

A Primer on the Risks of a Hard Landing on Demographic Collapse

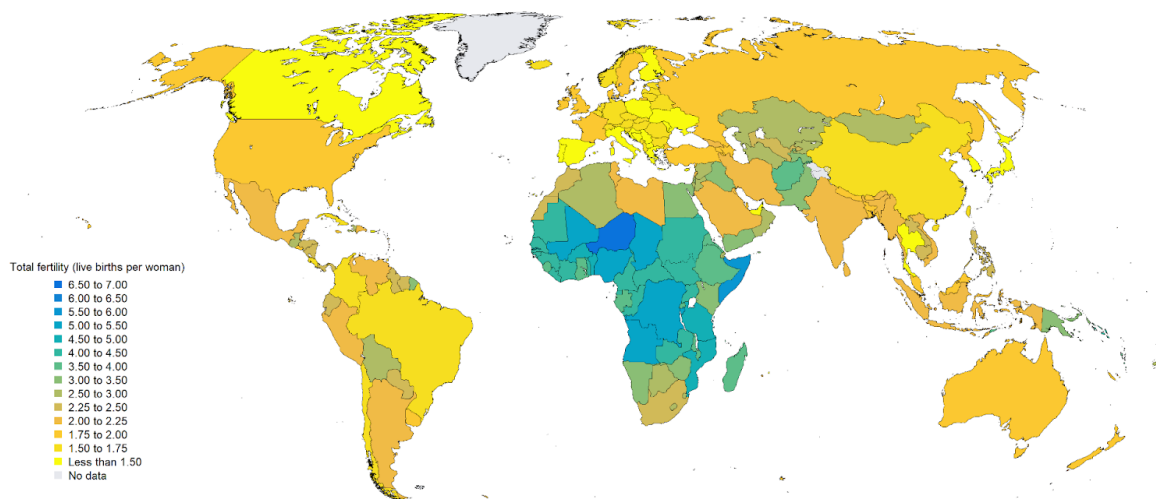
This deep dive explains how declining populations will cause the following problems despite immigration, automation, and life extension technology (which are addressed below):

- *The collapse of many cities (devolution into Detroit-like status)*
- *The decline of prosocial behavior (including gender equality, tolerance for diversity, climate activism, etc.)*
- *The potential collapse of financial markets (an end to expectations of continual average increase in value)*
- *A cultural mass extinction event with many cultures disappearing (e.g. Koreans, Japanese, Jains, Parsi, Emirates, Tanka, Macanese, Taiwanese, Italians, etc.)*

Birth rates are falling much faster than many dominant societal narratives imply. In 2019 the global fertility rate for [Latin America and the Caribbean](#) fell below replacement rate (2.1 babies per woman), [India](#) will achieve that status next year, and [China](#) is expected by some to be at half their current population within 45 years ([just this year their fertility rate fell more than 13%](#), with China now having a lower birth rate than during the great famine of the 1950s). Even [first generation immigrants to the US](#) are now below replacement rate.

Meanwhile, many countries, ethnicities, and cultures are more advanced on the collapse timeline. [115 countries have a birth rate below replacement rate, containing about half the world's population](#). South Korea [is predicted to hit a birth rate of 0.7](#) babies per woman within the next two years. A 0.7 birth rate means that, for every 100 Koreans there will be 4.3 great grand kids (35 kids, 12.25 grandkids)—and that's assuming birth rates don't continue to decline. People often contextualize population decline as a linear problem when it is an exponential problem.

Total fertility, 2020-2025 (medium-variant projection)



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Data source: United Nations, DESA, Population Division. *World Population Prospects 2019*. <http://population.un.org/wpp/>

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

The above map shows the current state of affairs. Orange countries are those already below, or almost below, replacement rate. Africa's extremely high birthrates conceal the fact that almost half the global population lives in countries below replacement rates. I was recently talking with a researcher in the space (Reuben Abraham) who told me that no one is updating their models (specifically the UN, but also organizations like climate change groups) and that things are much worse than most public data sources suggest (he also thinks the problem is totally unsolvable). This trend is so dominant in developed countries that even [Mormons may be about to drop below replacement rate—if they have not already](#).

Even strict religious fundamentalism does not protect against this decline. [“Between the 1980s and the 2010s Iranian women reduced the rate at which they had children from 6.5 to 2.5, faster than the pace of the one child policy in China”](#). In fact, since 2014 Iran has been doing everything it can think of to get its fertility rate back above replacement rate [to no avail](#). [\(Over all, Muslim majority countries are not as resistant to demographic collapse as some would have you believe, and will fall below replacement rate on average in only a decade \(in the 2030s\).\)](#)

Note: Many conflate concerns about demographic collapse with racism, which may cause the problem to be overlooked. Demographic collapse affects all racial/ethnic groups and [those in support of diversity](#) will have more motivation than most to approach the problem seriously. Keep in mind that fertility is [declining faster among Native American, Hispanic, and Black Americans than it is among white Americans](#). [In fact, the countries in the developed world most resistant to demographic collapse are the most diverse countries \(U.S.A., France, Israel, etc.\) while the countries with the lowest fertility rates are often ethno-states \(e.g. Korea\)](#). This is also not a case of immigrant fertility rates buoying these countries' average fertility as [caucasian populations in these countries also have a higher fertility rate than their neighbors](#).

So how bad are things in the US? From 2010 to 2020 US fertility rates declined by [15.9%](#) and ended the decade at [1.64](#). That means every 30 years (every generation) we should expect at 40.52% decline in fertility rate. So the expected FTR per generation is: Gen 1: 1.64, Gen 2: 0.66 Gen 3: 0.27, Gen 4: 0.11

That means for every 100 U.S. Citizens there will be:

- Grandkids: 27.39
- Great Grand Kids: 3.7

We have written this deep dive in a way that should make it easy to jump around using the links to the areas that are most interesting to you. For more information about the decline in fertility, read these:

- [Why is This Happening?](#): For a review of factors that cause fertility collapse.
- [Can Life Extension Fix This?](#): For a breakdown on the impact life extension may have on demographic collapse.

- [But Surely the Problem will Fix Itself: Behavioral Sinks](#): For an overview of the Rat Utopia experiments, what they accurately predicted already, and their potential applicability in predicting where things go from here. *(Added at reader request.)*
- [How AI May Offer a Deus Ex Machina](#): For an exploration of demographic collapse in the context of AI and AGI risk.
- [Does Addressing Economic Failures Solve Demographic Collapse?](#): For an overview of the limits of economic interventions.

Why Does This Matter?

1. The economic systems of virtually all developed countries are predicated on an assumption of constant growth, which means that an exponential decline in the working population combined with a continued linear increase in productivity per worker has a high probability of leading to system-level collapse. For information on the social and economic systems that are in danger, go to [Systems Collapse Risks](#) and [Detroit as a Model for Collapse](#).
2. If it turns out that the sociological profile that leads people to be amenable to prosocial and altruistic ideas dramatically lowers birth rates, that sociological profile will become uncommon in future human populations. If cosmopolitan society, as we understand, is a “sterilizing meme,” the future will not feature values we now see as germane to the human condition. For more information read: [The Collapse of Prosocial Value Systems](#).
3. We are on the verge of a “cultural mass extinction.” This will dramatically increase the homogeneity of our species and as such lower the prevalence of orthogonal perspectives that could generate solutions to social problems which are not apparent to surviving cultures. In addition, if current birth rates are indicative of future trends, increases in homogeneity will favor those cultures most currently actively hostile to prosocial ideals. We explore this below under: [Risk of Cultural Mass Extinction](#).
4. Violence against women and girls is likely to surge as birth rates continue to decline as the few cultures with high birthrates also feature very traditional views of gender roles. We briefly touch on this under: [Risk of Increased Domestic Violence](#).

Potential Solutions

Finally, this deep dive will explore a few potential solutions to the problem. Population and fertility collapse is a unique issue in that it is not a tragedy of the commons issue, which makes it highly tractable. We explore potential solutions in the [Solutions & Tractability](#) section.

Specifically, we analyze the potential of:

- [Government Intervention](#)
- [Fertility Treatment Research](#)
- [Artificial Womb Research and Development](#)

- [More Efficient Matchmaking](#)
- [Cultural Innovation](#)

Notes on Authors: This document was put together by [Pronatalist.org](#) and [CollinsInstitute.org](#) through the efforts of [Malcolm Collins](#), [Simone Collins](#), and hath (a student at the Collins Institute). You can reach us at @SimoneHCollins on Twitter or email us directly. For a much more detailed dive into this subject read the book [The Pragmatist's Guide to Crafting Religion](#).

The Fertility Decline

Why is This Happening?

Decreased Utility from Children

Historically, every additional child increased their family's wealth and quality of life—the child either represented a near-future source of income or set of hands on the farm. This began to change with the rise of large-scale wage labor in some parts of the world at the turn of the 1900s, but this change was still largely contained as said wage labor was only available to males.

When wage labor became widely available to both males and females around the 1970s—just as the birth control pill and more advanced forms of birth control became more widely adopted—birth rates began to plummet in developed countries (the role of female wage labor in this process is why birth rates have been more robust across countries and cultures featuring less egalitarian views toward gender). When every kid added to a family unit decreases the wealth and quality of life of said family unit, people begin to need exogenous motivators (like religion) to justify large families.

Optimization for Happiness & Memetic Shifts

Do kids really decrease happiness? While there is some nuance to this question, [many studies](#) suggest that having kids can at least temporarily lower factors like subjective well being and [marital satisfaction](#), [especially when parents lack ample childcare support](#) (though other studies suggest that [having kids brings more meaning to parents' lives](#) and that [parents—especially fathers—experience far more joy than misery from kids](#)). Even if having kids objectively does not lower happiness, merely the perception that becoming a parent—or having more than two kids—lowers quality of life will drive fewer people to reproduce above repopulation rate.

If a third of a group decides to have no kids and a third has two, then the final third has to have more than four kids to keep the population stable. While it could be argued that having one or two kids will improve quality of life of some individuals, it becomes difficult to justify each

additional kid beyond the second from a purely hedonic perspective. (*Pets have increasingly filled the role in many people's lives that children once held. (Added by reader.)*)

In addition to the above trends, most families have historically operated under “fitness-increasing memes,” which are memes that partially spread by increasing the birth rate of those who adopt them. Most fitness-increasing memes take the form of religions. These memes (typically religions) act as an exogenous motivator to increase birth rate, but are currently declining. We explore this phenomenon in greater depth in the section titled: [The Collapse of Prosocial Value Systems](#).

Dropping Fertility

Quickly falling fertility rates present an additional—yet little-understood—factor contributing to demographic collapse. This can be seen in a rapid decrease in both male testosterone and sperm production/motility. A study from [2007](#) showed testosterone decreasing by 22% when comparing 1985-1987 levels and a study from [2021](#) found a roughly 25% decrease between 1999 and 2016. In addition, [it has been found](#) that male fertility has generally decreased by about 10% over the past 16 years.

There is some debate about what is causing this, but environmental pollutants like [phthalates](#), [herbicides](#), [air pollution](#), [radiation from cellphones/laptops](#), [cadmium](#), and [general endocrine disrupters](#) are the most likely culprits ([for more, see the Wikipedia article on this trend](#)). Infertility is rising so quickly that rates of assisted reproductive technology are rising by [5% to 10% per year](#)! (Note: This problem is not unique [to the male side of the equation](#), just better studied there.)

Broken Relationship Markets

A final factor contributing to demographic collapse—of which we have not even begun to see an impact—involves broken partner-finding markets. This is a big focus of our books [The Pragmatist's Guide to Relationships](#) and [The Pragmatist's Guide to Sexuality](#), so we won't go too deep into the topic here, but the difficulty in the search for both sexual and romantic partners has increased dramatically since the popularity of the Tinder

Young men driving the decline in sex

Share of men and women between ages 18 and 30 reporting no sex in the past year



Source: General Social Survey

THE WASHINGTON POST
+ added Tinder date by @levelsio

model dating app took hold and this can be seen in things like [falling sex rates](#).

To put it succinctly, the swipe model of partner sorting forces all individuals participating in that market to compete along a single metric (attractiveness). People don't like to choose long-term partners who are below average, but historically people were able to compete along multiple metrics (attractiveness, position in local social hierarchy, intelligence, creativity, etc.) meaning that very few would be below average on all metrics and thus appealed to at least some pool of potential partners.

Moreover, the economic empowerment of women results in less of a perceived necessity for a sustained relationship, especially as women are increasingly earning more than men on average, and possess a greater proportion of higher education certificates. (Added by reader)

Side note: One of our test readers insisted we mention the book Real World Divorce by Alexa Dankowski, Suzanne Goode, Philip Greenspun, Chaconne Martin-Berkowicz, and Tina Tonnu (a very extensive resource on divorce made accessible to anyone online at [RealWorldDivorce.com](#)). The work highlights the severe disadvantages men face in family law (divorce, custody, etc.) in most Western countries.

While we agree male treatment in family law is unfair and worthy of serious reform, we doubt it plays a major role in declining birthrates. In the real world, divorce among those in post-Baby-Boom generations is incredibly rare (see The Pragmatist's Guide to Relationships for a discussion of the stats and how the myth of the 50% divorce rate was popularized). Anecdotally, while we know of many bad divorces from our parents' generation, we can't think of a single non-amicable divorce in our wider friend network.

Women, despite their unfair advantages in family law disputes, also get screwed in marriage (in that a woman with a kid or one who has been married for around ten years will really struggle to secure another high-quality partner). Everyone, man or woman, can be screwed by the person they marry. We can't think of a single period in human history when at least one gender wasn't rendered incredibly vulnerable by long-term relationships—and yet birth rates have only recently begun to plummet.

Marriage isn't dating; it's not about providing you with amusement, attractive arm candy, or even regular sex. Rather, marriage is a long-term strategic alliance. Don't marry someone if you think they are unstable or might stab you in the back.

The Capitalism Thesis for Birth Rate Decline

Wolf Tivy of *Palladium Magazine* posits that the free-market economy is structured in a manner that organically identifies and maximally utilizes talent to drive productivity—in the moment. This means the system differentially sorts for the most potentially productive among us, then offers

them just enough money and status to convince them to forgo activities that don't generate immediate value. Almost nothing draws a person away from immediate productivity more than child rearing. For this reason, the centers of productivity in a capitalist society will intrinsically be structured in a manner that is ill-suited for raising large families.

Can Life Extension Fix This?

Extended lifespans could potentially offset some of the threat of demographic collapse... if lifespans were actually increasing. In [the USA](#), lifespans have actually been contracting over the last half decade or so and before that they were only increasing linearly (here is [Europe](#) so you don't get your hopes up).

Even if life extension technology does begin to roll out, any model we can conjure for its use based on current economic systems will limit access to the top fraction of a percent of the population, socioeconomically speaking, and thus be irrelevant in combating the above trend.

Note from reader: This could be fixed by the aging cure being deployed by some form of virus making it potentially very cheap to produce. While plausible we wouldn't bet human civilization on the chance of this happening in the near future.

But Surely the Problem will Fix Itself: Behavioral Sinks

This section was added based on user comments. We find the Calhoun stuff a little pop-sci for our tastes but it is still compelling in context.

Your instinct when looking at the demographic collapse problem may be that it will eventually resolve itself. This is actually our view as well—once the sociological profiles associated with prosociality and openness to other cultures (which make people susceptible to sterilizing memes) have been bred out of the population, things will stabilize. However, there is evidence that even our view might be overly rosy.

In his famous “Rat Utopia” experiment, ethnologist John B. Calhoun gave a population of rats access to unlimited food and water (though limited space), removed all natural predators, and ensured perfect rat temperatures (68°F—20°C) to see what would happen after a few generations. While many still complain about world poverty, the objective truth is that functionally we live in a world today where a significant portion of humans experience something akin to these “Rat Utopias” in that food and water are not the limiting factors on reproduction in the way they used to be.¹

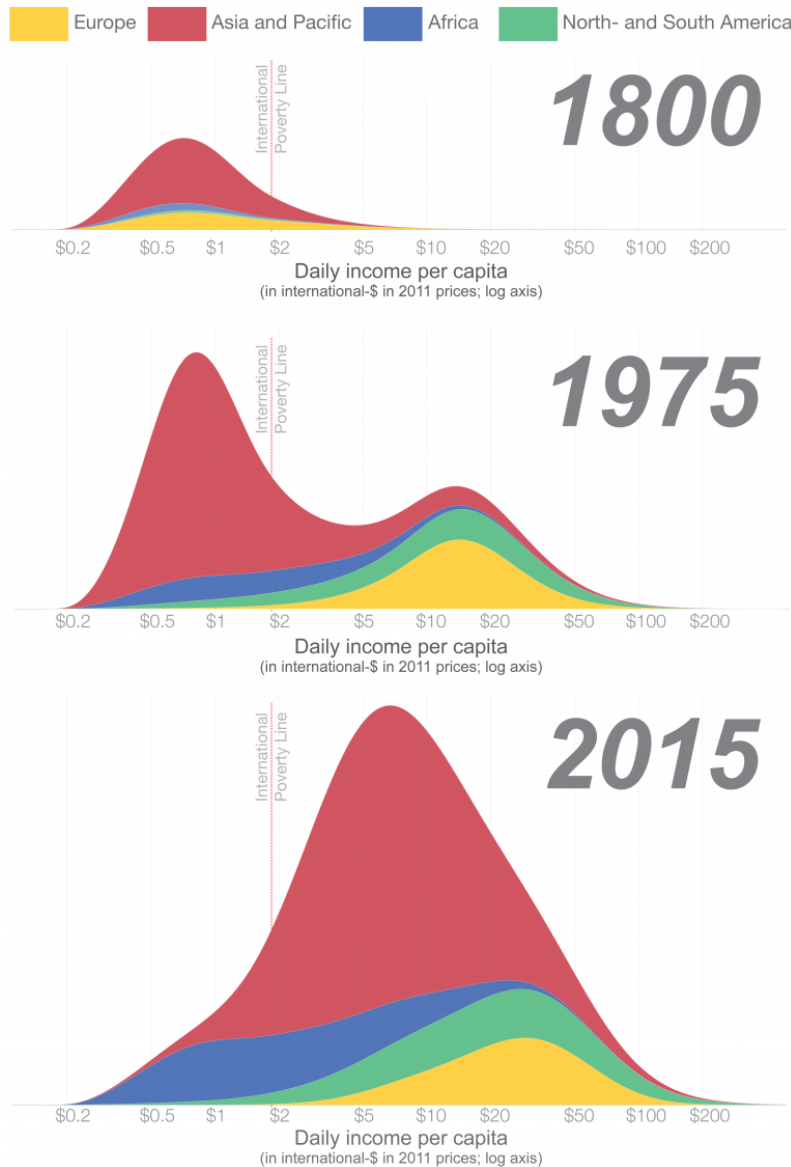
¹ <https://ourworldindata.org/global-economic-inequality>

(Note: Like most famous experiments from this era, there is some [reason to think](#) the results of these experiments may have been exaggerated or p-hacked. However, they also appeared to have been predictive of future social trends that had not yet come to pass when the experiments were conducted which leads us to think they are at least worth considering.)

Global income distribution in 1800, 1975, and 2015

Our World in Data

Income is measured by adjusting for price changes over time (inflation) and for price differences between countries (purchasing power parity (PPP) adjustment). These estimates are based on reconstructed National Accounts and within-country inequality measures. Non-market income (e.g. through home production such as subsistence farming) is taken into account. The International Poverty Line is set by the United Nations and is the poverty line that defines extreme poverty.



Data source: Calculations by Ola Rosling from Gapminder
OurWorldinData.org - Research and data to make progress against the world's largest problems.

Licensed under CC-BY by the author Max Roser.

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² Graph from [Global Economic Inequality by Max Roser](#)

So, what happened in these “Rat Utopias” in which rats (and mice in some iterations) had access to unlimited food and water?

“The mice couldn’t form normal social bonds or engage in complex social behaviors such as courtship, mating, and pup-rearing. Instead of interacting with their peers, males compulsively groomed themselves; females stopped getting pregnant. Effectively, says Ramsden, they became “trapped in an infantile state of early development”. Ultimately, the colony died out. **“There’s no recovery, and that’s what was so shocking to [Calhoun],”** says Ramsden.³

“Among the males the behavior disturbances ranged from sexual deviation to cannibalism and from frenetic overactivity to a pathological withdrawal from which individuals would emerge to eat, drink and move about only when other members of the community were asleep.”

“The common source of these disturbances became most dramatically apparent in the populations of our first series of three experiments, in which we observed the development of what we called a behavioral sink. **The animals would crowd together in greatest number in one of the four interconnecting pens in which the colony was maintained.** As many as 60 of the 80 rats in each experimental population would assemble in one pen during periods of feeding. Individual rats would rarely eat except in the company of other rats. As a result, extreme population densities developed in the pen adopted for eating, **leaving the others with sparse populations.**”⁴

“The few secluded spaces housed a population Calhoun called, “the beautiful ones.” Generally guarded by one male, the females—and few males—inside the space didn’t breed or fight or do anything but eat and groom and sleep. When the population started declining the beautiful ones were spared from violence and death, but had completely lost touch with social behaviors, including having sex or caring for their young.”⁵

We find it telling that the first human populations to experience demographic collapse are those which were first to enter rough human equivalents to “Rat Utopias.” Population has first begun to rapidly decline among human groups that reached levels of development at which the majority of their population was not food and water constrained a few generations earlier than others.

³ <https://www.the-scientist.com/foundations/universe-25-1968-1973-69941>

⁴ https://en.wikipedia.org/wiki/Behavioral_sink

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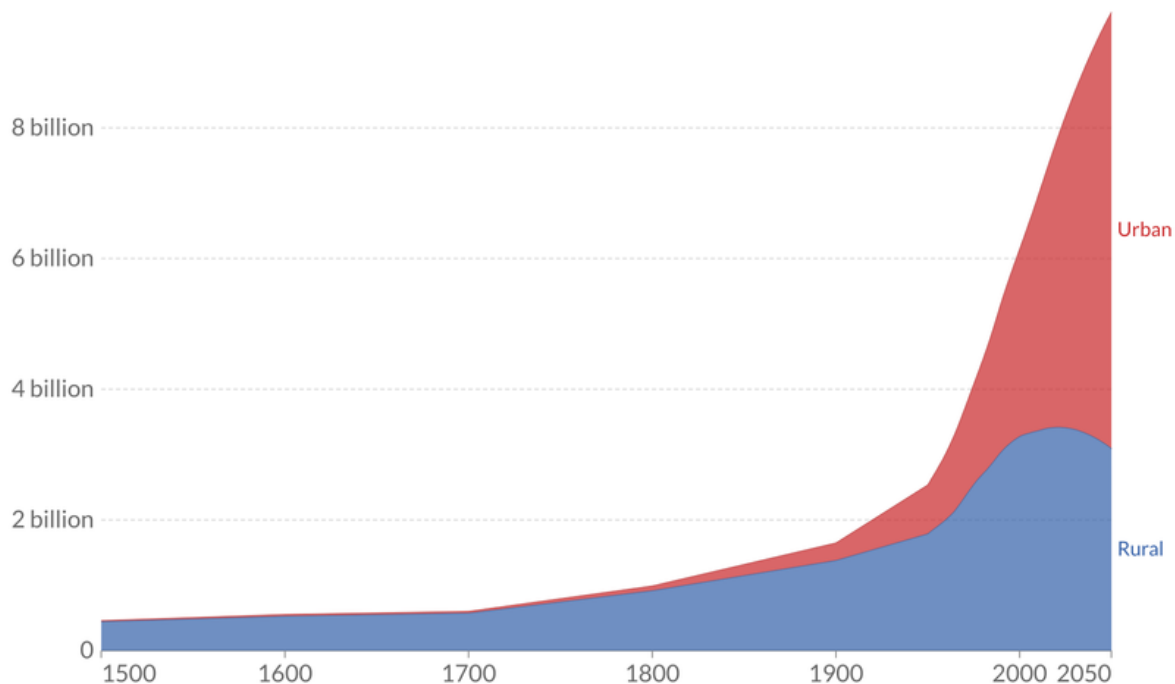
<https://www.smithsonianmag.com/smart-news/how-mouse-utopias-1960s-led-grim-predictions-humans-180954423/>

We also find it telling that many of the behaviors observed in the Utopia rats have arguably manifested in humans occupying developed economies from the 1970s onward, suggesting this rat experiment was roughly predictive of human societal trends, given these studies were mostly undertaken from the 1940s to the 1960s. For example, the development of a “[behavioral sink](#)” in which the rats began to cluster could be seen as analogous to the explosion in urbanism since the studies were conducted.

Urban and rural population projected to 2050, World, 1500 to 2050

Total urban and rural population, given as estimates to 2016, and UN projections to 2050. Projections are based on the UN World Urbanization Prospects and its median fertility scenario.

Our World
in Data



Source: OWID based on UN World Urbanization Prospects 2018 and historical sources (see Sources)

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Observations like, “[the] population would assemble in one pen during periods of feeding. Individual rats would rarely eat except in the company of other rats” demonstrate that among many of the rats, compulsive, suicidal, ultra-prosociality developed right before the populations began to collapse (some might argue we are seeing analogous behavior in some human populations).

In addition, populations like the “beautiful ones” seem to indicate that a portion of the population in this sort of collapse scenario will retreat from in-person interactions and become obsessed with grooming behavior. Potentially in humans this could be seen as a growing obsession with

⁶ Ritchie, Hannah, and Max Roser. “Urbanization.” Our World in Data, 13 June 2018, <https://ourworldindata.org/urbanization>.

social validation, to the extent that people “forget” how to breed (perhaps this phenomenon is at play with dropping sex rates and populations shifting to more online—rather than in-person—interaction).

Finally, of note “to a pathological withdrawal from which individuals would emerge to eat, drink and move about only when other members of the community were asleep.” If we see countries like Japan as at a more advanced stage of the Rat Utopia experiment we might see this pattern as being reflected in the [Hikikomori](#) phenom in which many individuals stop interacting with society and stay socially isolated as much as possible. (It would be very interesting if this turned out to be predictive and we started seeing Hikikomori behavior in other countries once fertility rates drop below a specific point.)

The question of course is what is really causing the unusual behavior (if it is real). For example, it could be innocuous things like the clustering acculturating the rats to want to only eat when close to other rats—similar to the study that shows that rats which have all their early sexual experience when wearing a little vest will have trouble having sex without a vest.⁷ It could also be some disease or [mutational meltdown](#) that was not picked up given Calhoun's poor experimental protocols caused the unusual behavior and population collapses. The most concerning potential mechanism of action is that he was witnessing a pattern of behaviors which emerged in social mammals as a result of stress caused in post scarcity environments. (Like how mammals demonstrate a pre-set range of behavior patterns when caged, causing them to do things like pace, pick at their hair, and not mate.)

People have drawn all sorts of wild implications from Calhoun's experiments, often attributing their results to whatever their particular cause area is. For example, many originally used the experiments to decry overcrowding and overpopulation, even though the study is equally about giving a population of social mammals unlimited food and water (plus in late stages of the experiment, the rats were found to *intentionally* crowd, leaving large parts of the pen sparsely populated).

For that reason, we won't extrapolate too much (and we'll fully admit that our conjecture is nothing more than that), other than to point out that these experiments show that equilibrium may not be a guaranteed outcome of a post-scarcity society. There is a chance that things don't equalize. *(Note: Two follow up studies were not able to recreate the population collapse but did create many but not all of the other behaviors. Given the number of “universes”, or instances of this study, Calhoun created this might be a rare phenomenon.^{8 9}) (As an additional note: If any*

⁷ Pfaus, J. G., Erickson, K. A., & Talianakis, S. (2013). Somatosensory conditioning of sexual arousal and copulatory behavior in the male rat: A model of fetish development. *Physiology & Behavior*, 122, 1-7.

⁸

<https://www.semanticscholar.org/paper/Behavioral-changes-due-to-overpopulation-in-mice-Hammonck/19a3aef98fda0e63b065da7deddd82655a185c1f?p2df>

⁹ <https://www.gwern.net/docs/biology/1966-kessler.pdf>

reader is involved in recreating this experiment, please measure testosterone levels. I would be very interested to see if a behavioral sink explains it in the human population.)

The Economics of Demographic Collapse

In the following sections we will explore the economic impacts of demographic collapse.

Systems Collapse Risks

Our entire economic system runs on the assumption of aggregate growth.

The economy = productivity per worker * number of workers, both of which have historically gone up.

However, while [productivity per person](#) increases linearly, most of the developed world is about to see their populations decrease at exponential rates (an inevitability when looking at something like the EU's current-and-falling 1.5 fertility rate). When this happens, the stock market, on average, will begin to shrink and when that happens people will stop putting their money there¹⁰. Civilizationaly, we will stop investing in the future.

Worse, nearly every country, every city, and every municipality has been designed with an assumption of constant growth, which has led them to essentially take on tons of leverage—not just in the form of debt, but in the form of other fixed expenses tied to past delivered goods like pensions and social security programs. Every entrepreneur here knows what this means: When things are growing, you multiply on that abundance, but when things shrink, life starts to suck, big time.

For those who haven't worked with leverage: Imagine a city that directs 50% of its money to pensions, social-security-like programs, and debt payments ([this is where Detroit was when it went bankrupt](#)). This is fine if the population grows by half, as that 50% of the budget becomes 33% and is quite manageable. But what if the tax base shrinks? If the city's population and tax base shrinks by just 30%, its usable money decreases by 60%, not 30%.

If a city's tax base were to shrink by 40% (consider in NYC, just the wealthiest 38,700, 0.5% of the city's population, pay 42.5% of taxes), the usable portion of that city's budget would drop to 10%.

¹⁰ We acknowledge that governments may begin to experiment with some wild and innovative debt instruments designed to prop up financial market increases, but whether or not such yet-untested experiments will work is pure conjecture. We would be unwilling to bet the next generation's collective savings that a deus ex machina will sweep in to save financial markets when their core fundamental drivers change.

The larger point here is that it's easy to notice that [7.2% of the budget](#) goes to paying off debt in NYC without noticing that [33% of payroll](#) expenses are paying off already accrued pensions. In the past this has not been a problem because cities were always growing—now it is.

As cities try to operate on smaller portions of their budgets, they will become less attractive places to live, causing even more wealthy people (who pay the lion's share of cities' taxes) to leave them. An exodus of wealthy taxpayers will trigger a snowball of worsening conditions for those economically trapped in cities (this is largely what happened in [Detroit, as we discuss here](#)).

Let's ignore the financial problems cities will have. How do you keep the lights on in a city like Seoul when your population is decreasing that fast ([4.3 great grandkids for every 100 Koreans](#))? How, at a basic level, do you keep infrastructure functional? Take immigrants? From where? I suppose developed countries could start to mass import people from Sub Saharan Africa ([until they, too, fall below replacement rate](#)) to support their mostly white and Asian, non-working, geriatric populations. That said, I feel like we have learned that importing people from Africa with the explicit purpose of supporting non-working white people is unethical.

Surely at least the suburbs will be safe, right? If the [Strong Towns](#) narrative is correct, most suburbs were built on an economic model in which they utilized developers, not tax dollars, to put down roads, electrical systems, and sewer systems—most of which will soon need to be replaced or retrofitted, as they were built during the time of suburban expansion. The Strong Towns argument holds that suburbs don't generate enough tax revenue to maintain these systems themselves. Basically, suburbs outsourced a huge portion of their spending to developers (who will only shoulder infrastructure costs once) and aren't equipped to shoulder that financial burden themselves. ([This youtube video](#) does a good job covering this topic.)

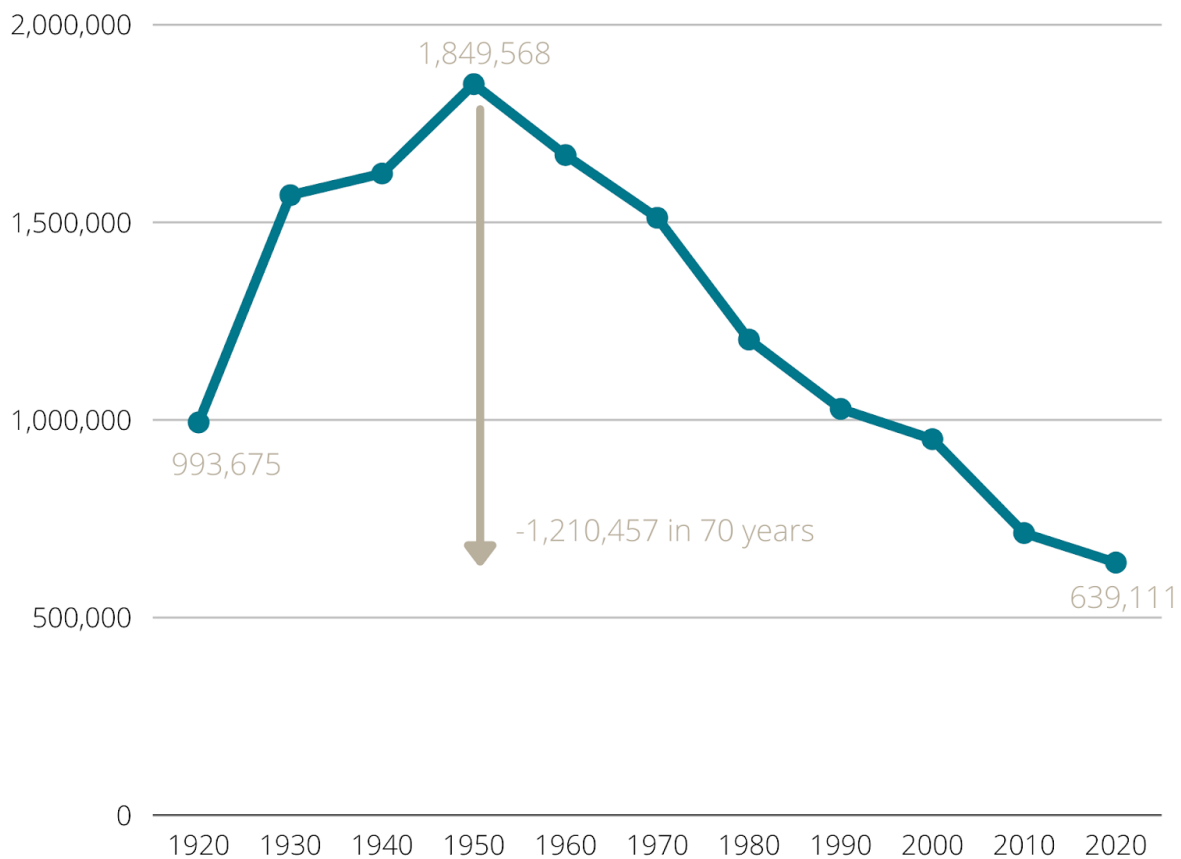
In a world in which real estate is losing value, the stock market is losing value, and venture capital funds aren't chasing after growing markets and IPOs, where do people put their money? This is a really interesting thought experiment. We don't have any solid answers yet, but it would seem wise to somehow financially invest in breeding populations of humans. This could either mean good things (like investing in one's community) or bad things (like slavery 2.0). We expect a bit of each will play out throughout the world.

Detroit as a Model for Collapse

(Because the demographic collapse that took place in Detroit was driven by industrial collapse rather than a paucity of new children being born, the headwinds that caused it are fundamentally different from the headwinds that will cause population or birth-rate-based demographic collapse. Detroit can nevertheless serve as a case study demonstrating what a rapid decline in both population and tax revenue looks like in a developed nation's city.)

When we talk about “systems collapse” resulting from a rapid decrease in population, we are not speaking in hypotheticals. We have seen this happen before and thus have a fairly good

understanding of (1) what many post-demographic-collapse cities may look like and (2) the mechanisms that will cause them to break. Specifically, Detroit lost around 600,000 residents between 1950 and 1980, leading [to a 60% population decline from the 1950s](#).



This population exodus triggered Detroit's bankruptcy. At the time of bankruptcy, half of the city's [\\$18 billion debt was for worker-related liabilities, including retiree pensions and healthcare—aka for people who were no longer contributing to the city's daily operations](#). This indicates that areas in which they are “leveraged” (through deferred portions of salaries, benefits, etc. for city employees that were hired when the city's population was much higher) will be the first to break in rapid population collapse scenarios.

Unused infrastructure presents Detroit's next point of system failure. When thinking about a city's population halving, many imagine lots of cheap real estate and extra room to live. This is not what emerges in practice. As anyone who owns a house knows, basic infrastructure and buildings are expensive and labor-intensive to maintain on a year-to-year basis. If the property value is decreasing (which it is if population is decreasing), then there is less motivation to continue to make these investments and property maintenance—and therefore quality—plummets. If your house might literally [sell for \\$1, why improve it?](#)

At scale, this looks like urban blight, with decaying buildings as far as you can see. On top of that, the infrastructure that used to feed these decaying buildings (the city's power grid, streets, sewage system, etc.) are all still being maintained by the city, while the tax revenue associated with the properties is no longer coming in, further straining the system. The above two factors motivated [Detroit's plan to bulldoze around a fifth of the city](#).

Sometimes when we speak with others about Korea's current birth rates leading to 4.3 great grandkids for every 100 current Koreans, they talk about how cool it would be to have all that infrastructure for so few people. They imagine people living in giant apartments and extremely cheap houses. [In our Appendix, you will find a far more accurate visualization](#) of what depopulation combined with rapidly declining house prices actually looks like in urban environments.

Finally, the manner in which cities are forced to react to these shifts creates a snowball effect that exacerbates the problem. Specifically, in response to all its problems, Detroit had to raise taxes, causing the city to charge [the highest property taxes as of 2014](#).

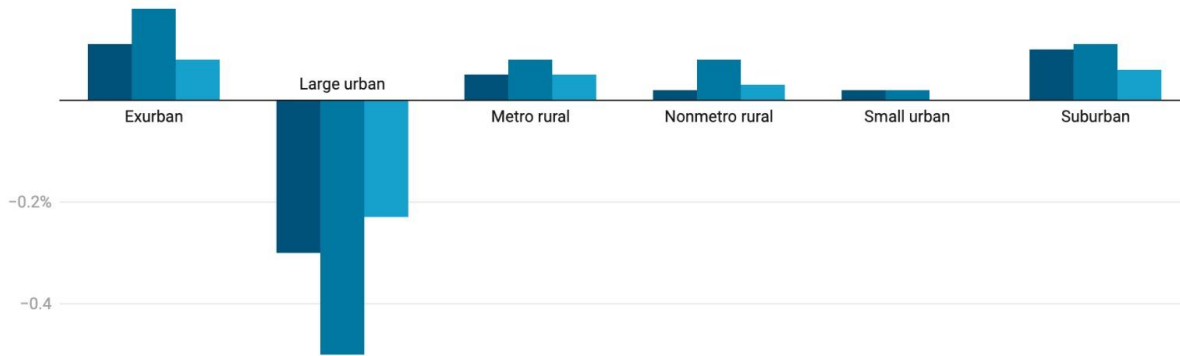
What's more, urban flight during systems collapse is usually initiated by the wealthiest, who tend towards the more classically liberal side of the political spectrum, leading to regulations getting stricter. In the case of Detroit, this dynamic produced an "economic freedom" ranking [345th out of 384 metros](#).

Note:

- [New info on why cities should be worried](#): "From July 2020 to July 2021, the number of children under five years of age in large urban counties—those intersecting with an urban area of at least 250,000 people—fell by 238,000, a one-year drop of 3.7 percent. Including the early months of the pandemic in 2020, this figure grows even larger. Between 2019 and July 2021, large urban counties saw their under-five population fall by 358,000 children, a decline of 5.4 percent." . . . "While these numbers are stark, one difficulty in interpreting them is that birth rates overall have declined, and the country is taking in fewer immigrants and their families each year. As such, the number of young children overall has declined—between 2010 and 2021, the population of children under five fell by more than 1.3 million, or 6.8 percent, and in 2019 alone, it fell by 207,000, or one percent."

Change in overall share of U.S. population, 2020-21

■ Total ■ Under 5 ■ Age 5-17



How AI May Offer a Deus Ex Machina

Perhaps the dire scenarios described above will not come to pass thanks to a literal deus ex machina.

Remember the $[A \text{ (number of people)} * B \text{ (productivity per person)} = \text{economy}]$ equation? Throughout history, we have only been able to modify B with technology, but AI allows us to also modify A—and you don't even need sapient AI.

What percent of artists could be replaced with DALL-E-2 or Imagen? How many other jobs could be replaced with GPT-4? You don't need to model a whole human to replace them as an economic unit—you just need the part of them that contributes economically.¹¹

More generally, if we don't solve the AI alignment problem, demographic collapse will not matter. However, if we do solve the problem and live in a post-AGI future it would be irresponsible to not note just how much AGI could be a wild card, solving problems that arise from demographic collapse.

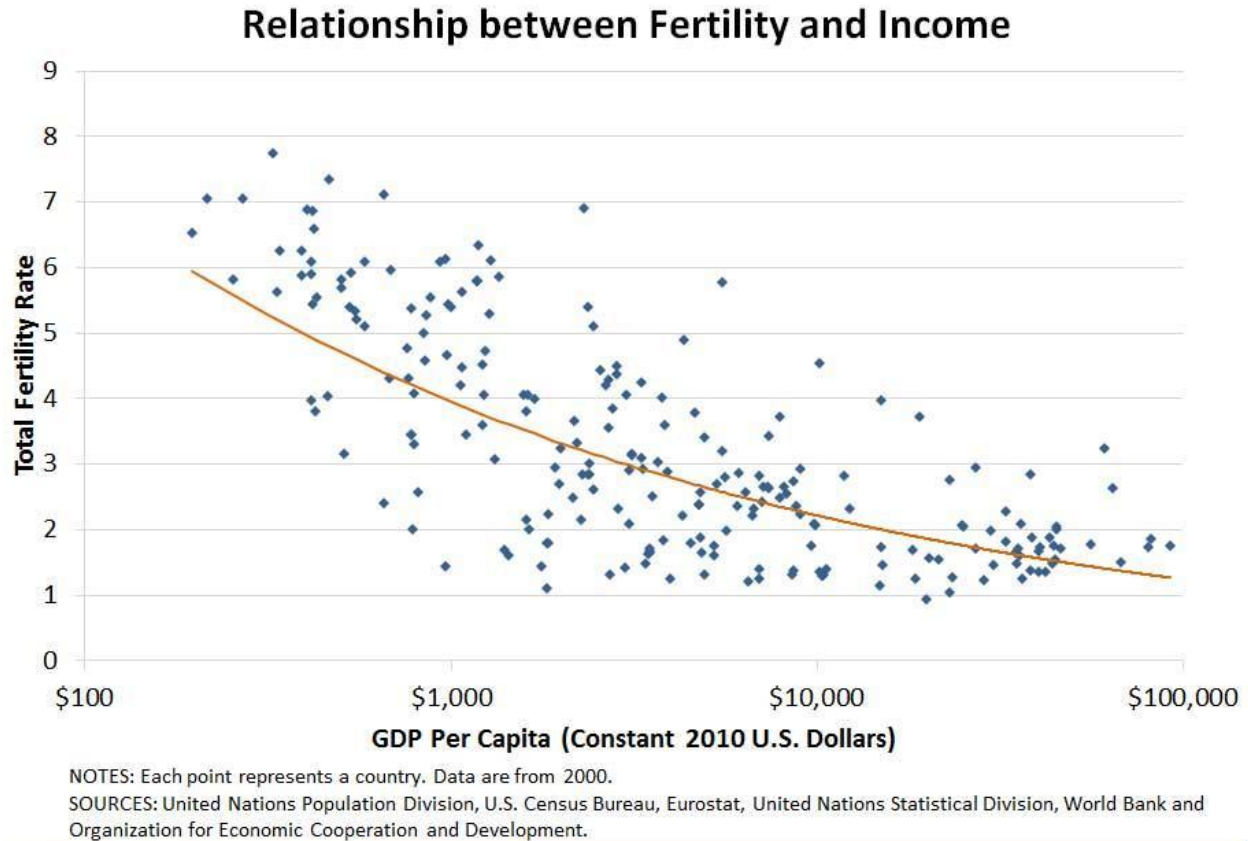
Does Addressing Economic Failures Solve Demographic Collapse?

Are low birth rates a product of people not having enough money to have kids? Are lower birth rates triggered by a rising cost of living and increased cost of housing?

Both within and between countries, we see clearly that lower rates of income actually correlate with increased fertility. This effect can even be seen within a population. For example, [in the](#)

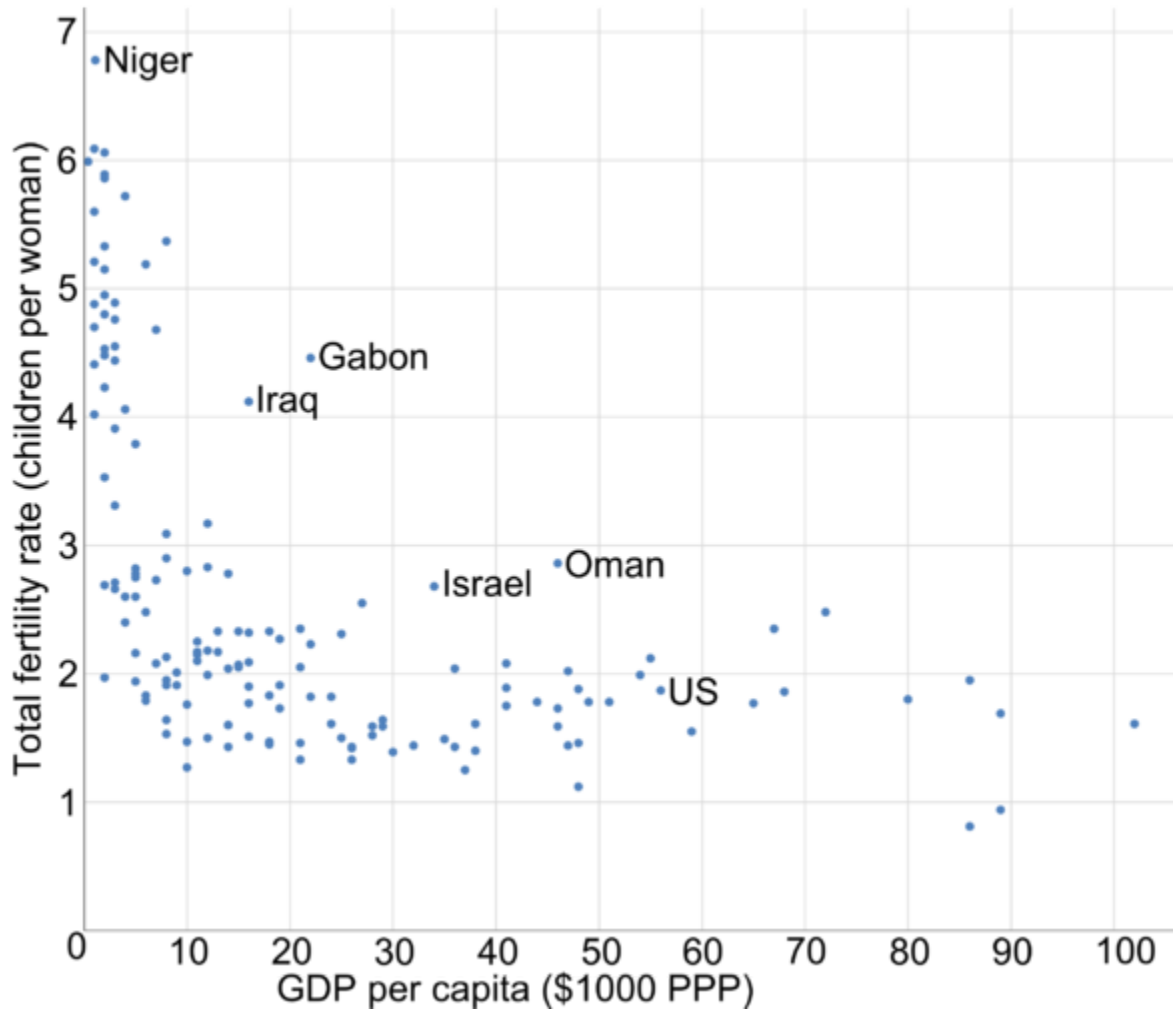
¹¹ hath suggests [this CGP Grey](#) video on the subject.

[years after the revolutions of 1989 in Russia, people who were more affected by labor market crises seemed to have a higher probability of having another child than those who were less affected.](#)



FEDERAL RESERVE BANK of ST. LOUIS

Source: [St Louis Fed](#)

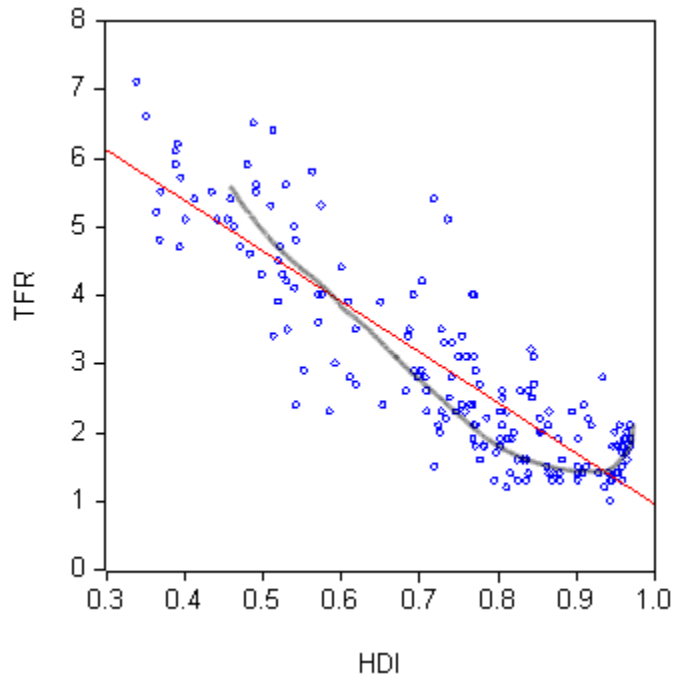


The [Wikipedia page](#) this came from.

There is, nevertheless, some evidence to the contrary:

- [Sharp declines in fertility rates in India, Nigeria, and Mexico occurred despite low levels of economic development.](#)
- [Increased unemployment is generally associated with lower fertility.](#)
- [A study in France found that employment instability to have a strong and persistent negative effect on the final number of children for both men and women—and that employment instability also contributes to fertility postponement for men. It also came found employment instability to have a negative relationship with fertility among those with more egalitarian views about the division of labor but still a positive relationship for women with more traditional views.](#) (Note: The second part of this finding is fairly concerning in the light of genopolitics if gender egalitarian views are important to you.)
- [There is some evidence that smaller house sizes may decrease fertility.](#)
- [Some scholars have recently questioned the assumption that economic development and fertility are correlated in a simple negative manner. A study published in Nature in](#)

[2009 found that when using the Human Development Index instead of the GDP as measure for economic development, fertility follows a J-shaped curve: with rising economic development, fertility rates indeed do drop at first but then begin to rise again as the level of social and economic development increases while still remaining below the replacement rate.](#)



Note: [The above points were pulled from this Wikipedia entry.](#)

The evidence above collectively suggests that economic interventions are unlikely to fix the fertility crisis. While there is some evidence suggesting that at the higher end of economic wealth, birth rate starts to rise again, and in some specific scenarios, worse economic conditions can decrease birth rates overall, the vast majority of the evidence suggests a correlation between lower wealth and higher birth rates in most cases.

Risk of Exacerbated Climate Change Problems

Global warming is likely exacerbating demographic collapse. Studies have shown [hotter temperatures decrease birth rates](#).

At the superficial level, lower population levels seem to be better for the environment. Unfortunately, if population declines fast enough to lead to systems collapse and the world begins to deglobalize, many regions may have to revert to “dirtier” coal power, leading to what might be a net increase in greenhouse gas emissions. Of course, deglobalization would also mean products travel shorter distances to reach their consumers, so in that sense we would expect a better environmental outcome.

There are so many unknowns here, any model would be pure speculation. Our point is that decreasing birth rates are not necessarily strictly good for the environment. For more information on the debate about globalization's effect on the environment see [this article](#). Also consider reading [Scott Alexander's argument as to why choosing to not have kids isn't an optimal way to fight climate change](#).

Genopolitical Risks & Cultural Mass Extinction

The following sections focus on the environmental, demographic, and cultural risks of demographic collapse.

The Collapse of Prosocial Value Systems

Cultures are a very unique form of meme. Within generations, cultures spread by compelling those who are infected with them to infect others. Intergenerationally, this is almost never the case. Instead, historical cultures have primarily grown by positively modifying the fitness of their members (the number of surviving kids they have). This is a problem for most prosocial, secular, and religious communities that pass for “normal” in modern society. Essentially, everyone is facing a collapse except for Anabaptists (the Amish/Mennonites), Haredi Jews, very extreme Muslims,¹² and a few other communities.¹³ (Remember that [even Mormons](#) are likely close to below replacement rate.)

After all, why does almost every successful (large and long-lived) traditional culture in the world have homophobic undertones? Cultures can be thought of as evolutionary units. Cultures that accept gay people on average have lower birth rates and are ultimately outnumbered by neighboring homophobic cultures. We nevertheless stand at a unique point in history at which gay acceptance has risen. Why? Because the internet, widespread education, easy travel, and television empowered memes that compete on the basis of logic, philosophy, prosociality, and human decency.

While personally pleased with these cultural developments, we worry that this unique moment in history has introduced never-before-seen selective pressures on our species that—if not addressed—could push us back to being a less inclusive society.

¹² Average American Muslims [barely breed above repopulation rate](#) at 2.4 kids per family and the number is dropping and mostly held up by recent immigrants. When we say extremist Muslims we mean groups like ISIS.

¹³ In the strongest possible terms, we have nothing against these groups—we would go so far as to say we have a unique affinity and respect for the Anabaptists. We are just pointing out the fact that if current trends continue, most cultures other than them will die out (and one thing we *do* care about is cultural diversity). Homogeneity within any biome makes it dramatically more fragile, and fragility is something we can not abide.

But surely this could not happen? Here¹⁴ is a paper quantitatively showing how differential fertility rate can have substantial impact on the attitude towards social issues. From 2004 to 2018, the differential fertility (more conservative, more kids) increased the number of US adults opposed to same-sex marriage by 17%, from 46.9 million to 54.8 million.

[In his essay touching on the Quiverfull movement](#), Scott Alexander suggests that while these ultra religious families who often have ten plus kids could theoretically take over the country in a few generations, they are not a threat because many kids defect (80%, he estimates)—Alexander's takeaway being the effective altruism movement is outcompeting Quiverfull families, memetically speaking.

Genopolitics tells a different story. What is really happening is that individuals from those families with sociological profiles amenable to movements like effective altruism, progressivism, secularism, or broad civilizational values are being selected out of the gene pool. As evolution does its work, every subsequent generation of the Quiverfull movement will do better and better at maintaining cultural fidelity. Any virulent meme with a negative impact on fitness will genetically select against sociological profiles that would have adopted it in future generations.¹⁵ ([A good study](#) on what polygenic risk scores correlate with low fertility and [a paper](#) showing how fast we should expect change to take place.)

When most people lived in the [corporate family model](#), additional kids meant a better life because it meant more helping hands. Until very recently, virulent memes were also somewhat contained by minimal mediums of transition. Now, to have a good reason to breed above replacement rate, most humans need some exogenous motivator and the few groups that have been able to stay well above replacement rate within developed societies have been able to do so using cultural motivators (usually some form of religious extremism or racial/ethnic agenda is at play).

Genopolitics explores how a person's genes affect their political affiliation. The Minnesota Twin study found that around 40% of a person's political affiliation is genetically influenced (the [Minnesota Twin study](#) looked at identical twins adopted and raised by different families and compared them to fraternal twins also adopted and raised in different families).

As the field of genopolitics has evolved to include data on [polygenic scores](#), it has become possible to get even more robust data (in this type of study, databases that contain the genetic data from tens of thousands of people are correlated with specific sociological profiles). This has led to the discovery that most aspects of a person's sociological profile have a heritable component. These traits range from prosociality ([30% to 50% genetic](#)) to religiosity ([27%-62% genetic](#)).

¹⁴ Vogl, T. S., & Freese, J. (2020). Differential fertility makes society more conservative on family values. *Proceedings of the National Academy of Sciences*, 117(14), 7696-7701.

¹⁵ With regard to this subject, Benjamin Hoffman suggests [this](#) article.

If you want to read some metastudies, [here](#) are [two](#) and here is a [Wikipedia](#) entry on the subject. For research specifically on genetic variants tied to altruistic behavior, empathy, and cooperativeness, see [this](#) study. While this does not mean much at the individual level, strong selective pressures playing out at a population level will absolutely alter humanity's overall character.¹⁶ (Side note: [Within a generation](#) less people having kids will make the generation significantly more liberal but [between generations](#) it makes them significantly more conservative.)

Our non-profit, [Pronatalist.org](#), paid Mohammed Ali Alvi, a researcher at Mayo Clinic, to go over data collected by Spencer Greenberg's [Clearer Thinking](#) to get a better picture of what the future sociological and cultural profile of America might look like. [You can go over the data here](#). (We had been planning to publish it but did not have the funds.)

To summarize: Our hypothesis was wrong. We assumed that only a propensity towards religious extremism would be associated with a high birth rate (meaning we theorized that while the overall "tone" of humanity would change and become more religiously extreme, that need not be such a bad thing as religious extremism has led to positive outcomes).

Contrary to our hypothesis, the data suggests that we should expect future generations of Americans to hail from cultures that feature genetic correlates associated with being:

1. Much more tribalistic (hesitant to interact with outsiders, such as different ethnic and religious groups)
2. More drawn to strictly hierarchical power structures
3. More dogmatic

In other words, the data suggest that we are not headed toward an Idiocracy, but rather toward an ISIS-ocracy.

Any sociological profile that renders individuals susceptible to memes that decrease birth rates is essentially a terminal genetic condition. This condition puts a ticking clock on most of the world's charitable efforts, ranging from those focused on environmental risk to those promoting equality and protecting marginalized groups. If our research is valid, the world will become more and more hostile toward these sorts of communities with each new generation.

Suggested additions by readers after initial writing:

- ["Contemporary humans are still evolving, but natural selection favors those with lower earnings and poorer education—according to research from the University of East Anglia."](#)
- "David Hugh-Jones said: "We found that 23 out of 33 polygenic scores were significantly linked to a person having more or fewer children over their lifetime."

¹⁶ While a number of [articles](#) argue against findings that specific genes are linked to specific voting patterns, it is actually fairly rare to see an argument that voting overall has no or weak genetic correlation.

"Scores which correlated with lower earnings and education predicted having more children, meaning those scores are being selected for from an evolutionary perspective.

"Scores which correlated with higher earnings and education predicted having fewer children, meaning that they are being selected against."

- *One reader suggested that if people did not believe that cultural selection events could change the sociological profile of a group over a short period of time that they should look to Cuban Americans who are still [disproportionately Republican](#). We don't know if this is a great example but an interesting point nonetheless.*

Risk of Cultural Mass Extinction

Eventually the cultures and sociological profiles that cannot effectively motivate individuals to breed above repopulation rate will die off. After they do, we will see another explosion in the human population. The true tragedy will come from the homogeneity of this population explosion. We suspect many would agree that a more homogenous society is one with fewer orthogonal thought processes and thus one more susceptible to threats.

If society were an ecosystem, someone just dumped a tankard of pesticide in the groundwater. Eventually, plants that were resistant to the pesticide will grow, thrive, and speciate—but in the short term, this ecosystem will be very fragile.

As such, we would like to build an “endangered list” of cultures and groups with uniquely low birthrates. Many of these groups are non-obvious as they are a subpopulation in other regions (like the Parsi, which has a population of around 50,000 and a [birth rate 0.89](#)). Off the top of our heads, groups that would make this list include: Koreans, Japanese, Jains, Parsi, Emirates, Tanka, Macanese, Taiwanese, and Italians, but this list is skewed by my work in Korea, which is likely causing me to over emphasize Asian groups.

Notes after writing:

- *In contrast to what the racist, Great Replacement Theory, would have one believe, fertility is declining [faster among Native American, Hispanic, and Black Americans than it is white ones](#). In fact, white populations seem to be more resistant to birth rate collapses when contrasted with other cultural groups.*
- *We internally use the equation that the moral weight of letting an ethnic group go extinct is the moral equivalent of whatever genocide minus killing the same number of people is.*
- *[Immigrant birth rate in the US \(both legal and illegal\) is below replacement rate now.](#)*
- *For those who don't conceptually grasp how quickly populations can grow or shrink, the Hutterites (a population of Anabaptists) had a community of just [400 140 years ago and now have a community of 50,000](#) and due to their extreme lifestyle grew almost exclusively through birth rate. Whereas our cultural group, the Calvinists, made up around [55%-75% of the US population](#) around 1775 but today make up less than 0.5% of the US population, (this was mostly due birth rates starting to fall about a century ago and the culture having low retention).*

Risk of Increased Domestic Violence

One of the most obvious outcomes of not doing anything about birth rates will be an almost-inevitable increase in domestic violence and general violence against women. While we do not have data on hard numbers, uniquely high birthrates are correlated with non-egalitarian gender role interpretations in communities (in general, [more egalitarian views on gender lower birth rates](#)), and non-egalitarian gender role interpretations in turn correlate with domestic violence. A correlation between higher birth rates and domestic violence has actually been observed—[even in non-westernized cultures](#) (specifically the Tsimane forager-horticulturalists of Bolivia).

We won't go particularly deep on this topic out of fear of stereotyping specific cultures. Suffice it to say that if we cannot find a way to encourage a higher birth rate in cultures and sociological profiles that value egalitarian treatment of women, the future of humanity will likely include much more domestic violence than the present.

There are a bunch of risks of this type tied to demographic collapse, including gay rights, female educational attainment, climate change activism, etc. As we have stated above, many prosocial beliefs negatively correlate with birth rate.

Solutions & Tractability

The rapid decline in fertility is a unique problem in that it is not a tragedy of the commons issue like many other causes at its scale, making it potentially the most tractable of all civilization-level threats. If one family with a strong prosocial culture had eight children a generation and passed down their culture—and high birth rate—for just eleven generations, their descendants would outnumber the entire human population today. Should just one billionaire perfect artificial womb technology and attempt to rebuild a society, imparting those born from the effort with a sense of responsibility and the option to dedicate some portion of their income to keeping the initiative going, the whole situation would be fixed. Similarly, if cultural norms change and countries start to take responsibility for the creation of their own populations, the problem goes away.

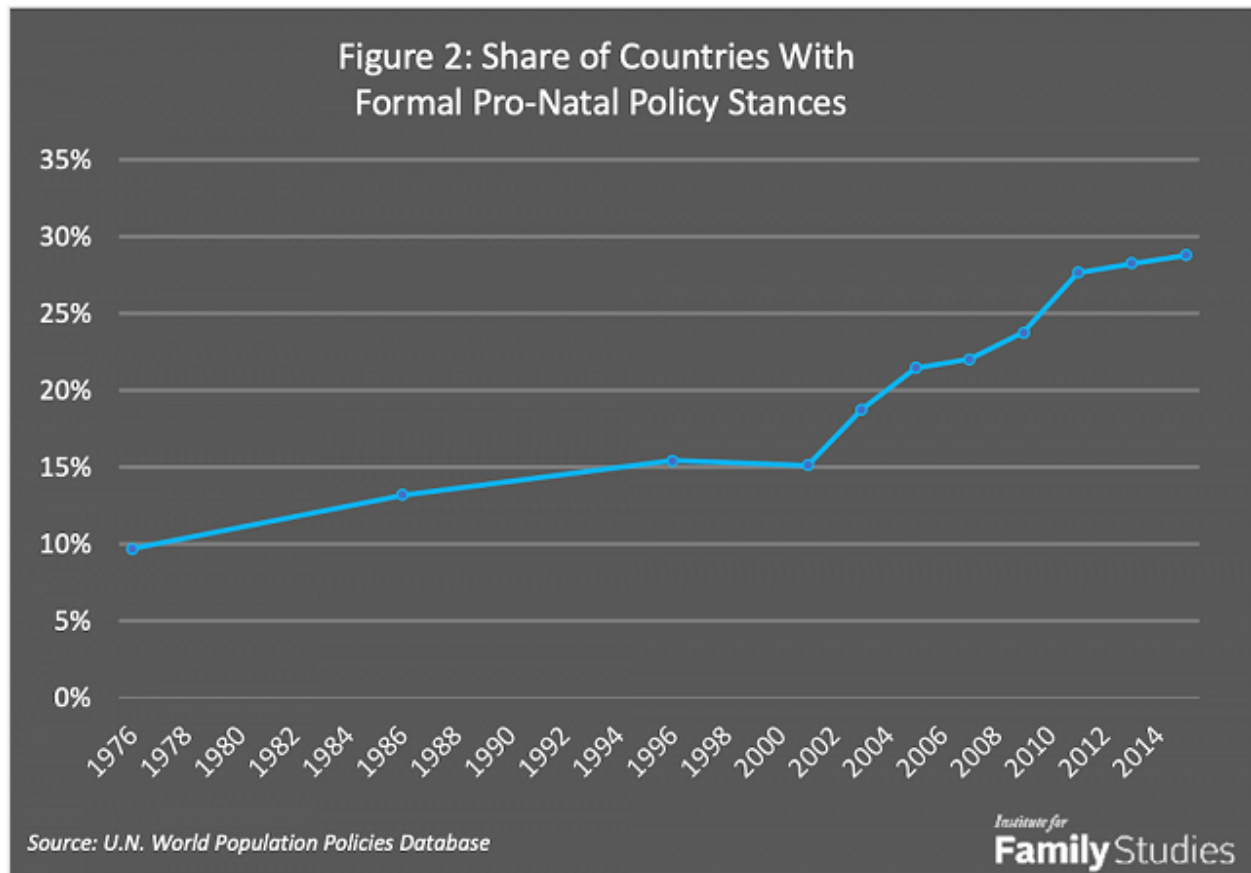
The problem with the “solutions” to the fertility crisis is that the straightforward ones, such as those explored above, could lead to monstrous scenarios and cultural/ethnic homogeneity. While the problem does not require vast wealth or many families to be solved, it does need some people to completely dedicate themselves to it.

In contrast, most “solutions” to the fertility problem also address most of the world's other problems by granting more robust systems and value sets to future generations. It is for this reason that we (Malcolm and Simone) have dedicated most of our adult lives to working on this problem in one way or another.

Government Intervention

Estimated Probability of Success: Low

Several countries are already instituting pronatalist policies and these policies are likely to spread to more and more nations as demographic collapse progresses (and awareness of its consequences increases).



There is not much compelling evidence suggesting that government policy can meaningfully address birthrates.

Both Poland and Hungary recently adopted aggressive pronatalist policies. It is generally agreed that despite spending around 4% of their GDP on them Hungary's policies [did not work](#) and that either Polish efforts [did not work](#) or did not work *well enough* (only producing a [6% increase in births](#)).

For a list of studies on pronatalist policies and their effect sizes, [see this Google Doc](#) (note: there is debate as to whether these policies show large effect sizes).

The only policy intervention of which we are aware that had a fairly uncontested effect on birth rate involved [the Soviet Union taxing individuals without kids](#)—a solution that is politically unrealistic in governments with elected leaders.

What about lowering the cost of child care? Does that help at all? This is a [fairly well studied](#) intervention. Evidence suggests that cheap child care does increase fertility rates, but not nearly enough for it to be a “solution.”

In general, interventions like free child care and cash payouts for having kids don’t seem to have the level of impact needed to stave off demographic collapse. Governments need to modify fertility rates up by at least 25% over the long term for that to be the case.

Note: Since first writing this, we were presented with one potential policy intervention addressing demographic collapse that, while unrealistic to implement, is at least interesting to discuss. This model entails incentivizing parents to have more kids by giving them a portion of their kids’ expected tax payments to the state at birth. Expected tax payments could be priced accurately (to prevent parents from just pumping out tons of kids and putting no effort into raising them as an economic strategy) by floating them on a market. Essentially, nations would use a model [like this one](#).

Fertility Treatment Research

**Estimated Probability of Success: Low **

The measurable drops in biological fertility outlined above absolutely contribute to demographic collapse, meaning that populations would enjoy marginal increases in birth rates if this problem was addressed.

Nevertheless, culture plays a far larger role in falling birth rates than reduced fertility, and scientists already have non-trivial funding supporting research to address this problem (there is an active, functional market for improving biological fertility).

Finally, there is an argument to be made that the world would be better off with more [polygenic risk score screening of embryos](#), which intrinsically is easier to do in a world where more people are doing IVF.

Note: IVG (in vitro gametogenesis) technology would change everything to the extent it would require a document as long as this one just to brief readers on the implications. Essentially, IVG technology would allow an individual to create babies using skin cells instead of eggs and sperm (eggs are very difficult to extract at scale). This means we would be able to do polygenic risk screening on thousands of embryos per child (rather than just a few). With this technology, we could do things like heavily select for potential genetic lines that have a strong impulse to have kids (all without genetic engineering). The ethics of this are not worth exploring because

as soon as someone has the technology and uses it in this way, their descendants will replace almost everyone else.

Artificial Womb Research and Development

Estimated Probability of Success: High (With a probability of negative outcomes)

Artificial wombs, if developed, would dramatically change both society and gender roles, potentially leading to a cascade of positive developments (in that they would make the process of gestation and childbirth truly egalitarian). Moreover, artificial wombs would dramatically increase the number of kids motivated families (like ours) could raise (as the marginal cost of raising a child is fairly low above the fifth kid).

Artificial wombs can dramatically reduce (though not remove) the ethical considerations around “government-created kids.” Governments already take over a lot of the responsibility for child rearing, with most developed countries offering government-sponsored child care in the form of school from (roughly) ages five to 18. When the cold, hard reality of imminent demographic collapse begins to take hold in semi-ethno states with a vested interest in a specific, low-birth-rate ethnic group—like South Korea, Japan, and the UAE—they may seriously explore this path. Nations such as China may attempt this as well, though they may not wait for the technology to begin creating state-sponsored kids (and utilize humans instead), making it all the more meaningful if this technology is developed quickly.

I also wouldn’t be surprised if we started seeing some companies or investors begin to produce and train children en masse when humans start to become more valuable due to their scarcity.

At present, the core problem that needs to be overcome involves developing a functional artificial human placenta. While there are occasional bursts in the research, it seems to occasionally undergo almost full decades with no advancement due to very low funding. If one wealthy donor just got the ball rolling on what looked to be a real solution, state-level stakeholders (like the South Korean, Japanese, and UAE governments) would likely be willing to see the initial momentum through. (For a good overview of the field, [check out the Wikipedia article](#).)

More Efficient Matchmaking

Estimated Probability of Success: Medium-Low

As mentioned above, the recent and profound shift in—and failure of—dating markets will exacerbate demographic collapse. Even just recreating old platforms that allowed for quick

multi-modal searches of large populations, like OkCupid used to, would have a measurable impact on marriage rates.

There is minimal utility in starting an entirely new dating marketplace when the positive effect will be small and apparently [people in the community](#) have already made an attempt. That said, if there are individuals in the community who are dedicated to having large families and have not found a partner/donor yet, the uniqueness of that desire might make it easy for us to custom match them with other unique cases.

Cultural Innovation

Estimated Probability of Success: High (With a probability of negative outcomes)

If children no longer yield instrumental utility to parents (e.g., additional farmhands) and many doubt that having more or any kids will make them happier—even when affordable childcare is pervasive—then some exogenous factor must come into play to motivate people to have children above replacement rate.

Historically, religion played this role, either by celebrating the act of having and raising kids and/or by discouraging or outright banning various forms of birth control (not to mention relationship configurations that haven't historically produced kids—e.g., gay marriage). It is nevertheless entirely possible to intentionally craft and adopt secular cultural attitudes that provide exogenous reasons to reproduce beyond replacement rate.

There are three fairly obvious ways to use cultural innovation as a tool to address demographic collapse:

1. Create intentional communities with family-friendly culture.
2. Encourage families to have lots of children and create a sustainable family culture (that transcends generations) encouraging high fertility rates.
3. Create novel educational systems that are more affordable and effective.

Community Interventions Fighting Demographic Collapse

While governmental interventions making childcare more affordable do not appear to slow or stop demographic collapse in isolation (see the above section on government intervention), offering affordable childcare within a culture that also celebrates having more than two kids and supports a broad range of family formats could plausibly produce significant increases in birth rates.

While this could be achieved via widespread government investment in cultural change (i.e., heavy propaganda campaigns) paired with universal free childcare and schooling, this could also be achieved through the far-more-feasible-and-less-dystopian creation of intentional communities, which would also have the advantage of producing a wider diversity of cultures.

We worked creating such a model through [Project Eureka](#)—an eco-friendly, pedestrian-first planned community format centered around an innovative lab school and shared childcare burdens among residents. We ultimately decided to move forward with only the lab school because we found no funding mechanisms in place for innovative, intentional communities (they're too heavy on real estate for venture capitalists and too risky for real estate investors).

That said, if independently wealthy individuals were to start their own intentional communities that help unique family structures have kids and raise them in a community environment, they could have an enormous impact on this problem. (If anyone is interested in spearheading this kind of solution, let us know so we can add you to the index and send interested families in your direction).

Family-Level Interventions Fighting Demographic Collapse

As mentioned above, if just one family has eight or more kids each generation for eleven generations, they will have more descendants than the current population of earth (assuming they don't start interbreeding after a few generations). The risk of this approach is that if only one family does this (as ours intends to), it would lead to a homogenous future, and homogeneity produces social stagnation and narrow perspectives.

We created this overview in part to inspire more people to create high-fertility families with strong, sustainable, prosocial cultures—and also to identify the other families working on this and add them to a central index to track their efforts intergenerationally and assist each other where applicable. If this post encourages you to think about having kids and you are looking for a place where you can have a large family affordably, we [created a guide](#)—plus we are happy to speak if you'd like to brainstorm, combine efforts, etc.

Given our confidence in our own efforts, the question for us now is: How do we preserve a world with diverse cultures, ethnicities, values, and approaches to life? One solution is to develop and share a playbook for crafting sustainable cultures, which can “gene edit” a culture to be more resistant to the memetic diseases that sterilize their populations. This is the topic of one of our next books, *The Pragmatist's Guide to Crafting Culture & Religion*. (The other, *The Pragmatists Guide to Governance*, is on building family offices and organizational/political governance systems with a focus on intergenerational fidelity—both books are intended to aid intergenerational culture transfer while still allowing for innovation and evolution.) If you find this concept interesting, please reach out to us, as we could always use additional thinkers and families who want to work on demographic collapse problems.¹⁷

Demographic collapse will not be fixed if we merely convince a few families to have a high birth rate. It is important that those families both have more kids and create cohesive cultures that

¹⁷ You can contact us through CollinsInstitute.org

can be passed down with fidelity through multiple generations ensuring a high birth rate across them. That means if you want to be one of the families working towards this solution, you need to be intentional about how you build family culture (the more diversity in these structures registered with the index the more we can learn). We personally live by a strict, secular religious structure with intentionally designed holidays, rituals, [a secular theology](#), governance systems, and the like—all intended to create a childhood and value system compelling and cohesive enough for our kids to want to recreate better iterations for their own children. (*We come from a [secular Calvinist](#) cultural tradition, meaning our unique approach may not be broadly generalizable to other families.*)¹⁸

What ultimately makes this solution compelling and tractable is that only a small handful of families need to successfully attempt this approach in order to create an outsized positive impact vis a vis the problem of demographic collapse (though when it comes to preserving heterogeneity in future human populations, the more the merrier).

Educational Interventions Fighting Demographic Collapse

Education, which is a product and manifestation of culture, plays a dual role in contributing to demographic collapse at present, but can with equal alacrity be leveraged to reduce its effects, simply by being less expensive and more effective.

Personally speaking, our most significant trepidation in having a large family is the knowledge we will not be able to subsidize our children's participation in one of the core gating mechanisms blocking access to positions of influence (elite education). We suspect this same concern might be preventing other prosocial secular families who might join the pro-natalist path to opt for small families instead.

Specifically:

1. **Right now, education is too costly, contributing additional incentives against having (many) kids:**
 1. By making education more affordable, we can lower the lower overall financial burden of parenthood and discourage fewer adults from having kids (or more kids).
 2. By making education more affordable, we can ensure children of large families are less likely to feel robbed of education opportunities due to cost (this feeling of injustice might make them have fewer kids themselves in an effort to secure high-quality education for their own descendants).

¹⁸ Anyone taking a serious crack at fixing demographic collapse within their own family is going to look really weird. In a world in which the predominant culture produces a below-repopulation birth rate, only “weird” groups that deviate from that culture will survive. It is natural for the dominant social group to attempt to ostracize and criticize the lifestyles of outsiders and weirdos; this is an evolved cultural immune system to prevent splitting or [cultural drift](#).

2. Today's education system does not equip people thrive as adults in the modern economy—let alone be successful parents:

1. If education, which plays a key role in imparting culture and values, imparted strong professional, psychological, social, and life skills equipping people to be highly self-sufficient people and capable parents, entire populations would be better equipped to have and raise children beyond replacement rate.
2. The present education system has not seen significant innovation since the dawn of the industrial revolution; it is not difficult to develop modern education models that better equip people for modern life. (Our [white paper](#) on this topic explores how this can be done.)
3. The legacy education system's goal of outputting broadly interchangeable units (graduates) of similar grades makes those economic units highly susceptible to automation. As AI advances, this outdated model gets easier and easier to outcompete.

This is one of the reasons we started [a new model of high-end education](#) designed to—we hope—produce superior results to the current system at a fairly low cost. (We'll go into this in another post.) Anyone who actively encourages innovation and development on this front can significantly contribute to this solution.

Key Uncertainties

- **AI Wild Card:** AI development is by far the biggest wild card in the realm of demographic collapse. A paperclip maximiser extinction event makes all worries of demographic collapse irrelevant while a benevolent AI super intelligence might also make demographic collapse irrelevant. Even current AI technology may significantly change the equation as it sees more use and begins to replace humans as economic units.
- **How soon will governments begin to intervene in more meaningful ways to fight demographic collapse?** Something like a heavy tax on childless citizens could, per extant research, make a meaningful impact on birth rates—governments that make the unpopular decision to instate such taxes may see lower declines than anticipated.
- **What demographic-collapse-driven existential risks do future generations need to take into account that we may not be considering?** Because it is difficult to imagine what it will be like to operate in a world with pervasive, systems-level collapse (crumbling, depopulated cities, threatened agricultural and industrial systems, globalization, etc.), we may be missing important preparatory steps necessary to the survival of future populations.

- **How feasible is intergenerational, family-level culture crafting?** While we are working on a playbook for sustainable, intergenerational family cultures, there is little research on tactics and elements that are correlated with high-fidelity intergenerational culture transfer.
- **Could populations stabilize?** It is possible that humans have some lower bound of fertility and things will pop back up above 2.1 across developed societies after reaching said trigger point. We do know that the drop in population caused by the Black Death was followed by population bounce: French monk Jean de Venette was astonished by the number of pregnant women in the streets. "Everywhere," he says, "women conceived more readily than usual. None proved barren; on the contrary, there were pregnant women whenever you looked. Several gave birth to twins, and some to living triplets." However, this reversal was very short lived (see [this write up](#) for a good discussion on this topic). There has not been a single instance of "apathy-based" birth rate decline reversing dramatically in the opposite direction (outside of instances in which women have lost egalitarian treatment) nor can we even imagine what the mechanism of action for such a dramatic reverse in trends might be (outside of the population stabilizing and grow to never before seen levels after susceptibility to prosocial memes has been bred out of it). For more evidence the population may not stabilize see the [section on the Rat Utopia experiments](#).
- **Genopolitics is Missing Something:** Our fears that traits like prosociality and openness to new ideas could be bred out of a population could be misplaced depending on a few poorly studied variables. For example, it could be that the primary thing that draws people out of high birth rate families is not their sociological profile but complete serendipity.
- **A Cure to Aging:** If we get an inexpensive cure to aging in the near future it could stop the above problems. Given that your average person cannot even get basic medical care right now this stretches credulity though it is possible depending on the mechanism of action of the cure—for example it might be possible to distribute it widely if it was in the form of a cheap to produce viral vector.

Demographic Collapse in a Nutshell

- Populations are falling in some specific geographic regions fast enough to potentially cause system-level collapses of economic and social systems in the near future.
- We are in the midst of a "cultural mass extinction" with many specific cultures and ethnic groups demonstrating fertility rates low enough to trigger extinction within a few generations, leading to a much more homogeneous future.
- Current birth rate trends suggest that traits on which civilization as we understand it depends, such as prosociality, are being differentially selected out of populations.
- [Current models predict that 183 of 195 countries](#) will be shrinking by the turn of the century, with most of the net producers of population growth left in Africa. A world with a



rapidly shrinking population could drive some organizations and state-level actors to change how they interact with those few countries in ways that could end up looking like new forms of indentured servitude.

Appendix

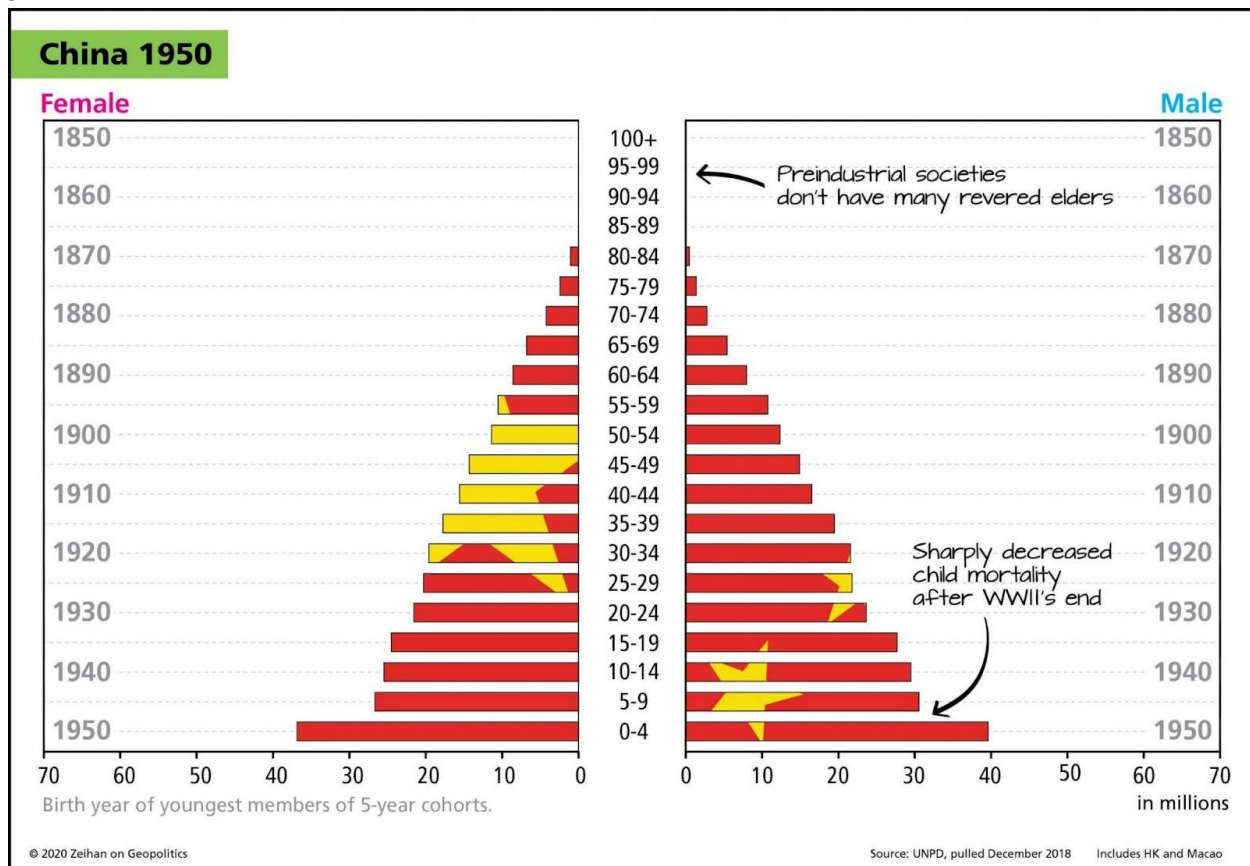
The appendix includes discussion on this topic by a few additional sources (other than just Simone and Malcolm Collins) such as Peter Zeihan and Hath, the pen name of one of the students at the Collins Institute.

Forces At Play

Section by Hath—Graphs from Peter Zeihan

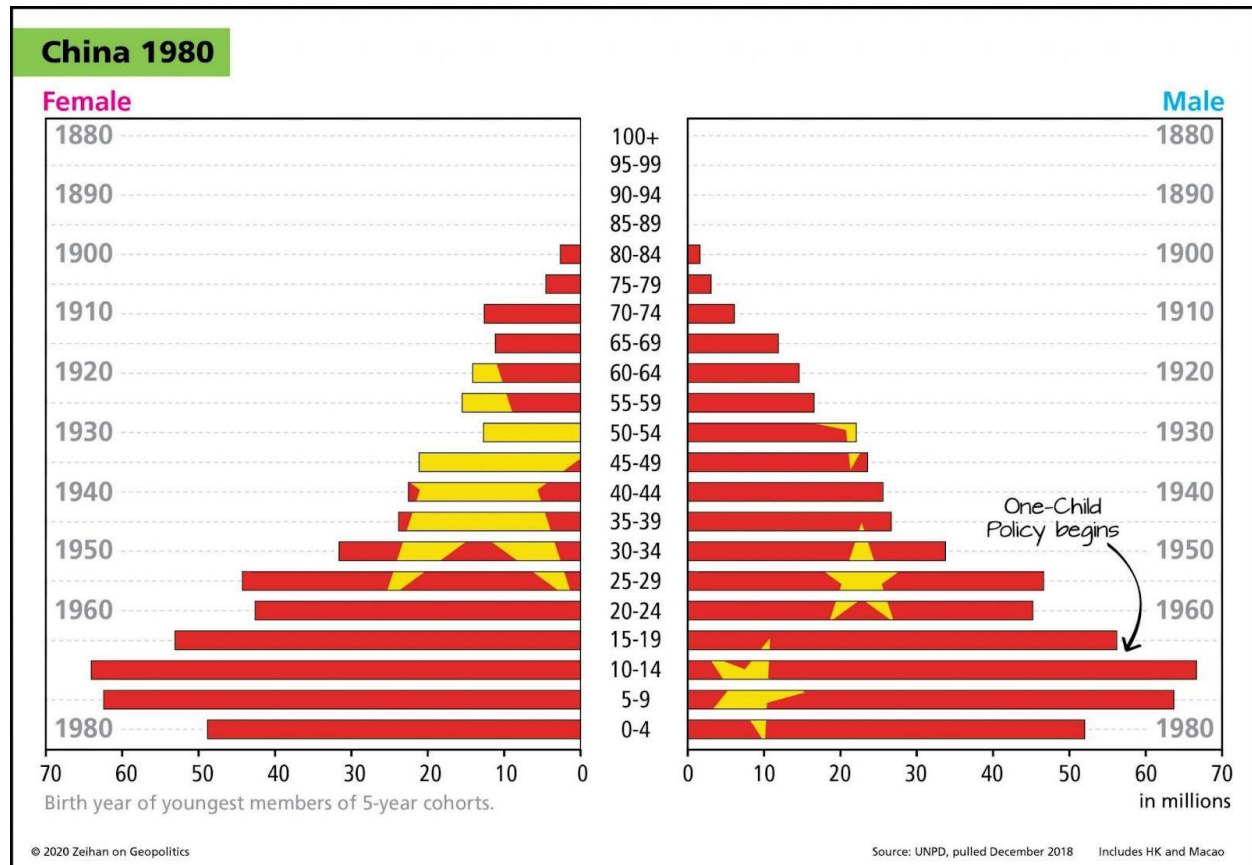
This is best introduced visually; the graphs show the skew in demography. I'll accompany the graphs with analysis on the skew and the consequences of said skew.

I'll use China as an example, though the trends for every other developed country in the world roughly match those in China. Here's a graph of China's population in 1950, marked by age and gender.



What is shown is notably a population pyramid. As generations age and die, their population cohorts become smaller. Until the last seventy years or so, populations have had a constant

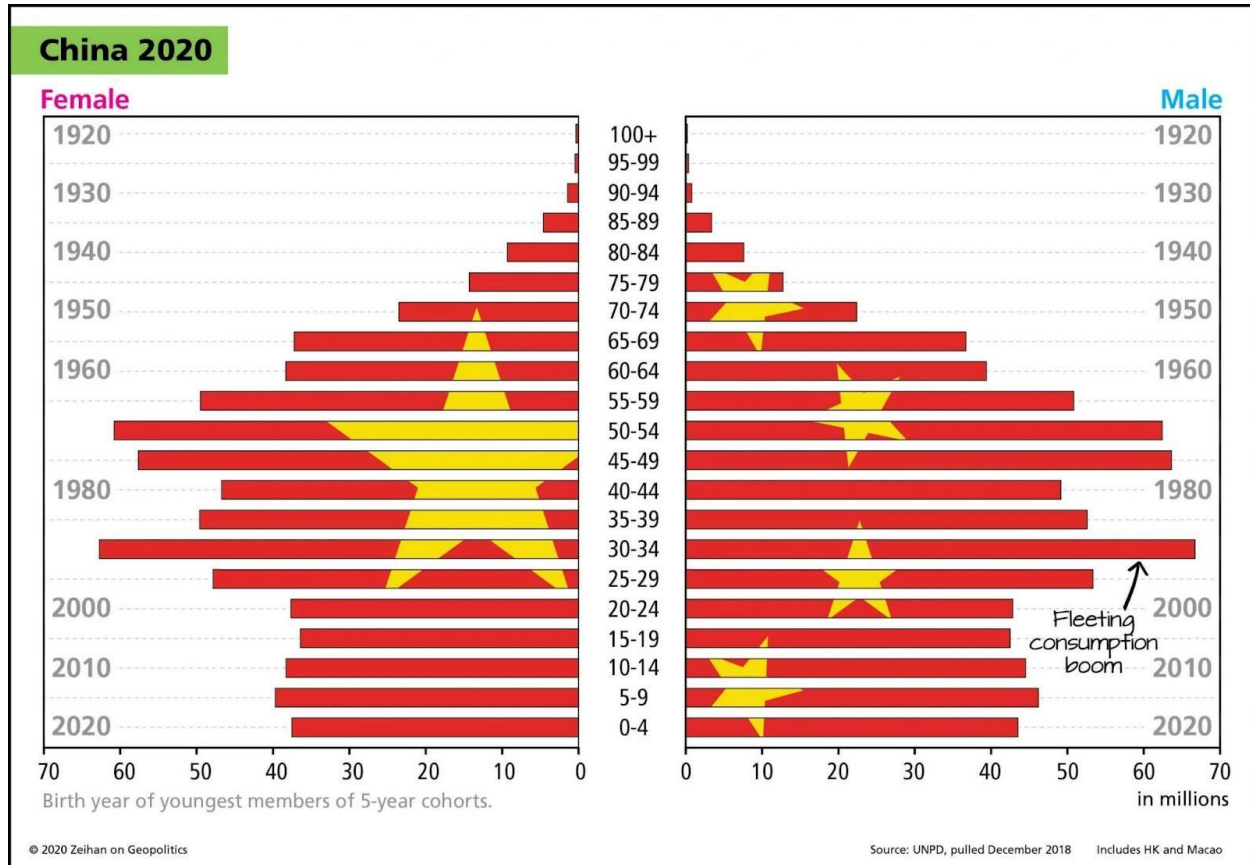
ratio of four children to three young adults to two mature adults to one elder. That's what makes the pyramid shape. Now, let's see a graph of China's demography in 1980:



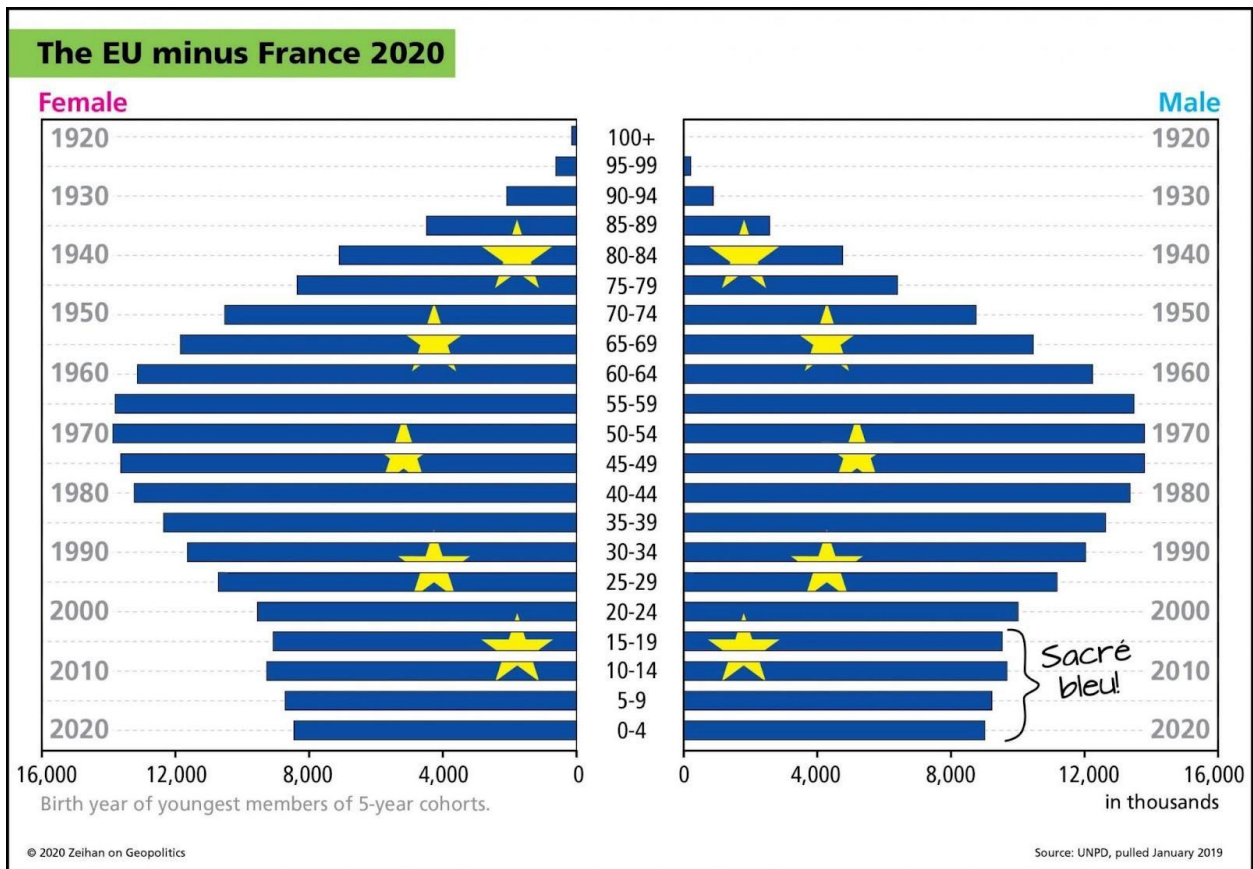
The pyramid shape is gone. After the end of WWII, China's birthrates soared, resulting in the large crop of people under 35 noticeable in the graph. This caused worries about population growth, so China implemented the Two-Child Policy limiting the amount of children a family could have, and then strengthened it to the One-Child Policy. At the same time, the Chinese were urbanizing; fewer and fewer Chinese were living on farms—where children were free, necessary labor—and instead the population was shifting to cramped cities where children were effectively luxury goods. This spike and decline in birthrates creates the skewed demographics visible in every developed country today; while other countries didn't have the pressures of the One-Child Policy, urbanization was enough to have a similar effect.

Why do the skewed demographics matter? Because different aged people contribute different things to the economy. Many demographers use the cohorts of children (ages 0-15), young workers (15-35), mature workers, and retirees as general population groupings, and I'll stick with those for this post. Children and retirees don't directly contribute to the economy, so the workers provide for them through taxation and direct spending in the case of parents. The young workers are mainly consumers and borrowers: They're spending on housing and children, while borrowing in the form of mortgages and student debt. Mature workers have mostly paid off their housing and have finished spending on their children, and so are mainly saving for retirement.

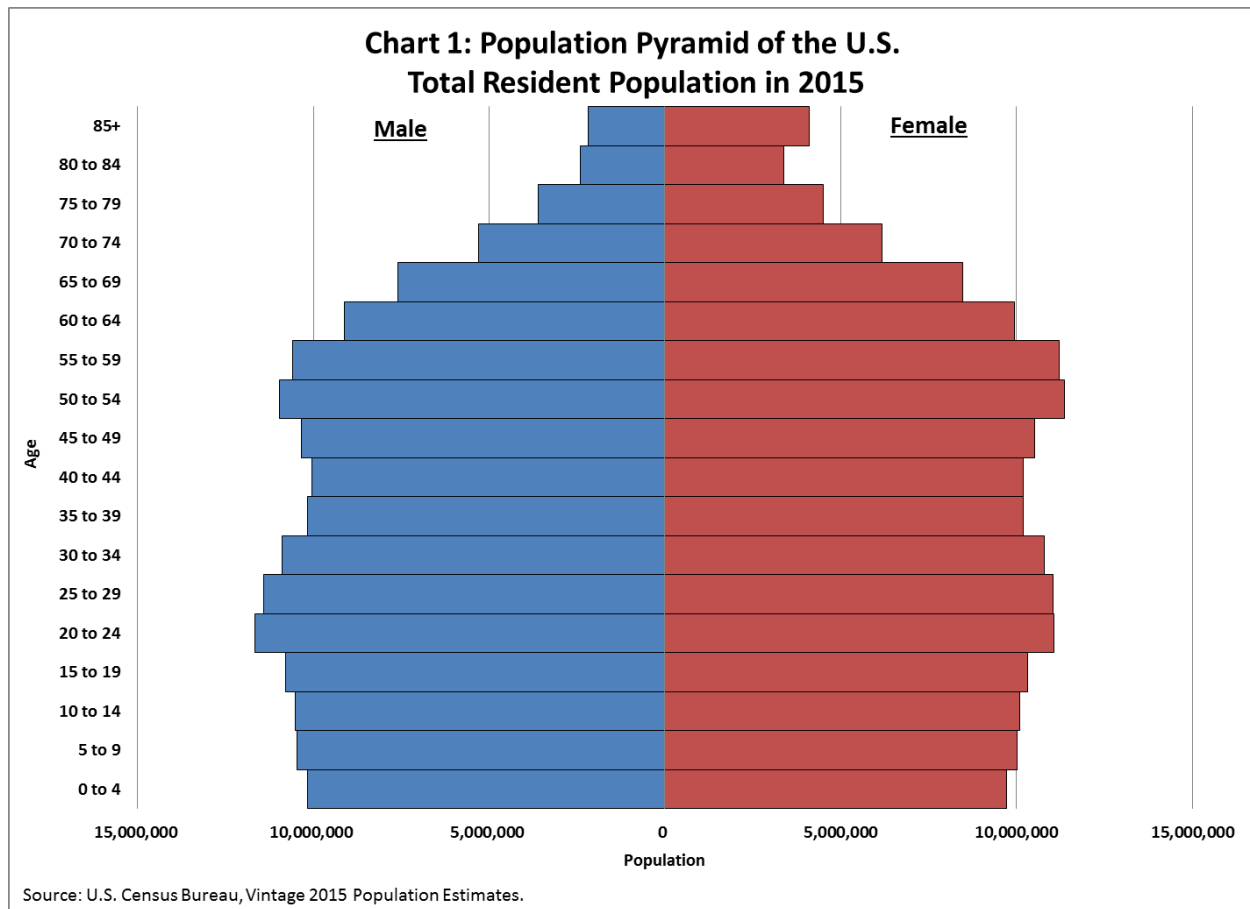
Mature workers' savings, invested in stocks and bonds, are a major source of capital. Historically, the ratio has been 4 children to 3 young workers to 2 mature workers to 1 retiree. That's the pyramid shape visible in the demography of 1950s China. However, the current ratio is closer to 1 child to 2 young workers to 2 mature workers to 1 retiree. Here's what that looks like:



The visible spikes in population at specific age levels means that, as those generations age, China's economy will visibly change. That 30-34 generation, marked in the graph as a fleeting consumption boom? When they age out of their young worker status, and then out of the workforce entirely, the replacement generation will be significantly smaller. This phenomenon isn't unique to China; it affects every single developed country. Here's the EU, which has it particularly bad:



The United States is the least skewed, but isn't much better.



On China

Section by Malcolm Collins

China is in a uniquely bad position due to what can be thought of as “demographic debt” they’ve accumulated. As noted above, any economy can be thought of as being comprised of three groups: Two are parasitic (the young and the old); one is productive (working adults). One of the reasons developing countries typically have an easier time than their already developed counterparts is they have a much lower percentage of old citizens. Through its one child policy, China cut out the other parasitic group as well: The kids. This allowed China to industrialize and become wealthy at a super rapid rate (with almost the entire population being in the productive class) but in a way that was inherently unsustainable (eventually the debt must be paid off). While China is now desperately trying to backtrack by encouraging higher birth rates, its population is not complying—to the extent that this effort is often cited as one of the drivers of the “laying flat movement”. ["Sorry, we are the last generation, thanks!" has even become a meme among the youth in China in response to government policies.](#)

Videos I recommend to best understand the severity of China's current economic situation include:

- [China's Major Tax Problem](#)
- [Why 50 Million Chinese Homes are Empty](#)
- [China Has A Debt Problem Three Times Larger Than Evergrande](#)
- [Why You Should Be Worried About China's Debt Crisis](#)

Peter Zeihan on Demographic Collapse

Section by Peter Zeihan (pulled him his work)

A lot of the tools that we have developed to regulate the economic system, most notably interest rates at the Federal Bank level, we're not sure if they're going to work anymore. The whole idea of interest rates is that you make the cost of borrowing higher, so that demand becomes more expensive, so that people and companies do less of it. For that to work, you have to have consumption as a primary driver in your economic system.

Most of the world doesn't have that any longer. Most of the advanced world hit the point of no return with their demographic aging back in the 90s, and places like Germany and Italy and Japan now have more people in their 50s and their 40s than the 30s and their 20s and so on. Now, in the United States it hasn't hit nearly as hard, but we still have this huge generation, the Baby Boomers, retiring and a very small generation, the Zoomers, who are coming into the system. Right now, in 2022, that's a shortage of 400,000 workers, and by 2034 that number will have increased to 900,000.

This is structural inflation, and this is a problem on the supply side. When you raise the cost of borrowing, it doesn't just impact people who are trying to buy a car or a destroyer, it also affects people who are trying to build out production, and the industrial plant and productive capacity and training new workers.

It's not clear to me whether in places where this demographic decline is advanced, such as Germany, if interest rates even work anymore, because you are now capable of strangling supply with it, and it doesn't do anything to demand because there isn't any.

The economic rules of the past may not apply anymore. Now, in [my latest book], I call this "The End of More"; the idea that every economic model that we have developed in the last 500 years, whether it's fascism or socialism or communism or capitalism, they were designed for an environment where the pie got a little bit bigger every year largely, because of population growth.

That's no longer true. So when I look at the problems that the U.S federal reserve is dealing with right now, they would like to get inflation under control, and interest rates are the tool they have.

But if we're in a world where the normal relationships between demand and consumption and supply and production are somewhat out of whack, and might not go back, it's not clear to me that they can raise interest rates to dampen demand without also crushing supply, because we've never had a significant problem on the supply side before.

Because we are now facing the greatest labor inflation in American history, raising interest rates might not be the right tool, and then it comes to the executive branch and that's a whole other discussion of whether the Biden administration is up to the challenge. That's my first topic; that the tools for managing our economy might not work anymore.

The Inevitable Economic Effects

Section by hath

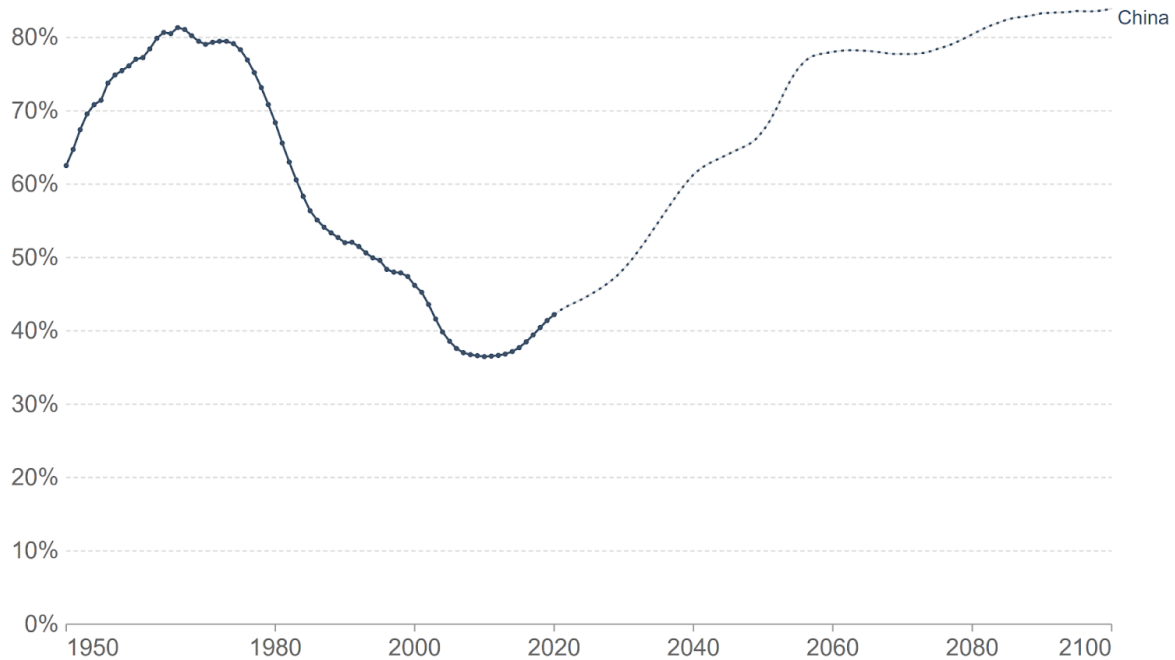
The retirement of the large, post-WWII generation (Gen X) will have multiple direct economic effects:

- Before retirement, savings are kept in the form of stocks, providing capital to the economy as a whole. When Gen X retires, and transfers their savings to less risky investments, the general flow of capital will dry up.
 - Note by Ben Hoffman (one of our editors): Modern monetary policy makes the mechanism complicated in an important and interesting way. I don't think getting the right answer here will be necessary to persuade effective altruists but it's worth thinking through. My best guess is that the Federal reserve will act to support the price of equities by increasing the supply of credit to pyramid schemes that can pretend future profitability. Wait lists will accumulate for non-essential goods, if automation hasn't actually made them easy to provide, while scarce essential goods will continue gradually shifting towards a command economy. Anyone with access to capital who can profitably employ large numbers of non-grifters will see sustained supernormal profits, like Jeff Bezos or (I predict) my friend Rahim.
- The workforce as a whole will shrink, because the generations coming into the workforce will be smaller than the generations leaving.
- There will be more dependents for fewer workers. China currently has ~42 dependents (retirees and children) per hundred workers; that number is forecasted to rise to 60 by 2040, and will continue to climb.

Age dependency ratio projections, China, 1950 to 2100

Our World
in Data

The age dependency ratio is the sum of the young population (under age 15) and elderly population (age 65 and over) relative to the working-age population (ages 15 to 64). Data are shown as the number of dependents per 100 working-age population. Projections to 2100 are based on the UN's medium population scenario.



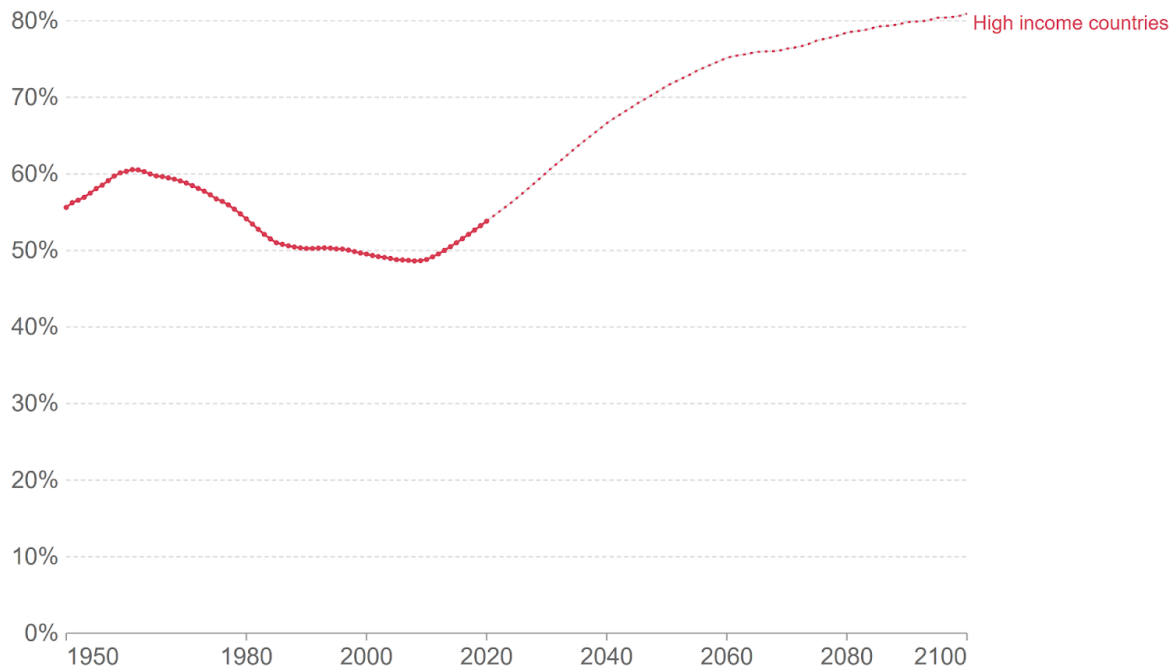
Source: United Nations – Population Division (2019 Revision)

OurWorldInData.org/world-population-growth • CC BY

Age dependency ratio projections, High income countries, 1950 to 2100

The age dependency ratio is the sum of the young population (under age 15) and elderly population (age 65 and over) relative to the working-age population (ages 15 to 64). Data are shown as the number of dependents per 100 working-age population. Projections to 2100 are based on the UN's medium population scenario.

Our World
in Data



Source: United Nations – Population Division (2019 Revision)

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As for what we should actually expect to see in the economy as a result of this: The parts that I (hath) understand on an intuitive level are:

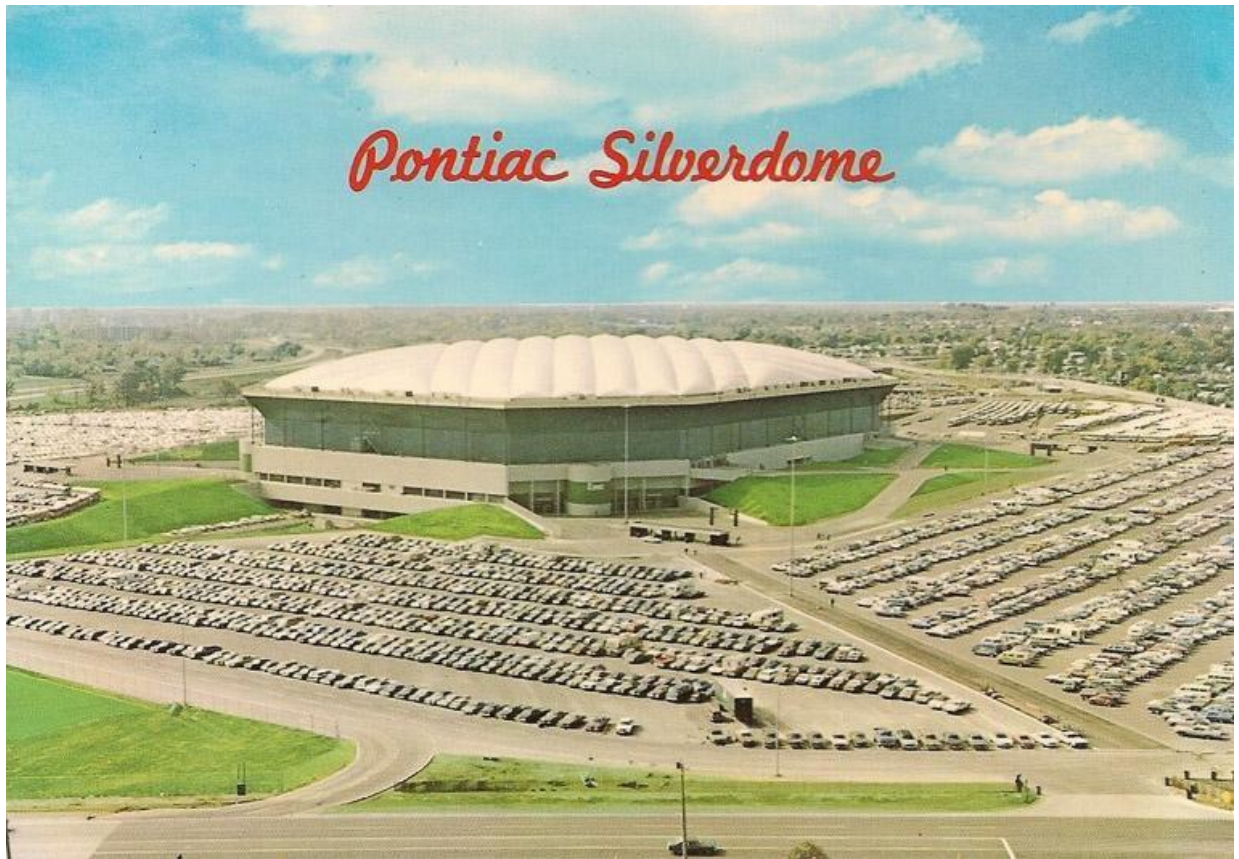
- Increased taxation and general burden on the workforce, as it supports more dependents with fewer workers.
- Less capital means it's harder to secure loans or investment of all kinds.

Images of Detroit After Population Decline











The following pictures come from [this interactive article](#) from Strong Towns.
2009 Hazelridge Street



2019 Hazelridge Street



2009 Luce Avenue and Sparling Street



2019 Luce Avenue and Sparling Street

