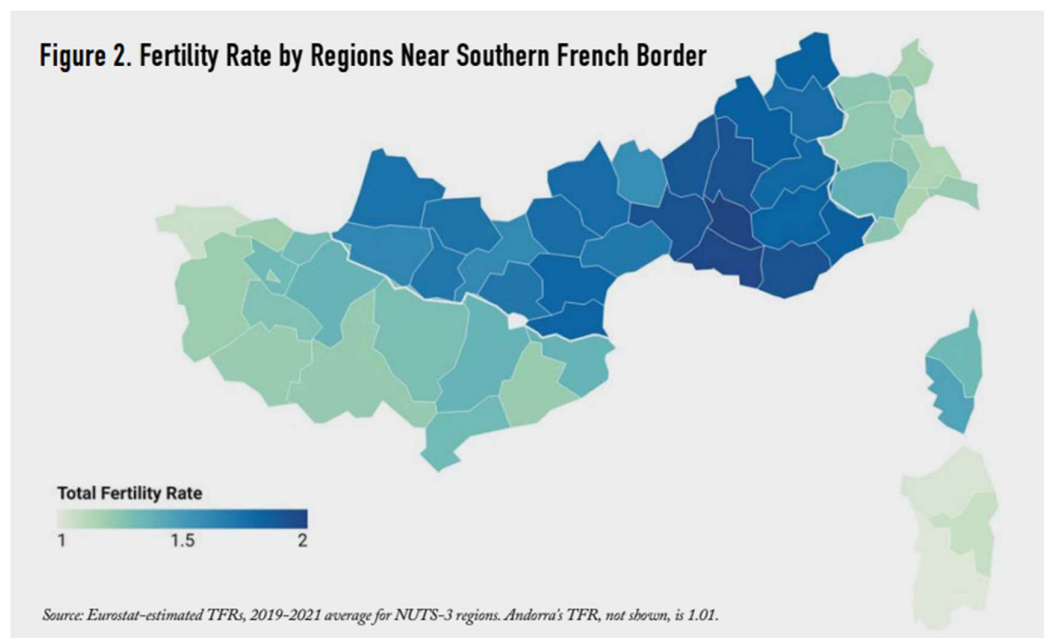
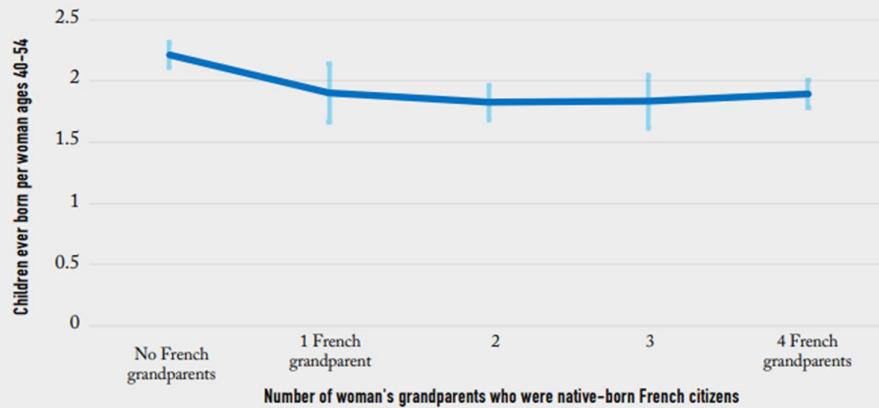


Figure S3.2. Completed Fertility Rates for French Residents by Ancestry



Source: Trajectories and Origins Survey, 2019–20. Children ever born to 5,196 women ages 40–54, i.e. women born 1965–1980. Their grandparents would have been born in 1890–1940.

What are French pro-natal policies and why are they effective

France has had a variety of pro-natal policies ranging from family leave to cash benefits for children and more. But the coolest and most unique aspect of the French system is the 'quotient system' of taxation. Price Waterhouse Coopers describes it like this: *"Under income-splitting rules, total taxable income is divided by the number of shares awarded to the taxpayer: one share for a single person, two shares for a married taxpayer without children, half a share for each of the first two dependent children, and one full share for the third and each subsequent child."*⁵⁸

A good way of thinking about this for Americans is like how a married couple with X income is in a much lower tax bracket than a single person with X income. Their combined income has much higher thresholds for each tax bracket than a single person would have. (That American tax policy is itself somewhat pro-natal, by encouraging marriage for many.) Now imagine that math for children as well. In France, each additional child has a similar effect as a spouse for tax purposes, of moving the total family income into lower tax brackets.

There are some reasons why French pro-natal policy may be particularly effective at boosting fertility rates compared to its neighbors. First, it is specifically encouraging of larger families. In France the benefits for a third or fourth child are more than for a first child, helping to encourage larger family norm (which is really helpful for sustaining higher birthrates).

Second, France's support of families has been consistent over many years. France has had some variation of pro-natal policy for more than 100 years, which has helped to build a pro-natal culture. It is often said that culture matters more than policy for birthrates. Yet long-running pro-natal policies themselves help produce pro-natal culture.

Contrast this with East Asian countries like China and Korea where for much of living - memory, there were population control messages and penalties for having too many children. Recent pro-natal policies in East Asia are contradictory and would have to be consistent for a very long time to overcome the negative effects of those earlier measures.

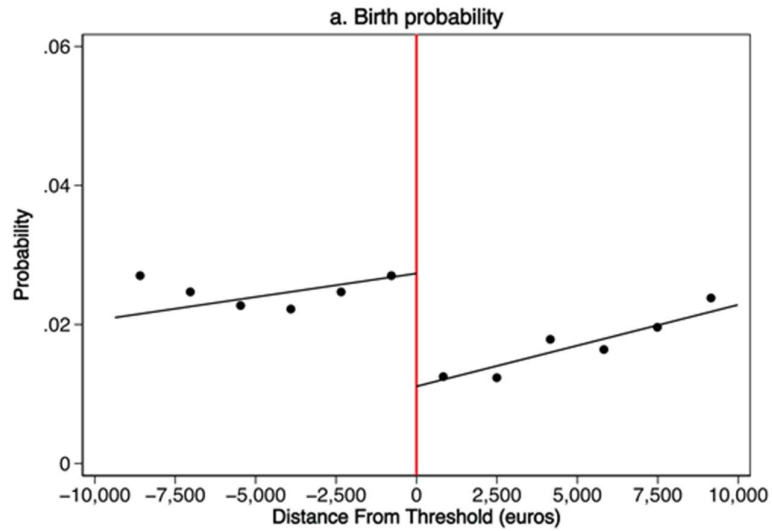
Benefits should be based on having children, not treated as welfare

One of the key aspects of the historical French system is that child benefits went to everyone, regardless of income. That is an important cornerstone of policy, because a truly pro-natal policy is one that encourages children for the positive value of children for society, rather than

as a welfare program for the poor. Also, it has important implications for whether children are viewed as high-status.

Unfortunately, it seems France has been moving away from that in recent years. Income caps were applied to family benefits and the result was a huge drop-off in fertility, which was sharpest at the cutoff. (Source Lyman Stone, post on X)

Fig. 2



Policymakers elsewhere should take heed. Pronatal benefits and income redistribution are two very different things, and the later diminishes and erodes support for the former.

SOURCE BIBLIOGRAPHY

Advanced Reproductive Medicine: <https://infertilitydocs.com/>

American Community Survey: <https://www.census.gov/programs-surveys/acs>

Australian Bureau of Statistics: <https://www.abs.gov.au/>

Bavel, Jan Van, 'Subreplacement Fertility in the West Before the Baby Boom: Past and Current Perspectives' (Population Studies, 64 (1), 2010)

Bavel, Jan Van and Reher, David S., 'The Baby Boom and Its Causes: What We Know and What We Need to Know' (Population and Development Review, 39 (20), 2013)

Baylor Religion Center: <https://baylorreligionsurvey.research.baylor.edu/>

BBC News

Biler A, Ekin A, Ozcan A, Inan AH, Vural T, Toz E. 'Is it Safe to have Multiple Repeat Cesarean Sections? A High-Volume Tertiary Care Center Experience', Pak J Med Sci. 2017 Sep-Oct;33(5)

BirthGauge: <https://x.com/BirthGauge>

Blanc, Guillaume, 'The Cultural Origins of the Demographic Transition in France', (School of Social Sciences, University of Manchester, 2023)

Boom Campaign: <https://www.boomcampaign.org.uk/>

Business Insider: <https://www.businessinsider.com/>

Caldwell, John C., 'Towards a Restatement of Demographic Transition Theory' (Political and Development Review, 2 (3/4), 1976)

Caplan, Bryan, 'Selfish Reasons to Have More Kids: Why Being a Great Parent is Less Work and More Fun Than You Think' (New York, Basic Books, 2012)

Cardus: <https://www.cardus.ca/>

Carney, Timothy P., 'Family Unfriendly: How our Culture Made Raising Kids Much Harder than it Needs to Be' (New York, Harper, 2024)

CEIC Data: <https://www.ceicdata.com/en>

Central Bureau of Statistics, Israel:
https://www.gov.il/en/departments/central_bureau_of_statistics/govil-landing-page

Chua, Amy, 'The Battle Hymn of the Tiger Mother' (London, Bloomsbury, 2012)

Coale, Ansley Johnson and Watkins, Susan Cotts, 'The Decline of Fertility in Europe', (Princeton, Office of Population Research, 1986)

Current Population Survey: <https://www.census.gov/program-surveys/cps.html>

Daily Telegraph: <https://www.telegraph.co.uk/>

Demographic Intelligence

Doepke, Mathias et al, 'The Economics of Fertility: A New Era' (National Bureau of Economic Research, 2022)

Demographic Intelligence Family Survey: <https://www.demographicintel.com/family-survey/>

Economist: <https://www.economist.com/>

ECPR Science Blog ('The Loop'): <https://theloop.ecpr.eu/>

Eurostat: <https://ec.europa.eu/eurostat>

Ehrlich, Paul, 'The Population Bomb' (New York, Sierra Club, 1972)

Financial Times: <https://www.ft.com/>

Fruehwirth, Jan Cooley, Iyer, Sriya and Zhang, Anwen, 'Religion and Depression in Adolescence' (Journal of Political Economy, 127 (3) 2019)

Gallup: <https://www.gallup.com/home.aspx>

General Social Survey: <https://gss.norc.org/>

Genesis, The Bible

Geruso, Michael, LoPalo, Melissa and Spears, Dean, 'Age and Fertility Revisited' https://conference.nber.org/conf_papers/f179203.pdf

Green, Richard K. and Wachter, Susan M., 'The American Mortgage in Historical Context' (Journal of Economic Perspectives, 19 (4), 2005)

Guardian: <https://www.theguardian.com/>

Guner, Nezih, Kulikova, Yuliya and Llull, Joan, 'Marriage and Health: Selection, Protection and Assortative Mating (European Economic Review, 104, 2018)

Hanahoe M. 'Midwifery-led care can lower caesarean section rates according to the Robson ten group classification system', Eur J Midwifery. 2020 Mar 31;4:7

Harvard Gazette: <https://news.harvard.edu/gazette/>

Human Fertility Database: <https://www.humanfertility.org/>

INED Trajectories and Origins Survey: <https://teo-english.site.ined.fr/>

Institute for Family Studies: <https://ifstudies.org/>

International Labour Organization: <https://www.ilo.org/>

IPUMS: <https://www.ipums.org/>

Islam – Question and Answer: <https://islamqa.info/en>

Kim, A.M., Park, J.H., Kang, S. *et al.* 'An ecological study of geographic variation and factors associated with cesarean section rates in South Korea', *BMC Pregnancy Childbirth*, 19, 162, 2019

Kolk, Martin, The relationship between life-course accumulated income and childbearing of Swedish men and women born 1940–70 (The Journal of Demography, 77 (2), 2022)

Korea Biomed: <https://www.koreabiomed.com>

Marginal Revolution: <https://marginalrevolution.com/>

More Births: <https://x.com/MoreBirths>

Morland, Paul, 'No One Left: Why the World Needs More Children (London, Forum, 2024)

National Longitudinal Survey of Youth 1979 Cohort: <https://www.nlsinfo.org/content/cohorts/nlsy79>

National Statistics Office of Georgia: <https://www.geostat.ge/en>

National Vital Statistics Forum (United States): <https://www.cdc.gov/nchs/nvss/index.htm>

Nippon.com: <https://www.nippon.com/en/>

OECD: <https://www.oecd.org/en.html>

Pakaluk, Catherine, 'Hannah's Children: The Women Quietly Defying the Birth Dearth' (South Bend, Gateway Editions, 2024)

Population Connection (FKA Zero Population Growth): <https://populationconnection.org/>

Population Education: <https://populationeducation.org/>

PWC Tax Summaries – France: <https://taxsummaries.pwc.com/france/individual/taxes-on-personal-income>

Our World in Data: <https://ourworldindata.org/>

Pew Research Center: <https://www.pewresearch.org/>

Rent Café: <https://www.rentcafe.com/>

Redfin: <https://www.redfin.com/>

Rubio, Gabriela, 'How Love Conquered Marriage: Theory and Evidence on Arranged Marriage (University of California, 2014)

Schantz C, Sim KL, Petit V, Rany H, Goyet S. 'Factors associated with caesarean sections in Phnom Penh, Cambodia.' *Reprod Health Matters*. 2016 Nov;24(48):111-121

Sakala C, Mayberry LJ, 'Vaginal or cesarean birth?: application of an advocacy organization-driven research translation model', *Nurs Res*. 2006;55:S68–74

Skirbekk, Vegard et. al., 'Is Buddhism the Low Fertility Religion of Asia?' (*Demographic Research*, 32 (1), 2015)

State of Our Unions National Marriage Project: <https://nationalmarriageproject.org/2022-state-our-unions>

StatisticUrban: <https://x.com/StatisticUrban>

Stone, Lyman: <https://x.com/lymanstoneky>

Statista: <https://www.statista.com/>

Statistics Finland: <https://stat.fi/en>

Statistics Korea: <https://kostat.go.kr/anse/>

Survey of Consumer Finances, Federal Reserve Board:
<https://www.federalreserve.gov/econres/scfindex.htm>

Swipestats: <https://www.swipestats.io/>

The Print: <https://theprint.in/>

Tweel, M.M., van den, Struijs S/ van der, Le Cessie S, Boers KE, 'The Impact of Caesarean Scar Niche on Fertility - a Systematic Review', *J Obstet Gynaecol*, 24 (1), 2024

United Nations World Population Policies: <https://www.un.org/development/desa/pd/data/world-population-policies>

United Nations World Population Prospects: <https://population.un.org/wpp/>

US Decennial Census: <https://www.census.gov/programs-surveys/decennial-census.html>

Vital Records: <https://vitalrecord.tamu.edu/>

Washington Post: <https://www.washingtonpost.com/>

Weinreb, Alex, Chernikovsky, Dov and Brill, Avril, *Israel's Exceptional Fertility*, Jerusalem, Taub Center, 2018

Wilcox, Brad, 'Get Married: Why the Americans Must Defy the Elites, Forge Strong Families and Save Civilization' (Northampton Mass., Broadside Books, 2024)

World Bank Data: <https://data.worldbank.org/>

World Values Survey: <https://www.worldvaluessurvey.org/wvs.jsp>

YouGov: <https://today.yougov.com/>

ENDNOTES

-
- ¹ NVSS <https://www.cdc.gov/nchs/data/vsrr/vsrr035.pdf>; France 24 <https://www.france24.com/en/live-news/20240918-chile-birth-rate-plummets-as-women-say-no-to-motherhood>; (Impressions: 21st January 2025)
- ² World Bank <https://data.worldbank.org/indicator/SP.DYN.TFRT.IN> (impression: 21st January 2025)
- ³ DEStatis C(impression: 3rd February 2024)
- ⁴ ECPR <https://theloop.ecpr.eu/getting-paid-to-have-children-hungarys-carefare-regime/> (impression: 21st January 2025)
- ⁵ Daily Telegraph, 15th September 2024 <https://www.telegraph.co.uk/politics/2024/09/15/starmer-refusal-children-falling-birth-rate/> (impression: 21st January 2025)
- ⁶ United Nations World Population Policies 2021 https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/undesapd_2021_wpp-fertility_policies.pdf (impression: 21st January 2025)
- ⁷ See <https://x.com/MoreBirths>; Morland, Paul, *No One Left: Why The World Needs More Children*, Forum, London, 2024
- ⁸ Genesis 1:28 and 9:1
- ⁹ Genesis 11:30, 30:1; Samuel 1
- ¹⁰ Islam Question and Answer <https://islamqa.info/en/answers/161204/what-are-the-virtues-of-pregnancy-in-islam> (impression: 2nd February 2025)
- ¹¹ Gallup <https://news.gallup.com/poll/511238/americans-preference-larger-families-highest-1971.aspx> (impression: 6th March 2025)
- ¹² Morland, Paul, *No One Left: Why the World Needs More Children*, London, Forum, 2024, p. 61
- ¹³ The Guardian, 22nd March 2028 <https://www.theguardian.com/cities/2018/mar/22/collapse-civilisation-near-certain-decades-population-bomb-paul-ehrlich> (impression: 4th February 2025)
- ¹⁴ OECD <https://www.oecd.org/en/data/indicators/population-with-tertiary-education.html> (impression: 9th February 2025)
- ¹⁵ World Bank <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD> (impression: 9th February 2025)
- ¹⁶ World Bank https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?most_recent_value_desc=true (impression: 9th February 2025)
- ¹⁷ Pew Research Center, 12th May 2015 <https://www.pewresearch.org/religion/2015/05/12/chapter-3-demographic-profiles-of-religious-groups/> (impression: 9th February 2025)
- ¹⁸ <https://www.csmonitor.com/World/Middle-East/2018/12/14/Israel-booms-with-babies-as-developed-world-s-birth-rates-plummet.-Here-s-why>
- ¹⁹ <https://nationalpost.com/opinion/danielle-kubes-the-truth-behind-israels-curiously-high-fertility-rate>
- ²⁰ <https://www.thepublicdiscourse.com/2024/09/95824/>
- ²¹ <https://ifstudies.org/blog/in-georgia-a-religiously-inspired-baby-boom>
- ²² World Bank https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?most_recent_value_desc=false (impression: 9th February 2025)
- ²³ World Bank https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?name_desc=false (impression: 9th February 2025)
- ²⁴ Kazakhstan birth parity chart by Nurzhau Kalizhanov, research fellow at the Institute of State History in Astana, Kazakhstan
- ²⁵ *How Love Conquered Marriage: Theory and Evidence on the Disappearance of Arranged Marriages*, Gabriela Rubio, 2014.
- ²⁶ <https://x.com/MoreBirths/status/1787136084654104773>
- ²⁷ <https://worksinprogress.co/issue/frances-baby-bust/>
- ²⁸ Fruehwirth, Iyer and Zhang (2019)
- ²⁹ Skirbekk 2015
- ³⁰ BBC, 6th November 2015 <https://www.bbc.co.uk/news/world-africa-34732609> (impression: 6th February 2025)
- ³¹ The Print, 28th October 2021 <https://theprint.in/health/what-explains-kolkatas-falling-fertility-rate-aspiration-financial-strain-contraceptive-coverage/757667/> (impression: 6th February 2025)
- ³² <https://x.com/lymanstoneky/status/1894211462085689483> (impression: 13th March 2025)
- ³³ Marginal Revolution: <https://marginalrevolution.com/marginalrevolution/2024/06/more-on-the-danish-mortgage-system.html>; Business Insider <https://www.businessinsider.com/denmark-mortgage-rates-lock-in-effect-home-buying-selling-easier-2024-5> (impressions: 13th March 2025)

-
- ³⁴ Business Insider, *ibid.*
- ³⁵ “The relationship between life-course accumulated income and childbearing of Swedish men and women born 1940–70”, Kolk, 2022
- ³⁶ <https://x.com/lymanstoneky/status/1849528519937884275>
- ³⁷ <https://medium.com/@lymanstone/fertility-and-income-some-notes-581e1a6db3c7>
- ³⁸ The Harvard Gazette <https://news.harvard.edu/gazette/story/2025/01/need-to-boost-population-encourage-dads-to-step-up-at-home/> (Impression: 13th March 2025)
- ³⁹ Caldwell, John C, ‘Towards a Restatement of Demographic Transition Theory’, *Political and Development Review*, 2 (3/4), 1976, pp.3221-66
- ⁴⁰ Grinde B, Tambs K. Effect of household size on mental problems in children: results from the Norwegian Mother and Child Cohort study. *BMC Psychol.* 2016 Jun 2;4(1):31.
- ⁴¹ <https://ifstudies.org/blog/more-crowding-fewer-babies-the-effects-of-housing-density-on-fertility>
- ⁴² <https://x.com/lymanstoneky/status/1787887561450418335>
- ⁴³ <https://x.com/lymanstoneky/status/1780325249449435151>
- ⁴⁴ Morland, Paul, 2024 op. cit., pp. 210,110
- ⁴⁵ World Health Organizations: <https://www.who.int/news-room/questions-and-answers/item/who-statement-on-caesarean-section-rates-frequently-asked-questions> (impression: 14th March 2025)
- ⁴⁶ Tweel, MM, van den, Struijs S/ van der, Le Cessie S, Boers KE, ‘The Impact of Caesarean Scar Niche on Fertility - a Systematic Review’, *J Obstet Gynaecol*, 24 (1), 2024; Science Daily <https://www.sciencedaily.com/releases/2023/12/231207161413.htm> (impression: 14th March 2025)
- ⁴⁷ Advanced Reproductive Medicine <https://infertilitydocs.com/pregnancy-after-a-c-section/> (impression n: 14th March 2025)
- ⁴⁸ Vital Records <https://vitalrecord.tamu.edu/asked-many-c-sections-can-woman/> (impression: 14th March 2025)
- ⁴⁹ Biler A, Ekin A, Ozcan A, Inan AH, Vural T, Toz E. ‘Is it Safe to have Multiple Repeat Cesarean Sections? A High-Volume Tertiary Care Center Experience’, *Pak J Med Sci.* 2017 Sep-Oct;33(5)
- ⁵⁰ IFS: <https://ifstudies.org/blog/are-elective-c-sections-artificially-reducing-birth-rates-around-the-world>
- ⁵¹ Korea Times https://www.koreatimes.co.kr/www/nation/2025/03/113_383585.html (impression: 14th March 2025)
- ⁵² Kim, A.M., Park, J.H., Kang, S. *et al.* ‘An ecological study of geographic variation and factors associated with cesarean section rates in South Korea’, *BMC Pregnancy Childbirth*, 19, 162, 2019
- ⁵³ Korea Biomed: <https://www.koreabiomed.com/news/articleView.html?idxno=857> (impression: 14th March 2025)
- ⁵⁴ Sakala C, Mayberry LJ, ‘Vaginal or cesarean birth?: application of an advocacy organization-driven research translation model’, *Nurs Res.* 2006;55:S68–74
- ⁵⁵ Hanahoe M. ‘Midwifery-led care can lower caesarean section rates according to the Robson ten group classification system’, *Eur J Midwifery.* 2020 Mar 31;4:7
- ⁵⁶ Schantz C, Sim KL, Petit V, Rany H, Goyet S. ‘Factors associated with caesarean sections in Phnom Penh, Cambodia.’ *Reprod Health Matters.* 2016 Nov;24(48):111-121
- ⁵⁷ Morland, Paul, *Tomorrow’s People: The Future of Humanity in Ten Numbers*, London, Picador, 2022 p. 99
- ⁵⁸ PwC <https://taxsummaries.pwc.com/france/individual/taxes-on-personal-income> (impression: 16th March 2025)