

Global Fertility: Forecasts and Impacts

An analysis of both fertility rates and their consequent impacts across the world

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Executive Summary

Cameron Fenwick

This public policy report aims to analyse fertility rates alongside their impacts on a diverse range of countries, ranging from multicultural to homogenous, developing to developed, and old world to new world.

With each of the seven countries we covered, we sought to project future fertility rates. This was done by modelling historical fertility rates, looking at quantitative indicators which have been linked to fertility rates such as education and income level, and examining qualitative and bespoke factors unique to each country. All this information is included in the “**Fertility Forecast**” section of each country’s report.

We then explored how the projected fertility rates impacted each of the countries we covered. From examining the economic and social impacts of an ageing population to studying how demographic shifts influence multicultural polities, we tailored each analysis to the unique circumstances faced by each of the individual countries. All this information is included in the “**Assessing Impacts**” section of each report.

However, we firmly believe that although each country is deserving of a bespoke analysis, broader conclusions can be distilled and applied to countries facing similar issues. Argentina’s economic and cultural north-south divide causing class-specific trajectories and disparities in fertility can also be observed in other South American countries. Impacts faced by Malaysia’s inter-ethnic disparities in fertility can also be seen in neighbouring Thailand and the Philippines. All this information is included in the “**Extrapolating Impacts**” section of each report.

Lastly, we explored potential solutions to reverse lowering fertility rates using government policy. This article, written by Levi Cursham, explored the various aspects which would need to be included in a successful parental leave and childcare policy.

Taken together, this public policy report aims to paint a broad picture of the current outlook on fertility, the potential impacts of such projections, and solutions to mitigate the harmful consequences of low fertility. We hope, through our approach of selecting a wide variety of countries, that any reader regardless of background or nationality will be able to learn something relevant from this report. Through our unique case-study centred approach, where we distilled and applied conclusions to similar countries, we sought to provide valuable and relevant information to far more than seven countries.





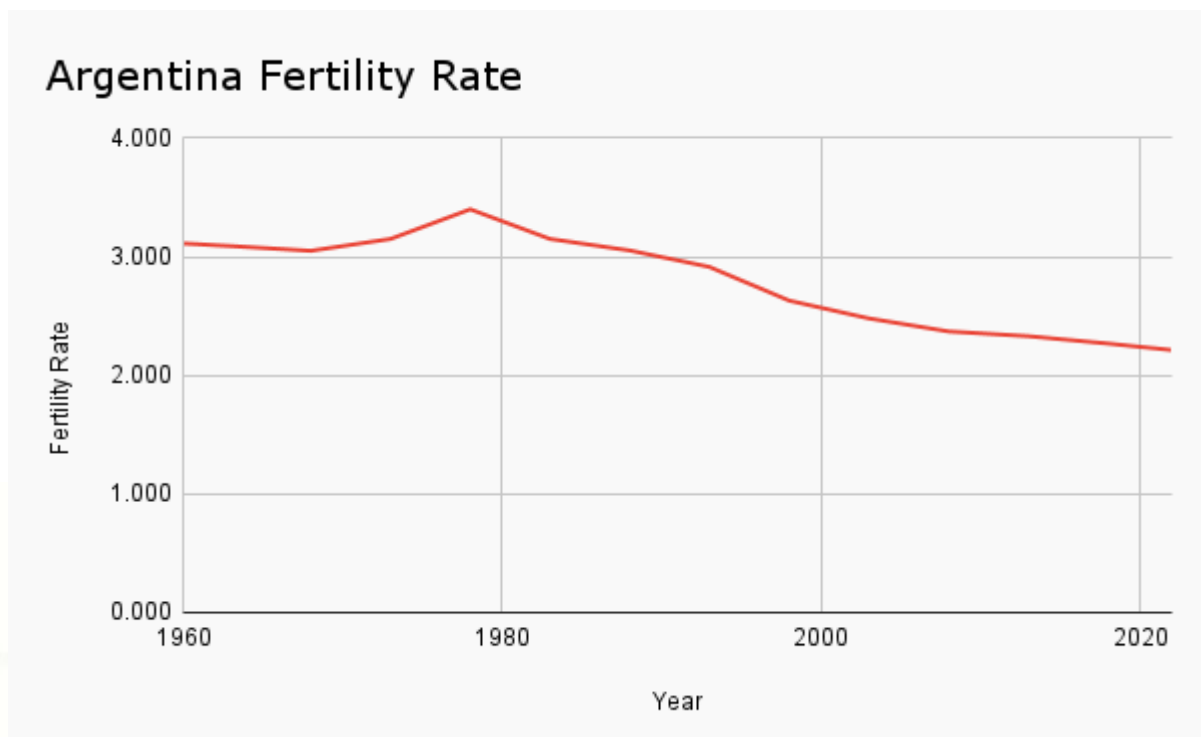
Argentina

Emma Maria Dondero

Summary

Argentina has been experiencing a slow but steady decline in fertility rates over the last several decades, marked especially by a large decrease in adolescent and undereducated mothers. It is [predicted](#) that the country will reach a replacement level of 2.14 and 1.93 in 2030 and 2050 respectively, bringing the country to well below the replacement level (2.1) by 2050. Coupled with lowered mortality rates, the country will face difficulties with a rapidly ageing population.

Argentina's Fertility Rate (1960 - Present)



Source: Macrotrends

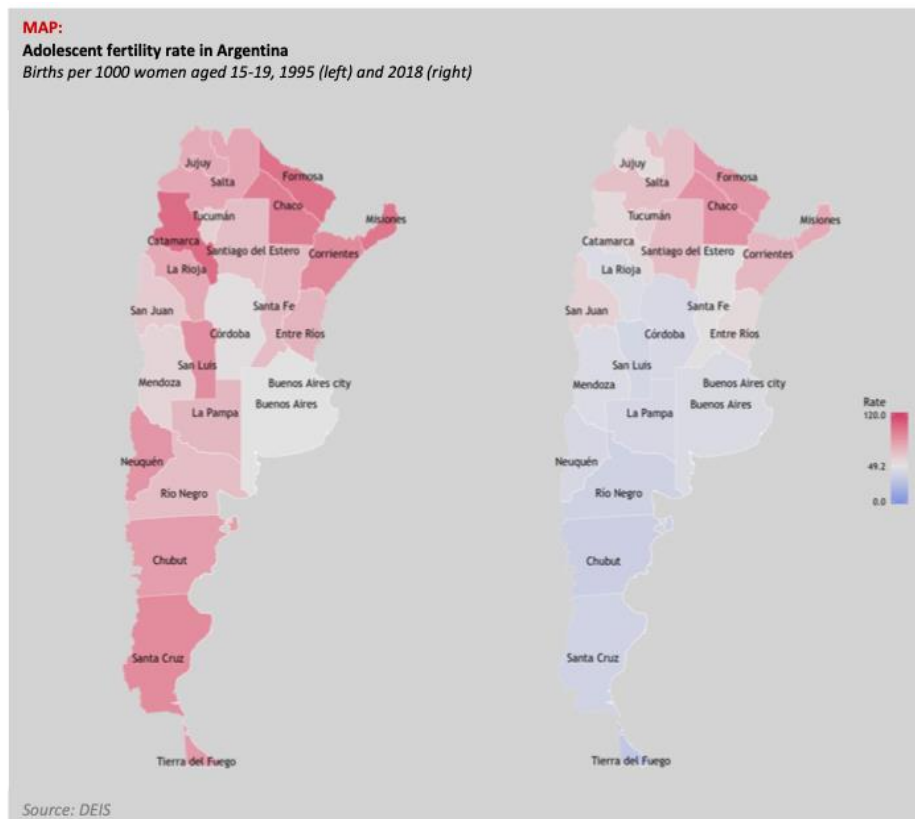
Fertility Forecast

1. Economic Indicators

Stratification between the northern (poorer) and southern (richer) parts of the country is causing the slower decline in rates, as they are higher in the north. The potential of instability in the Argentinian economy has been cited as a possible reason for their slower slope of fertility decline.



- The regions of Argentina are experiencing different fertility phenomena in line with their respective economic development. In considering previously established fertility patterns where (generally) development goes up and fertility rates go down, the south and centre of the country, including the capital of Buenos Aires, are further along in the process than its less urban and poorer northern counterparts. As seen in the map below, from 1995 - 2019, the adolescent fertility rate has dropped significantly in the south and centre of the country while it has moved more slowly in the north.



- On average, [women and girls in the northern regions](#) marry earlier, have higher rates of teenage and child pregnancy (15-19 years old, and 10-14 respectively), and have higher rates of pregnancy repetition whereby an individual has one or more children after her firstborn. [In 2018](#), the child fertility rate in the northeast province of Formosa was 5.2 compared to the national average of 1.4.
- [In the first half of 2021](#), poverty was measured at 40.6% of the population, with the population of those living in extreme poverty rising and with much of the previously-lower middle class falling into poverty due to stronger government assistance for those already below the poverty line. While in central Buenos Aires and southern Patagonia, poverty dropped in 2021 as the rest of the country faced increases, with the [highest](#)



[percentages of 45.6% and 44.7% in the northeast and northwest respectively](#). Although Argentina's national statistics bureau reported a [3-point decrease](#) for late 2022 and onward, the poverty rate will continue to fluctuate as the country deals with high inflation.

- Argentina's current GDP is [\\$490bil](#) USD, which indicates a 10.3% growth rate from the country's COVID pandemic-induced drop of 9.9% the year prior. Despite this growth and apparent pandemic recovery, the country is undergoing high inflation and debt repayment issues, which it has been dealing with for several decades [as part of frequent boom-bust cycles](#). The country has been in a [downward recession cycle since 2018](#).
- Therefore, even though Argentina is [the third largest economy in Latin America](#), some argue that there is a level of economic instability affecting fertility patterns. Research has shown that, within Latin America, high levels of unemployment [delay or reduce fertility](#) as women choose to reproduce when they are financially more able. The same research found that higher economic growth was linked to a higher birth rate.
- Within Latin America, [including Southern Cone countries bordering Argentina](#), research has shown that reproductive changes in the population happen differently than in previously established patterns in Europe, and often follow patterns more consistent with social class as is seen here in the difference between northern and southern/central Argentine fertility rates.

2. Social Movements and Cultural Impact on Public Policy

Since 2015, Argentina has led a grassroots social movement that has pushed for women's rights, including domestic abuse protections, reproductive rights, and femicide monitoring; this movement is not only credited as a cause for several social policy changes but has also made an impact globally.

- In the last seven years, there has been a huge, internationally-reaching grassroots effort to protect women against domestic abuse, promote women's reproductive health, advocate for abortion rights, and open discussion on traditional gender roles within the country that has resulted in several tangible policy changes. Following the murder of 14-year-old pregnant Chiara Paez by her boyfriend, over 200,000 people protested throughout the country under the "Ni Una Menos" ("Not One [Women] Less") movement and their advocacy has continued to the current day.
- [In the years following the marches](#), Argentina has legalized elective first-trimester abortion, improved femicide monitoring and data recording, and expanded free legal services for women facing domestic abuse. In 2019, the [Ministry of Women, Gender,](#)



[and Diversity](#) was founded to further develop policy plans and protections for women and girls.

- There have also been several [educational efforts](#) in the form of public campaigns, private workplace training and mandatory training for government workers.
- Stratification between the north and south/central persists in this case, with access to [abortion being more difficult](#) in the northern (and heavily Catholic and/or evangelical Christian) parts of the country. Likewise, while sexual health education (including education on contraceptives) has been pushed by the Argentine government, some heavily Catholic northern provinces [have historically pushed back](#) and refused to follow through on religious grounds.
- Argentina has [some of the highest rates](#) of in vitro fertilisation (IVF) and assisted reproductive technologies (ART) by population in Latin America, and laws that recognize the right to fertility treatments as universal (including [governmental subsidies for IVF](#)).

3. Educational Level of Women

Argentina has made many legal improvements for women and girls' access to education that have aided in the declining fertility rate.

- The fertility rate of undereducated women is on a decline with [the gap closing in the fertility rate between higher educated and undereducated women](#).
- Starting in the early 2000s, Argentina has progressively passed several [laws](#) expanding the services and legal protections of young women and girls' educational rights. These include mandating secondary education, expanding access to education on sexual and reproductive health, and mandating school flexibility for student mothers to accommodate childcare needs.

4. Median Age & Mortality Rates

With a decline in fertility rates and a decline in mortality, the median age in Argentina has been rising steadily for many years.

- The median age [has been steadily rising](#) for several years due to improvements in healthcare and overall development, with the mortality rate steadily declining as well.
- In Latin America in general, and as is the case with Argentina, the median age is [rising at a higher rate than that of European countries](#) that had undergone a lowering fertility/lowering mortality transition earlier. This means that the changes that come



with this transition will be more rapid and would require swifter action than in European countries that had gone through the transition more slowly.

Assessing Impacts

Pensions

With the ageing population and lower workforce amongst the population aged 18-65, the pension system will likely face stress in terms of the number of distributive resources available. In Argentina (and amongst its Southern Cone neighbours), [a high percentage of work is informal](#), meaning contributions to the pension system are often lowered and a significant amount of informal workers are at risk of poverty as they approach older age. A significant adjustment would be necessary in order to keep the elderly out of poverty, especially women who traditionally have lower contributions due to having less time in the workforce on average in comparison to men. This also results in [higher fiscal liability](#) on the part of the government.

Care of elderly dependents

As the median age rises and the population of available caretakers lowers, difficulties in elderly care are predicted, as elder care is traditionally handled through informal family resources (often by women in the family). Along with the aforementioned pension risks, with the current state of public policy, the ageing population is at an increased risk of precarity with respect to day-to-day care.

Healthcare spending

With the median age rising due to lowering fertility/lowering mortality, healthcare systems will need to change to account for the higher and more frequent costs associated with older populations. Argentina in particular spends the [lowest percentage of its GDP](#) on healthcare out of any Latin American country.

Workforce & “demographic dividend”

Lowering fertility and mortality rates result in a period of time whereby a country receives a “[demographic dividend](#)” from having a higher population within the 18-65 age range and a lower amount of dependents under 18 and above 65. Argentina is currently undergoing that period but will lose this advantage in the years to come as the 18-65 age group dwindles with the lowered birth rate. This means a smaller consumer base, a smaller workforce, more dependents in the ageing population with more needs, and, in general, less productive capabilities to compete in the global marketplace.



Extrapolating Impact

The extrapolating impact on surrounding countries can be looked at most broadly on the level of Latin America, with the Southern Cone countries (Brazil, Chile, Paraguay, Peru and Uruguay) showing the most similarities to their neighbour Argentina. The impact can be extrapolated using the following indicators: GDP and economic influence, differences in indigenous populations, existing social policy, and existing labour force demographics and organisation.

With respect to GDP growth, and with the understanding that economic effects are more diverse than GDP impact alone, there is a pattern where wealthier Southern Cone states (Chile, Uruguay, and Brazil) are experiencing lower fertility at much faster rates than their poorer counterparts (Paraguay and Bolivia). Furthermore, [Brazil, Chile, and \(to an extent\) Uruguay](#) are experiencing steeper declines than Argentina; while the countries have not been without their own economic concerns, they do not have the same history of economic trouble, boom-bust cycles, and high inflation issues as Argentina. In terms of the effects of economic and social stratification on fertility rates, it was previously noted that Argentina has a divide in the fertility rates of wealthier vs. poorer women and higher-educated vs under-educated women. In the case of Argentina, this is also highly regional, with southern and central parts forming the “wealthier, more educated” portion and the northern counterparts as their opposite. A [study](#) of Mexico, Bolivia, Brazil, Chile, Colombia, and Paraguay similarly found that women followed “class-specific trajectories” when it came to fertility and that the lowering birth rate in each case was driven by the declining fertility of lower-class women (as is found in Argentina). Therefore, it is possible to extrapolate that within the region, GDP and economic stability will have an indirect relationship to fertility rates and that the results of class stratification can interfere with this relationship. Where class stratification follows patterns of geography and there is a “north/south”-style divide, the fertility rate can be similarly affected. Lastly, amongst Latin American countries with declining birth rates, undereducated women with less economic means can be extrapolated to be the cause of a significant part of the decline.

As mentioned, Bolivia and Paraguay have the slowest declining fertility rates, lowest GDPs, and the highest fertility rates out of the Southern Cone countries (and [out of all of South America](#), except French Guiana). Bolivia also has the [largest population of indigenous peoples](#) out of the Southern Cone countries with 48% of the population identifying as indigenous (compared to approximately 12% and 2% in Chile and Argentina respectively, for example). In Paraguay, thirty-four per cent of the population speaks only Guaraní and indigenous women [reproduce at a rate much higher](#) than their non-indigenous counterparts (and have much lower rates of education). Oftentimes, governments are [less responsive](#) to needs in indigenous communities whereby community members might not have equal access to reproductive



healthcare, education, or job opportunities. Language and culture barriers might also limit access to materials on reproductive health. Some South American countries have their indigenous populations living in high numbers on reserves, or in remote mountain or Amazonian biome areas. Indigenous people across South America often have lower household incomes and [face extreme poverty](#) as much as 2.7 more likely than their non-indigenous counterparts. It is possible to extrapolate that countries with relatively high percentages of indigenous people can find themselves with higher social, economic, and geographical stratification leading to a substantial effect on birth rates on a country level and within the country. Lastly, as with cultural and economic cleavages, religious influence can affect birth rates on the same levels, especially when dispersed in a geographic divide, like in the case of Argentina.

As with Argentina, much of the Southern Cone and greater Latin American labour market is [informal](#), equating to a possible issue in the coming decades when there are millions of elderly people who have not formally contributed to the pension system but need assistance. Similarly, a healthcare system capacity overflow is a future possibility in the absence of reform. [According to the IMF](#), in the next 20 years, Latin America as a region will need to have the highest increase in healthcare spending globally in order to cope with its ageing population. While many Latin American countries have social policies such as maternity leave in place, [research has shown](#) that access to formal maternity leave is only available to a relatively small group of women engaged in formal labour. It is yet to be determined what effects the expansion of these policies might have, but in theory, it can contribute to an increase in birth rates if women do not have to choose between a career and raising a child. On average, the [“demographic dividend”](#) in Latin America is projected to end within the next three years, marking a turning point where the dependent population below 15 and above 65 will grow more rapidly than the working force population. As with Argentina, much of Latin America will have to commit to serious pension, healthcare, labour, and other social policy reform in order to adapt to these changes.

On the positive end, lowered fertility rates in Latin America have been found to [reduce poverty](#) for a number of reasons. For example, smaller families have more resources to share per capita (including income to spend on education and healthcare), find it easier to participate in the workforce or to migrate elsewhere, and have more labour opportunities amongst a smaller pool of competitors.



United States of America

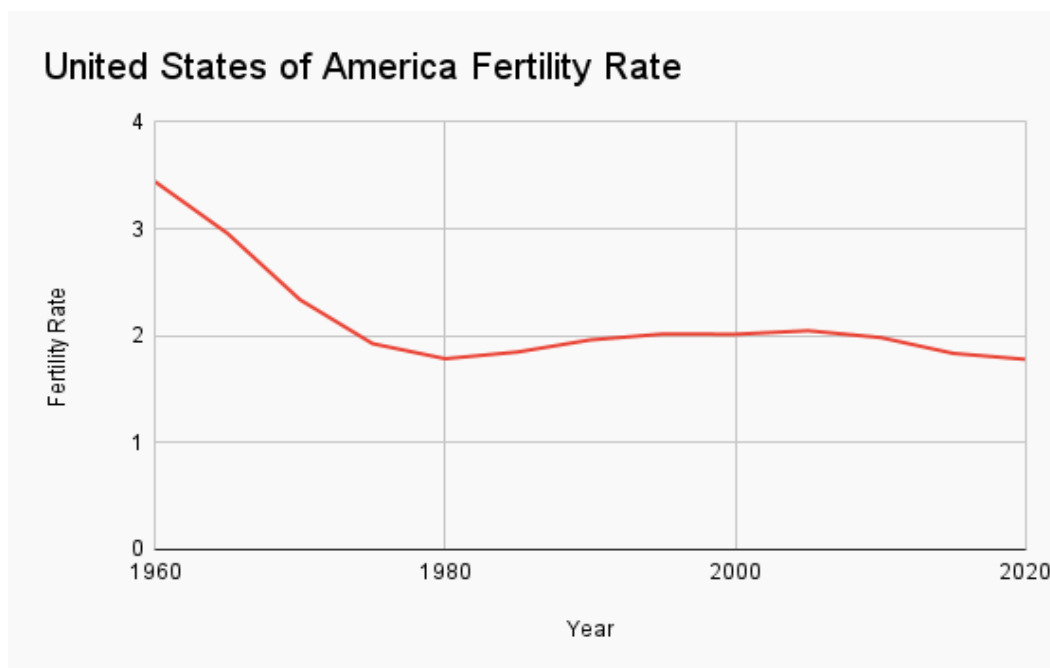
Oscar Mackay

Summary

The United States' population has recently experienced a slowing growth and total fertility rate (TFR), according to the [2021 US Census Bureau](#), which recorded a 0.1% annual growth (the lowest in its history) since 2011, as well as population stagnation throughout the decade. Although [Covid 19 may be to blame](#) for the recent slump, the increase in deaths brought on by America's ageing population, and [tightening restrictions on immigration](#) under recent administrations have slowed population growth considerably. Simultaneously, the TFR has [reduced from 3.7](#) in 1960 to 1.6 in 2020. However, whilst 2022 did see an annual increase of [0.6% \(1.778 to 1.782\)](#), and with predictions from the UN that it will reach 1.807 by 2050, this is well below the 2.1 replacement level. Consequently, population growth has slowed, although it will not reverse. Projections [forecast a growth of 79 million](#) by 2060, surpassing the 400 million threshold by 2058, with the primary driver for growth not being a natural increase but immigration. This sets the US apart from other developed countries that will experience little increase and even decline in population in the coming decades. Moreover, the composition of America's population will also change dramatically as it will experience large ethnic diversification, especially amongst younger cohorts - by 2060, [one-third of children will be non-Hispanic White](#), as well as undergoing ageing, and by 2034, there will be [more people aged 65 and older](#) than children. Inter-state migration will also change the political makeup of proportional institutions, which combined with the social and economic knock-on effects of America's changing demographics, will produce a United States rather different from the one now.



USA's Fertility Rate (1960 – Present)



Source: Macrotrends

Fertility Forecast

1. From a historical point of view

The US is experiencing one of its worst slumps in growth in its history.

- The birth rate of the latter half of the 20th century [averaged 24.4 per 1000 people](#) whilst only 13.3 in the first half of the 21st century, indicating a much slower population growth for America's future.
- Arguably factors that caused similar population slumps in the past ([population growth below 1%](#)), such as the Spanish Flu epidemic (1918-19), the Great Depression (1930s), and oil crises and Cold War fears (1970s and 1980s), are comparable to factors that are responsible for the recent trends - Covid 19, the Great Recession (2008-9), and rising prices of fuel brought on by the war in Ukraine. It is clear that at times of uncertainty and economic stress, population growth and fertility rate decline.
- But whilst events and current political and economic climates can cause population growth and fertility rate to decline, [social trends and changes in attitudes](#) in America have also had an impact. A fall in marriage rates and a movement away from core family living arrangements, an increasing number of women in higher education and



the labour force, the emergence of social insurance, and the contraceptive pill have all impacted these rates.

2. Social Factors and Attitudes on Immigration

One of the most important social factors, however, which indicates a slowing birth rate and TFR, is the US' ageing population.

- [By 2030, the Baby Boomer generation](#) will be over 65, with 20% of Americans reaching retirement age. This age group bulge will [increase the 38.5 median age to 41 by 2050](#) and further slow population growth as this growing portion of the population will be unable to have children and the higher number of deaths will begin to diminish America's natural population growth. The low fertility rate will exacerbate this issue as young people may struggle to care for the elderly.
- Yet despite the slowing population growth, the US is still expected to [grow by 79 million by 2060](#). As the natural increase (difference between births and deaths) has suffered severely due to the ageing population, [immigration will become the primary driver for population growth](#), reaching an annual rise of 1.1 million, compared to an annual natural rise of 1 million, in 2030.
- However recent external immigration has been impacted by [restrictive immigration policies](#) under the Trump administration and a reluctance from the Biden administration to reverse them, due to fears over a xenophobic backlash from the centre and right. Moreover, a reduction in immigration from Latin America as their economies grow, and covid lockdowns all over the world have caused immigration into the US to take a hit. Yet projections expect immigration levels to bounce back and will allow a labour influx to replace the ageing domestic population.

3. Economic Indicators

Alongside social factors for the recent decline in population growth, economic conditions are also indicators of the current trends.

- In countries where the [GDP per capita is above \\$10,000](#) a year, women tend to give birth to no more than two children. With the US becoming richer - its [GDP in 2021 was \\$23 trillion](#), an annual [growth rate of 5.7%](#), with [\\$61,284 per capita](#) and less than [2% of the population living under \\$5.5 a day](#) - it will follow this trend and see its fertility rate slow down.
- [In the US, as in many other richer countries](#), time is costly and individuals have less of it to spend on childcare. As children require more education in order to be successful,



and with low mortality rates, parents may opt to focus their limited resources on fewer children.

- Combined with the [rising costs of childcare](#) proportional to inflation and income, it is these economic factors that have led to a [lower desire](#) for Americans to have children, especially [amongst younger Americans](#), and a [growing gap](#) between the number of children they say they want and the number they actually have.

4. Educational Level of Women

Another indicator of fertility rates is education levels.

- As with rising wealth, the increasing education of women is often synonymous with decreasing fertility rates. American [women with high levels of attainment in education](#), such as a bachelor's degree have a lower TFR of 1,284 per 1000 and an average of 1.3 births per woman in this category compared to women with a 12th-grade education or less who had a TFR of 2,791 and an average of 2.8 births.
- This has seen a gradual increase in the [employment to population ratio for women to 55.5%](#) (before the pandemic), contributing to the slowing rise of TFR.

Assessing Impacts

Domestic Interstate Migration

The effects of the social, economic, and education indicators and the slowing TFR and population growth have already begun to impact the US. Changing population demographics, brought on by economic and social factors, such as domestic migration, have already begun to change the political landscape. Such migration is often a result of the higher living costs and competitiveness, especially in raising children, and the stricter Covid 19 restrictions in metropolitan areas and major cities. States with the [largest population losses](#), New York (319,000), California (261,000), Illinois (113,000), as well as Washington DC which lost 23,000 domestic migrants, are home to some of the most populated cities in the US and have registered increasing outward migration in recent years, with a peak in 2021. It is clear that Americans are migrating towards cheaper and quieter cities with more open spaces in the American Sunbelt. States which saw the greatest population growths in 2021 - Texas (310,000), Florida (211,000), and Arizona (93,000) - were leaders in domestic in-migration and offered lower costs of living. Unsurprisingly, this domestic migration has [political effects](#) that are beginning to impact the composition of America's political institutions. The increasing populations of the South and West Sun Belt states have altered apportionment and granted additional seats to Texas, Florida, Arizona, Georgia, Colorado, Nevada, and North Carolina at the expense of others. It has also granted these states larger clout in the Electoral College. Yet



whilst this has consistently benefitted Republican candidates since 2000, the demographics have changed in ways that will soon shift these states towards the Democrats, the effects of which will be seen in upcoming presidential elections as metropolitan Democrat voters migrate to traditionally Republican areas.

A 'Greying' America

Shifting demographics will also impact America economically and socially. [By 2060](#), America will see 95 million older adults but only 80 million children. The ageing population will shift America from a youth-dependant population to an old aged-dependant one meaning there will be more working-aged people (18-64) supporting people over 65 than people under 18. The US Census Bureau predicts that for every 100 working-aged citizens, there will be 76 dependants, of which 41 are aged over 65. Although total dependency ratios are projected to be no higher than they were in 1960, the rise of old-age dependency ratios will affect Social Security beneficiaries, retirement age, and expectations of federal and state benefits, increasing demand for more federal funding and attention on social policy.

The implications of slumping population growth are vast. The retirement of the large boomer generation alongside persistent low TFR will [pose a challenge to continued economic growth](#) and enhance tax burdens on young people, decreasing their desire to have more children, thus causing the TFR to suffer further. Slow and shrinking population growth [stagnates the economy](#) resulting in mentalities that can ironically make the pursuit of pro-growth policies difficult. For example, stagnant regions may be resentful of immigration as they are perceived as a threat to scarce business and job opportunities even though immigration offers the best chance for population and economic growth.

Policy Objectives

Whilst the [US government strongly opposes](#) coercive population programs, pro-growth policies are pivotal for recovery. A pro-natal and pro-family environment [should be created](#) through peacetime policies such as ample job opportunities, low taxes to make family formation affordable, and especially for women, opportunities to re-enter the labour force after temporary leave for childbearing. This being said, the US' population is not yet in decline but with its growth and TFR slowing and with an ageing population, America could face difficult times in the future.

Extrapolating Impact

As in the US, other developed countries are seeing decreasing fertility rates for similar reasons such as ageing populations and increasing costs of childraising. This will lead to a [decline in population](#) across the developed world after 2040. Yet the US' population will continue to rise (although at a slower rate) due to immigration, which will be more robust than



in other economic powers in Europe and Southeast Asia. Countries like Japan and Germany will struggle to offset their declining population even with more immigration and will eventually see population decline. Moreover, whilst [immigration may slow down population ageing](#), it will not cancel it out - immigrants age too - and so the 'greying' of the developed world is inescapable, inevitably reducing its TFR.

Other federal states are also observing domestic interstate migration as people move away from busy metropolitan areas to cheaper and quieter ones, often as a result of economic factors. Naturally, as people move, they bring their politics with them, consequently altering the political makeup of the state, especially in ones where social and health policy is proportional. In Australia, [over 30,000 Australians moved to Queensland](#) in 2020, leading to many contested federal seats as political views diversified. As with America, this increases the TFR for individual states at the expense of others but does little to change the country's overall demographics.



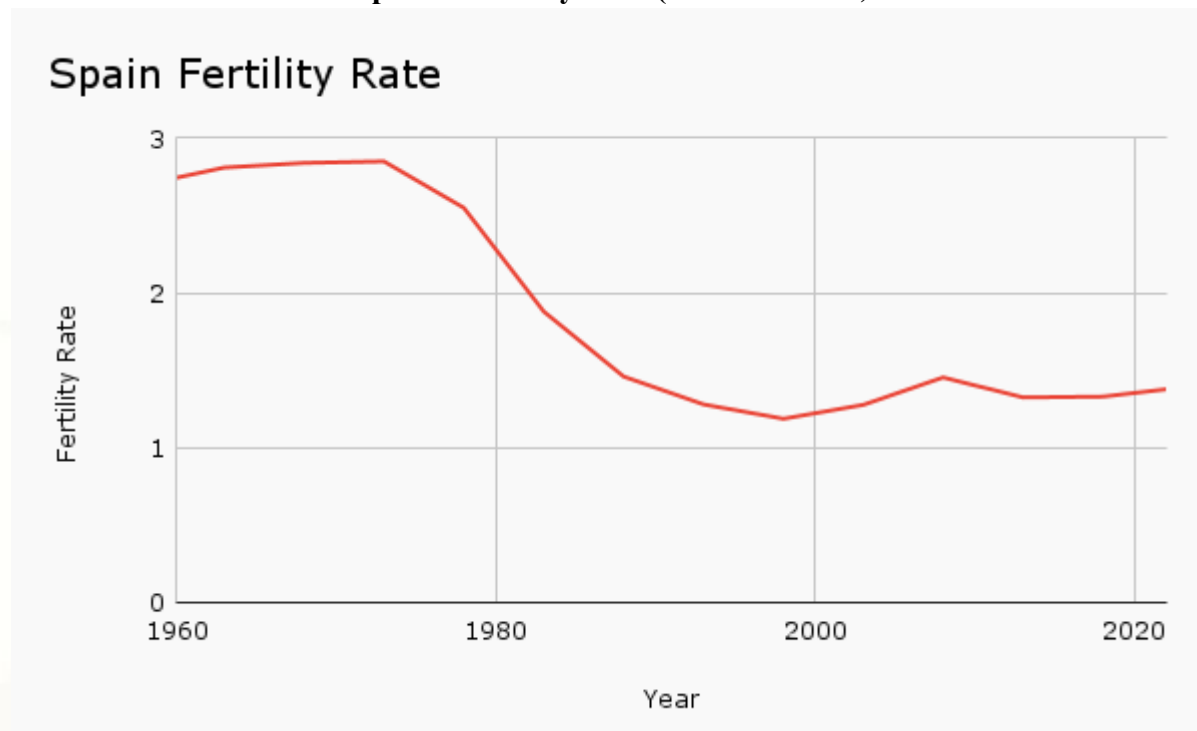
Spain

Manuel Lara Aguado

Summary

Spain's TFR sits as one of the world's lowest - [1.24 according to the World Bank](#) and [1.378 according to MacroTrends.net](#). Regardless of differences in measurement, Spain's TFR is well below the replacement rate of 2.1 births per woman and does not appear to be recovering anytime soon after falling below it in 1981. With the world's 7th highest life expectancy at [nearly 84 years of age](#), a lower fertility rate puts higher pressure on an already strangled system of social care and security - pensions in particular. With a high amount of brain drain and an already delayed age of motherhood at 31, this older demographic dominating Spanish Society will not only affect pensions but economic productivity and composition as a whole. This low TFR will furthermore bring sensitive political debates on immigration, cultural mixing, and adjusting retiring ages and pensioner pay to the forefront. Spain must be looked at as a valuable lesson for what is to come for most of Western Society in regards to demographics. However, interestingly, fertility has been improving in the last few years, with an average [0.9% growth rate per annum ever since a 2013 low](#). The U.N. predicts slow yet solid TFR growth, up to an estimated 1.6 Births per woman by 2100. Despite this, Spain's population is expected to nearly half by the end of the century.

Spain's Fertility Rate (1960 - Present)



Source: Macrotrends



Fertility Forecast

1. GDP per Capita, Unemployment & Consumer Confidence

There appears to be a very strong correlation between income per capita / economic growth and a decrease in fertility. This section contains 3 different metrics - all related to economic prosperity but with slight nuances. Although GDP per capita tends to move in the opposite direction to the unemployment rate, the high rate of structural unemployment present in Spain, particularly among the youth, is a factor traditionally pointed to when explaining its lower fertility rate. Job stability, combined with consumer confidence and general optimism about the economy are vital factors in the decision to pursue parenthood and are thus heavily correlated. Lastly, changes in GDP per capita (or economic output per person) are a good summary of economic conditions and purchasing power of couples to confront the ever higher cost of having children.

- GDP annual per capita currently sits [around \\$30,000](#), with it strongly correlated with fertility rates, especially since the turn of the 21st century. After Spain's rapid industrialization process in the latter half of the 20th century, and the subsequent progression of healthcare quality that followed, it is natural to think of economics as the most determinant factor. Fertility reached an all-time low of [1.13 Children per woman in 1998](#), yet climbed up to 1.4 in 2008 following the early century boom just as GDP per capita peaked at its current all-time high of \$35,000. Fertility kept falling with GDP until a turnaround in 2013 and then rose again until the new economic collapse of 2020.
- Similarly, the unemployment rate currently hovers [around 15%](#), a historic average. Once again, periods of falling unemployment and general economic prosperity tend to be associated with increased rates of fertility, such as the 2000-2007 period or the 2013 to 2019 period. Spain's astronomically high [Youth Unemployment rate of 36%](#), with a historic high of 55% in 2013 - provides a sense of the low level of purchasing power and economic opportunity for those of childbearing age - no doubt having a correlation with TFR.
- Lastly, the level of consumer confidence appears to have a similar effect, with it actually [higher post-2013 than it was before 2008](#) (a difference between unemployment and GDP per capita). A new sense of economic optimism, with a peak in 2015, might explain why TFR was the same after the 2008 recovery despite poorer economic conditions than before 2008. In fact, consumer confidence is on par with other Western developed nations such as the UK and USA despite a more downtrodden economy. It appears that confidence - particularly relative to closer time periods - is as relevant a factor in TFR as objective economic wellbeing and stability.



2. Education

Although ranking worse than most of its EU and OECD counterparts, Spain boasts comprehensive and fully state-provided education from ages 3-18, with relatively affordable university programs. Spain boasts a high level of education and well-trained professionals, with women extending their education considerably and their labour force participation increasing over the last few decades. This has dropped fertility over time - but has no dubious effect on TFR currently.

- Spain's [Adult Literacy Rate \(15+\) is 98.6%](#) according to the World Bank, with a 98.9% literacy rate for women, growing at an annual rate of 0.10%. Near complete levels of literacy suggest that other factors are driving modern trends of fertility in Spain, as is true with most developed economies.
- Perhaps an extension of the literacy rate, but a more nuanced measure might be to look at the average *age* and *quality* of schooling, particularly for women. Total “school life expectancy sits at about [15.3 years for adults](#), a very impressive 12th worldwide. According to an [OECD study](#), nearly ½ adults had not finished the ESO (or schooling until age 16), and 22% had the ESO as their highest level of attainment, both well below OECD averages. Spain remains one of only six OECD countries where less than 60% of adults have obtained upper-secondary or tertiary levels of education. That said, younger generations have better education levels than their parents - particularly as higher attainment leads to a lower chance of unemployment (yet still higher than the OECD average). [In fact, 54% of women 25-34 had obtained a tertiary degree](#), compared to only 44% of men - women were also just as likely as men to pursue a vocational track.
- The current impact of education level on TFR in Spain is inconclusive. Naturally, a higher level of literacy and greater levels of female education (which increase participation in the workforce) has brought fertility down - a common trend among developed nations. However, given the high levels of unemployment - and economic stability determined as one of the major factors in planned parenthood - education to further increase employability and therefore purchasing power might unexpectedly boost fertility rates. There are however various variables to consider that come with higher rates of education and their possible effect on decreasing TFR: particularly the costs associated with education decreasing financial stability and desire for children, the delay in the age for motherhood and financial independence from family structures if pursuing an education, the high cost of living which strain the ability to raise children in cities where they tend to live and learn, and most notably the levels of brain-drain of the highly educated to countries with greater opportunity - which decreases total fertility. The general butterfly effect of greater education, therefore, tends to decrease TFR.



3. Healthcare

Spain boasts some of the highest and most affordable quality healthcare in the world - part of the reason which has led to its high life expectancy. Its correlation with fertility has tended to be negative - most children are expected to survive childhood (as in many western nations).

- The infant mortality rate is an impressive [2.7 deaths per 1,000 live births](#), a statistic which has nearly halved since the turn of the century and is in line with many OECD nations.
- The Maternal mortality rate sits at [3.4 deaths per 100,000 live births](#), a figure which has shown a slightly decreasing trend year over year. Both these two figures appear to be largely insignificant to TFR and the decision to pursue parenthood.
- According to the OECD, healthcare spending as a percentage of [GDP sits at 9.4%](#), which is around the OECD average of 9.3%. Spain was once ranked as the 7th most efficient healthcare system in the world in a WHO report in 2000, but dropped and currently sits 18th in the [Euro Health Consumer Index](#) published in 2018. The state has been heavily involved in the provision of public healthcare, with around 73% of it being funded by public sources. The state's heavy involvement and universal healthcare coverage have reduced inequality and made healthcare affordable - co-payments are limited to certain medicines and treatments the state does not provide. Expenditure on healthcare per capita has fallen since 2010 when government austerity was imposed to deal with the fallout of the 2008 crisis - this has however mainly resulted in higher waiting times and a lower number of medical professionals rather than reduced coverage in services. Still, [around 10% of people boast private insurance](#), mainly to cover dental care and to avoid the high waiting times of the public system. That said, public healthcare coverage is comprehensive and covers all stages of motherhood and paediatric care - and has been universal to all [since 2018](#).
- Once a threshold of quality healthcare has been reached (and its affordability has been guaranteed) it appears that healthcare has no significant effect on TFR in Spain. A more probable explanation of the increase and decreases in healthcare spending and its correlation to fertility is that they flow with government tax revenues and levels of debt - heavily correlated with economic cycles and employment - which *do* tend to affect fertility.

4. Religious Penetration & Societal Factors

This country-specific section explores the massive role of religion, particularly the Roman Catholic Church in Spain, as well as some larger societal trends and views on marriage, careers, children, and contraception. Although hard to quantify, one can infer that the decrease in religion, largely associated with a shift towards western cultural values, has



delayed the age of motherhood and decreased marriages, two of the most important factors in decreasing TFR, according to the [NIH](#).

- Despite a rich and long-established Catholic tradition, only around [56.6% of the population identifies as Catholic](#) - with only 18.9% of those described as “practising”, and around 36% of the population being non-religious (Agnostic, Atheist, or other). Ever since Secularisation in 1978, with the definite separation of the church and state, there has been a strong shift in line with the general Western European Secularization - only [3% of Spaniards described religion as one of “3 main pillars of their life”](#) - compared to the 5% European average, an already heavily secular average. Moreover, the high amount of non-practising Catholics, exacerbated in those aged 20-40, have seemed to discard traditional teachings in morals, politics, and sexuality - and are generally supportive of issues such as premarital sex, homosexuality, abortion, contraception, and more recently, Euthanasia. It appears, therefore, that only religious festivals and holidays are in strong participation by the youth, with them embracing more liberal factors in lifestyle - prioritising travelling, education, or work before children - which has increased [the age of first motherhood to 31](#), with nearly $\frac{1}{3}$ of birth coming to women 35 and older. This is, however, more associated with economical factors, such as a delayed age of leaving the house and poor labour conditions. As the women born during the “baby boom” of the 1960s and 1970s leave child-bearing age, this trend is only expected to increase.
- Perhaps a more significant factor derived from secularisation is changing attitudes towards marriage - or rather a lack thereof. Although not reaching the levels of East Asian countries such as Japan or South Korea, [around 28% of Spaniards never marry](#) - a rate increasing among the youth, and of the 58% who do, [only 22% do it through the church, down from 75% in 2000](#). Legislation facilitating divorce, a disconnect between the conception of children and marriage (many in fact choosing not to have one) and a lack of children for those unmarried (due to the high economic cost of raising them) has only made the prospect bleaker.
- Rates of unplanned pregnancies tend to be low, and the use of contraceptives, despite only being [properly legalised in the early 1990s](#) remains high in youthful circles. In fact, Spanish parents have fewer children than they planned - most wanting 2 - but [economic conditions complicate their ability to do so](#). The late age of motherhood and decreasing rates of marriage - both loosely tied with a decrease in religion and changes in cultural norms - appear to be the most significant factors affecting TFR in this section.



5. Rate of Immigration & Emigration

This last country-specific section centres around the pivotal role of immigration/emigration in Spain - both very high for the size of the nation - and both playing a critical role in national demographics and no doubt having an effect on TFR. Although emigration is high, particularly increasing brain drain post-2008, a boom in immigration (particularly from Latin America & Eastern Europe) will likely make this section a net positive for TFR.

- Immigration has exploded ever since the start of the 21st century - jumping from 1.6% of the population in 1998 to a high of [14% in 2010 according to Eurostat](#) - one of the world's highest. Moreover, given the peculiar regulations in Spain regarding nationality - especially the granting of it to those born whose origin countries don't grant nationality via *jus sanguinis* (bloodline) to avoid statelessness (a feature common of many Latin American passports) - puts some estimates of "immigration" (1st and 2nd generation) at around 25% of the population, or upwards of 10 million. This feature, combined with the granting of nationality after 2 years of residence to citizens of former territories of the Spanish Empire has made Spain a particularly attractive destination - offering the safety net and labour opportunities of a Western European nation but with closer linguistic and cultural bonds than countries such as Germany, the UK or Italy. Interestingly, one can draw comparisons between declining Latin American political stability and an increase in immigration, particularly of economic elites - [a most notable recent example being Venezuela](#).
- That said, as with fertility, immigration has moved in line with economic growth - characterised by a boom at the start of the century. More so than other European nations, the bubble of the construction sector, agriculture, and the underground economy contributed to a demand for low-skilled labour unable to be provided by the domestic population, making Spain have the [2nd highest absolute net migration in the world by 2005](#). This has come down since, particularly falling since 2008, but has been rising since 2014, held high, among other factors, by other strong demand for work in the tourism industry.
- Illegal and undocumented immigration, perhaps surprising to most, [comprising only 8% of yearly immigration](#) - mostly coming from Sub-Saharan Africa and Latin America - and a net positive towards fertility as those incoming are of child-bearing, even teenage age.
- This prompts an interesting discussion on the effect of immigration on TFR and the social safety net as a whole. There are two main groups of immigrants. Firstly, those aforementioned from nations with lower GDP per capita than Spain: Latin American nations, Morocco, Pakistan, or the Eastern EU countries added in the 2004 enlargement



- [the average age for these immigrants being just 33](#). Secondly, we have those from nations with a GDP per capita higher than Spain: UK, Germany, or Scandinavian nations - who are attracted to the pleasant weather and quality of life, good healthcare and a cheaper cost of living. This is particularly appealing to retirees, with the average age of British migrants to Spain being [56](#). Although the former category clearly increased TFR and helped alleviate a worrisome demographic program, the latter is more dubious. The former took mostly jobs in housekeeping, construction, agriculture or similar sectors and therefore created no significant job loss for the majority of Spaniards. In the latter, those younger expats who came to work in Spanish tertiary sectors were well-off and able to pursue parenthood. The influx of this richer category, particularly of retirees, has brought lots of tax revenue and spending which have boosted the domestic economy - particularly in times of recession - but on the other hand has escalated living costs for the general population, making housing unattainable for much of the young in hotspots such as Seville, Málaga, Girona or Barcelona - with wages unable to keep up. The effect of this immigration demographic on TFR is therefore hard to pinpoint on a generalist scale.

- Lastly, emigration, particularly the brain-drain of the young and educated, has been a commonly [pointed-to trend in the news](#), particularly since 2008. The rise has come as many struggle to find well-paying work, [especially in research-heavy sectors such as medicine and science](#). [Although the rise is concerning](#) and has decreased TFR as those leaving are the demographics with highest fertility - given they are likely to emancipate the earliest - it is offset with immigration as population is shown to be [increasing year on year](#).

Assessing Impacts

Political & Social Impacts

In many ways, TFR is a useful reflection tool to assess the evolution of politics and Spanish society itself. On the one hand, a continued decline in fertility showcases the more liberal attitudes towards marriage, contraception, and religion - with less of an emphasis on children and family structures - the average age of parenthood rising to a staggering 31. Despite its Catholic roots, Spanish society and politics have fallen in line with most of Western Society and its values - placing a greater emphasis on work, leisure and education than ever before.

An ageing population, however, has shifted the median electorate towards 45+ years of age, with more than $\frac{1}{3}$ of people being 65 or older. As a result of this reversing demographic trend, we might therefore see politicians aligning discourse and policy in favour of this larger and larger group - favouring regional interests - particularly the “España vaciada” (*Empty Spain*) - interior poor regions which have seen a massive exodus ever since the 1960s. The



political success of Teruel Existe (*Teruel Exists*) - along with more traditional regionalist-focused parties may indicate a move towards stronger local identities and a further political disconnect between them and the urban dwellers of Madrid and Barcelona - who alone represent over 30% of Spaniards.

Regional differences are already omnipresent in Spain - most notably in the independence movements of Catalonia and the Basque Country - one can only expect these to increase over time between richer, urban and younger regions and the poorer, rural, and older areas. Although retirees appear to be quite strict in their voting patterns - either PP or PSOE - the irruption of conservative Vox and their rural-led bases will mean that their voice will matter more than ever, especially in areas such as healthcare, services, pensions and the digitalization of the economy. Lastly, the aforementioned influx of immigration will no doubt arise, and already has, a strong debate and divide within Spanish society - a polarising line between those who support it and those who do not.

Economic Impacts

As alluded to in the introduction, a low TFR can be seen as a mirror of economic conditions. Spain's economic dynamism is a unique and interesting paradigm. On the one hand, it very much is a Western economy - established in the OECD with world-class rankings for healthcare, education, infrastructure and adopting predominantly western values. On the other hand, it falls into the trap of the PIGS countries, with high unemployment, many holding temporary and precarious work which breeds low wages relative to its neighbours. Barring Italy and Japan, Spain has the lowest TFR because of the disconnect between how many kids couples want (2) - similar to most western nations, and how many they actually have (1.2). Youth unemployment being above 25% and the age of emancipation being 29 have delayed having kids, leading to less overall. The early century boom is the only period where this trend has reversed as Spain's economic indicators fell more in line with European leaders.

Yet the main economic effect of low fertility is increased pressure on pension systems and social security. Currently, around 3 taxpayers support one pensioner, and with a direct pay-as-you-go system, the imbalance in the demographic pyramid means that the "breaking point" where pensions cannot be afforded is nearing. Although an influx in immigration has helped, it needs to be much more pronounced in order to reverse the trend. With taxes already at a suffocating rate to all economic classes - increasing them will likely not yield much higher revenues. And as people live longer, upwards of 20 years after retirement, with pensions cut to a barely livable rate - it seems unlikely that politicians will be willing to cut pensions or increase the retirement age. With debt over 100% of GDP, and interest rates currently rising, there appears no pleasant solution in sight. At its heart, poor economic conditions for the youth and high unemployment prompted by a precarious economy cycle back to affect all levels of the public and private economy - with pensions and social security often the first to be cut out.



Extrapolating Impact

Spain's lesson in fertility and demographics is no doubt one to be duly noted in many Western nations. With an older age demographic, the situation shows what is to come for younger nations around Europe or in the USA, both holding an average age of about 40 years compared to Spain's 45. Although less pronounced than in Spain, the trend of lower fertility and ageing demographics is much the same - particularly worrisome for pensions, public spending, and prompting a need for immigration. With similar social systems, the unfavourable situation in Spain and ageing Southern Europe calls for reform which makes pensions and social security sustainable to this new demography - which is in line with the new social and economic values that prompted it - seems unlikely to change anytime soon.



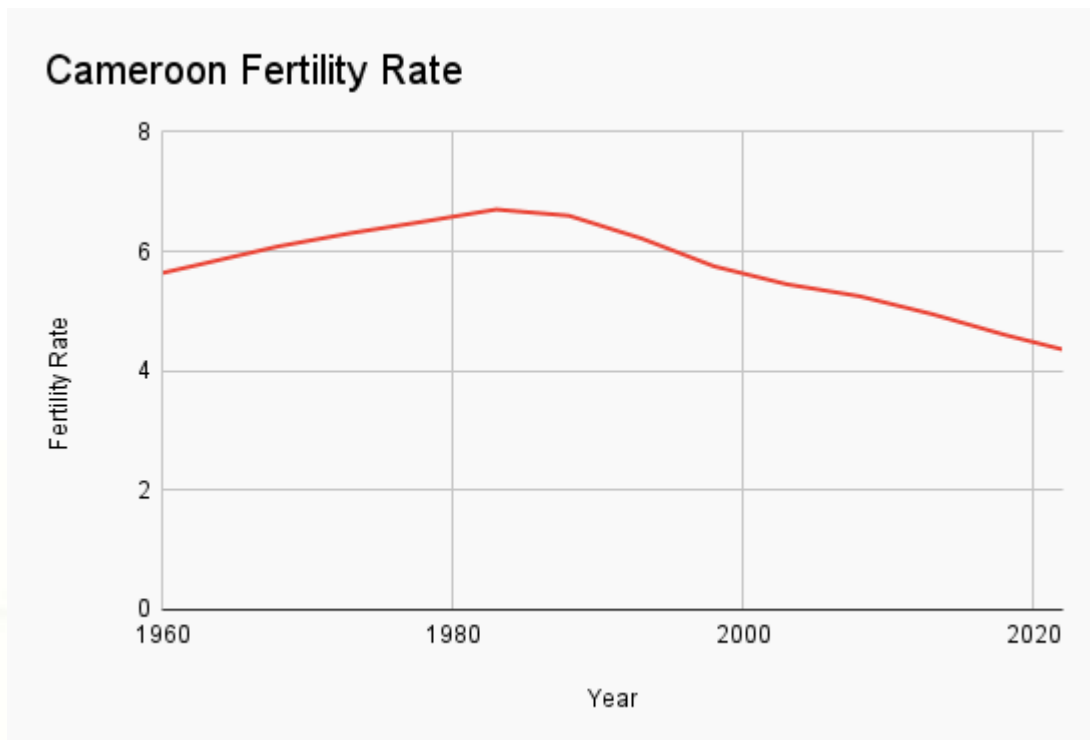
Cameroon

Phaedon Angelopoulos

Summary

Cameroon is a developing country in East Africa with a long colonial past which has undoubtedly affected the country's fertility. At the moment, the country is going through industrialisation, largely backed by China. New infrastructure, which drives the economy, paired with difficult terrain and a large number of ethnolinguistic groups present, has led to a large urban-rural divide. At the same time, assuming that the current rate of urbanisation, industrialisation and investment remains, along with the general political stability in the country, any of the divides described in detail below, can be eliminated.

Cameroon's Fertility Rate (1960 - Present)



Source: Macrotrends

Fertility Forecast

1. Economic Indicators:

Cameroon's economic indicators and projections appear to be optimistic.



- Cameroon's total GDP is ~44.9 billion dollars, making it approximately 1650 dollars per capita. Its Purchasing Power Parity is 102 billion dollars, with 3745 per capita annually.
- Inflation has remained below 3% since 2010 and has been rather stable since the spike of 1995. It is projected to remain in the 2% region until 2027.
- The economy is quite diversified and mainly relies on services, industry and agriculture, although 70% of the workforce is occupied in agriculture.

2. Education Level:

Large strides in educational access are evident, although significant regional disparities exist.

- Compulsory education until the age of 12 is free, however, school facilities are severely lacking in space, sanitation and drinking water. Corruption is widespread and is hindering efforts to modernise educational facilities. School enrolment has largely increased in the last decades, with 60% of children being enrolled in 2016. There is a slight disparity between male and female enrolment levels, with only 55% of female children being enrolled in school in the same year. This is attributed to early marriage, social inequalities, and uneven distribution of household labour.
- Adult literacy rates have been steadily rising. There is also an urban-rural divide, however, there is no large discrepancy between the Anglophone and Francophone regions when it comes to literacy rates. It is important to point out that local languages are not represented in any way in the school system, leading to inequalities between children who are not native or fluent speakers of the language of instruction and those that are.
- The Boko Haram insurgency in neighbouring Nigeria has impacted access to education in the north of the country. Violence is becoming increasingly common in the region, which already suffers from the lowest literacy rates

3. Median Age:

Rising life expectancy coupled with high levels of fertility result in an extremely low median age.

- Cameroon has a median age of 18.5, with a life expectancy of 63 years. 42% of the population is 14 years old and under and 60% is 25 and under. The population growth rate is increasing, with birth rates remaining well above replacement levels and life expectancy rising.



- The urban-rural divide is present especially in the vital statistics, with the rural population having more children and presumably worse access to healthcare facilities, although data cannot be verified on the latter.
- Infant, childhood, and maternal mortality are quite high, though this is improving.

4. Healthcare:

Healthcare remains poor across the country.

- Healthcare quality is classified as [very bad](#), with the country fulfilling only 58% of its obligations, relative to its wealth.
- Disease is rampant, with Malaria, AIDS, respiratory infection and Diarrhoea being the leading causes of death in 2018. HIV is prevalent especially among younger people, where at least [3% of the population](#) is living with the disease, although it is showing signs of improvement in terms of new infections.

Assessing Impacts

Politics And Anglophone Crisis

Politically, Cameroon is authoritarian, with extremely limited civil liberties, suppression of the democratic process, human rights abuses and violent conflict in the anglophone regions of the country. Elections are heavily rigged, and the opposition is limited, meaning that no meaningful trends can be observed or even inferred by looking at the results. The country has been ruled by the same party since independence, with President Biya currently on his 7th term. The ongoing Anglophone Crisis has resulted in more than [700000 people](#) becoming displaced and impacting millions more. This of course also causes great disruption in schooling and access to healthcare including contraception in addition to a demographic shift, as school-aged children are being disproportionately targeted. It is further unclear whether the above numbers have been taken into account in the published statistics on the ongoing population surveys. Policies specifically targeted at the suppression of the community, combined with the region's tumultuous history of civil disobedience have resulted in continued violence from both sides.

Economy

General economic stability plays a great part in family planning, with infant mortality rates, social benefits, education, and healthcare, all making it easier for families to have children and the children survive into adulthood. At the same time, the shift away from sustenance farming, rapid urbanisation and industrialisation which come with a thriving



economy, reduce the need for farmhands in communities such as Cameroon. Additionally, more educated people tend to be richer, have children later in life and have overall fewer children. Cameroon is a [highly urbanised](#) country compared to others in sub-Saharan Africa, which is linked with [lower fertility rates](#).

Welfare

Cameroon does have a [social security net](#), with pensions, maternity leave and various types of social assistance, since 2014. Unfortunately, eligibility is [extremely limited](#), making its reach and impact negligible. Furthermore, the geography of the country makes it so that the northeastern regions are significantly isolated, with few transport links to the rest of the country, hotter and drier climate and significantly less arable land, and an economy dominated by sustenance farming. As such, the area scores worse than the rest of the country in all risk indicators (i.e., infant mortality, access to healthcare, life expectancy etc). The [HDI score](#) of those regions is significantly lower than the rest of the country as a result. Even though emigration is much more common than immigration, the aforementioned regions house a number of Nigerian refugees that were displaced from the Boko Haram insurgency.

Environment And Climate Change

[Climate change](#) is already having an impact. Water and rainfall are becoming more scarce, especially in the hotter North. The Sahel region is swiftly desertifying, which combined with the lack of access and risk of violence, makes the situation all the more precarious. Since the livelihood of the majority of the population depends on agriculture and infrastructure is not sufficient to transport water and food on a large enough scale, it is possible that food insecurity may rise. At the same time, [large investments](#) are being made in improving infrastructure, meaning that the risk is quite low. However, those depending on sustenance farming will certainly continue to be increasingly affected. Urban areas have much better [access to potable water](#) than rural areas, which has certainly improved since the linked study. Peri-urban settlements are quite common, with inadequate access to water, sanitation and policing. The population and needs of those areas are not well documented nor is the information that does exist up to date. As such, it is difficult to draw conclusions about the quality of life and general demographic trends. What we can say with confidence is that the combination of climate change and urbanisation will drive more low-income people towards the city and into such communities and hence their population and area will continue to grow.

Limitations

There are significant limitations in the available data, considering how since independence there have been 2 full censuses, the last one in 1987. In the years between 2005-2015, some [data](#) was gathered, however, it is not detailed enough to draw conclusions. As such, we have to rely on estimates and independent surveys from the World Bank, the CIA Factbook and the UN. Little data is available on what the effect of the Anglophone Crisis has been on demographics, particularly access to healthcare and literacy / education. Overall, it is difficult



to make assertions based on the available information. As such, it is impossible to say what the reality is on the ground or to extrapolate further case studies on a large scale. At the same time, individual factors (i.e., access to water, agricultural output etc) in individual regions can be utilised to compare and contrast them with others, in different scenarios.

Extrapolating Impact

Due to the enormous diversity of Cameroon, one of the biggest in Africa in terms of language, ethnicity, religion, and urban / rural divide, but also on relative economic success and political stability, it is unproductive to attempt to compare it with other countries. Instead, any comparisons should be made between Cameroonian regions and states with a similar makeup. In that sense, northwestern regions in the Sahel area, with dry climate, primarily rural / sparsely inhabited, and Muslim populations with poor infrastructure, can be compared to regions or even entire states with similar characteristics. Northern Nigeria and south-eastern Chad, in particular, show very similar characteristics, with an overall poorer country. On the flip side, the Central, East and Southwest regions can be put up against Namibia, Kenya and Cote d'Ivoire, with similar levels of human development, population density ethnic / religious makeup and access to schooling.



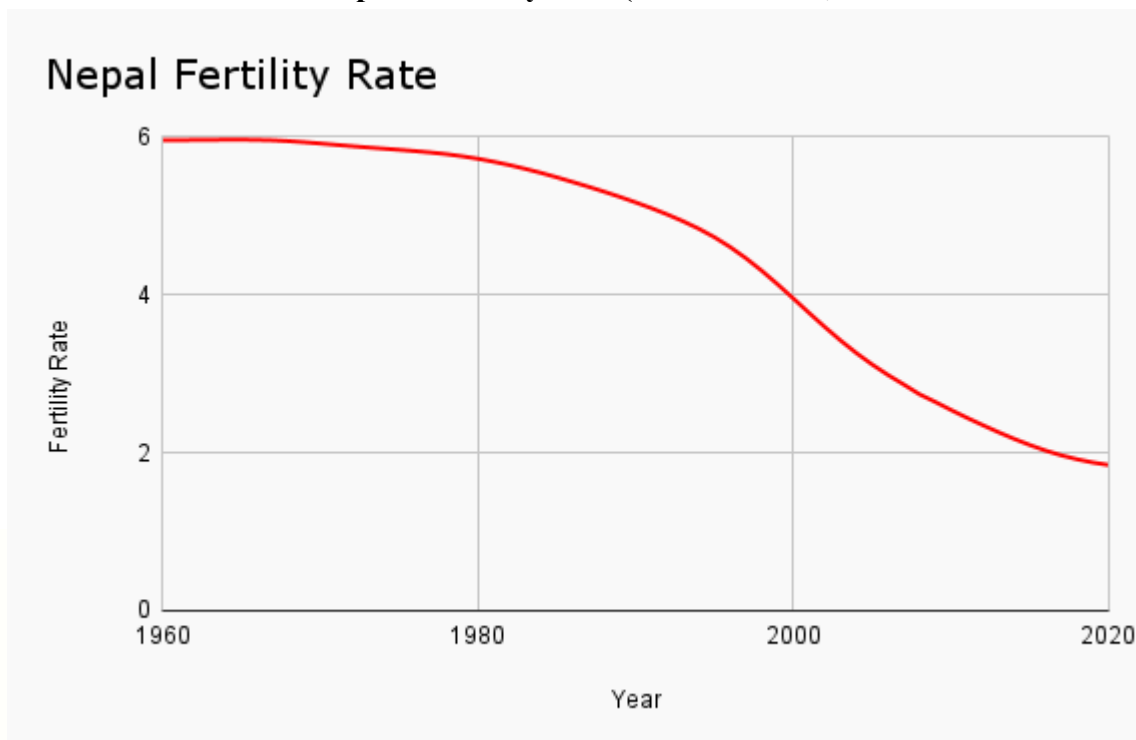
Nepal

Alice Presotto

Summary

Nepal's TFR was at 1.8 in 2020, hence standing below the 2.1 replacement rate. The TFR has registered continuous decreasing rates from the late 1960s, primarily due to increased economic development, contraception use, literacy rate, mean age at marriage, and declining infant mortality rates. The effects on Nepal's demographics will be major, leading to an ageing population, the need for the government to focus on job creation especially in the education and health in labour, and new necessities and opportunities in the urban areas.

Nepal's Fertility Rate (1960 - Present)



Source: The World Bank

Fertility Forecast

1. Economic and Developmental Indicators

In 1960 the total fertility rate (TFR) stood at 6, stable until it started to drop in 1968 to reach 1.8 in 2020.

- Nepal has seen an exponential growth of its economy from the 2000s, increasing more than sixfold in two decades from US \$6.05 bn in 2001 to US \$36.29 bn in 2021. The



steepest GDP growth happened in 2010-11 and 2016-18. The [GDP per capita](#) followed a similar trend, from US \$246.7 in 2001 to \$1,222.9 in 2021, recording a considerable increment between 2009-11 and 2016-18.

- From the 1990s to 2008 [unemployment rates](#) in Nepal were stable between 1.3 % and 1.9 % of the total labour force. From 2008 it started to increase to reach an all-time high of 5.1 % in 2021. According to the ILOSTAT database reported by the World Bank, the [percentage of female labour force participation](#) in the decade 1990-2000 has ranged between a low of 47.5 and a high of 48.8, stable for 2 decades around 48.9, to jump from 49.7 in 2010 to 56 in 2017. 2020 and 2021 have seen a drop with respectively 54.9 and 55 percent of females of the total labour force. These rates are above the average for the decades [1990-2000](#) for the East Asia region and Pacific stable in the range 43.5 and 44 % and South Asia between 22.2 and 26.2 %. However, in Nepal, there is still a severe [gender wage gap](#) in earned income.
- The [Human Development Index](#) of Nepal is considered to be in the medium range, with a 2019 HDI value of 0,602, up from 0,387 in 1990. In the south Asia region, only Pakistan and Afghanistan score lower than Nepal. Nepal ranks 105 out of 149 countries on the [Global Gender Gap Index 2018](#) conducted by the World Economic Forum.

2. Education Indicators

The school enrolment and literacy rates, especially for girls, are factors that have been [proven](#) to significantly correlate with the number of children born per woman.

- The primary school enrolment for [females](#) in 2017 was 145 %, and [males](#) 143 %. Secondary school enrolment in 2017 for [females](#) was 74 % and 71 % for [males](#). Tertiary school enrolment was 12 % for [females](#), and 12 % for [males](#).
- The [female literacy](#) rate has grown significantly in Nepal, from 35 % of the total of females above 15 years old being literate in 2001 to 60 % in 2018. [Male literacy rates](#) are well above female ones, with 81 % of males being literate in 2001, to 94 % in 2018.

3. Health and Social Indicators

The primary healthcare system has been the [target of investments](#) since the late 70s because it is seen as the backbone of Nepal's healthcare infrastructure. This has been reflected in impressive achievements in health indicators.

- Disparities based on wealth are still strongly present in Nepal in the access to healthcare services for mothers. According to the [2016 Nepal Demographic Health Survey](#), only 34% of women from the lowest wealth quintile accessed skilled birth attendants compared to 89% of women from the richest wealth quintile.



- Nepal's [life expectancy at birth](#) in 2020 is at 71 years, just below the [global average](#) of 73, with female expectancy of 73 and male expectancy of 70 years.
- Nepal has registered declining [infant mortality rates](#) since 1960, recorded in 2020 at 24 per 1,000 live births. However, the [under-5 mortality](#) rate in Nepal remains high in comparison to neighbouring countries and developed nations. Reasons for this have been identified in the female labour force participation (FLFP), the caste system and no paid maternity leave.
- The [increased contraceptive](#) use in Nepal for married women has contributed to the decline in fertility rates. However, a [2019 study](#) finds still about 44% of women of reproductive age (15–49 years) who want to avoid a pregnancy are not using a modern contraceptive method. This results in [unintended pregnancies](#), in 2017 estimated at 539,000 each year.
- Child marriage has been illegal in Nepal since 1963 and, Nepal has one of the highest ages of marriage, set at 20 years old for both men and women. However, close to [40% of girls](#) under the age of 18 are married in Nepal.
- Family planning is different among families in rural and urban areas. Despite Nepal registering an upward trend in the adoption of modern contraceptive use in both urban and rural settlements, however, the uptake is [still lower](#) in rural areas.

4. Ethno-religious blocs

Nepal has a society divided into more than 100 castes and there are fertility rate patterns common within each caste or ethnic group.

- [Fertility](#) was highest among Muslim women both in 2001 and 2006, despite it declining between the two periods. Dalit women had the second highest fertility rate in 2006.
- According to a [2019 study](#), the risk of death in children under 5 years for a Terai caste mother was 45 % higher than for mothers from other castes.

5. Government Policy affecting Fertility

The [Constitution of Nepal \(2015\)](#) guarantees the right to safe motherhood and reproductive health of women as fundamental rights. Nepal's government has given priority to the reduction of TFR since the first five-year plan in 1956-61. Family Planning is currently still a priority for the government of Nepal and is considered part of the healthcare strategy.



- The current [Family Planning Programme](#) aims at the distribution of modern forms of contraception, the education of communities on family planning and on giving free counselling on a large scale.
- Nepal declared child marriage illegal in 1963. The Government has also endorsed a [National Strategy to End Child Marriage](#) in Nepal by 2030.
- In 1983, the National Population Strategy contained policy goals to reduce the TFR per woman from 6.3 to 5.8 by the year 1985, to 4.0 by the year 1990 and to 2.5 by the year 2000. These ambitious targets were never achieved.
- Nepal's government issued the [Population perspective plan \(2020-31\)](#), which is focused on integrating the population into all concerned areas of development, including promoting women empowerment, respect for gender equality and gender mainstreaming.

Assessing Impacts

Socio-Economic Demography

Nepal has a young population, with the [median age at 24.6](#). [Life expectancy](#) has been steadily growing since the 1950s, hence the population is ageing, and is expected to reach the median age of 40.1 in 2050. The TFR level is under the Replacement-Level Fertility rate, meaning the population is growing at a declining rate.

Economic sectors challenges

Around [66 % of the total population](#) in Nepal is engaged in the agricultural sector. The growth of the population presents a high risk for food security since [Nepal has nearly run out of land](#) to cultivate due to one-third of the country consisting of mountains and hills.

In addition to a greater amount of food, the increase in population will demand greater demand for health and education services. This would entail that the main challenge will be job creation, especially in critical sectors, such as teachers and nurses.

Migrational impact on the economy

Internal migration in Nepal has seen an inflow of migrants into the urban areas. The [significant increase](#) from 4.67 million people living in urban areas in 2001 to 6.22 million people in 2020 will put great pressure on the government in order to ensure services in the cities as well as food security and the provision of decently paid jobs.



Political stability

Political stability appears fragile in Nepal. This status is reinforced by the population rate's pressure on the economy. The majority of Nepalese still struggle to meet even their basic needs, with [over 30 %](#) being at risk of falling into absolute poverty. In the future, the governments will need to address both the population increase and the economic instability to obtain political power.

Extrapolating Impact

Nepal's falling TFR is a phenomenon quite common in other South Asian and South-East Asian countries. Therefore, the challenges Nepal will face soon in terms of lack of skilled professionals in sectors central to the economy, like health and education professionals, are already being faced in the proximity. [Five low-income countries](#) in Southeast Asia are experiencing some deficit in health personnel, and in [Malaysia](#), teaching professionals experience sharp shortage pressure.

The Covid-19 crisis reverted some of the trends that were happening in the country, such as a diminishing number of child marriages and mortality at birth. As a consequence of economic difficulties and lockdowns, child marriages [increased](#) in Nepal and in other countries where this practice exists, such as Ethiopia, Kenya, and Malawi. This factor was driven by limited access to education, an increase in early pregnancies, and poverty - all being the main social and economic drivers of early marriage. Additionally, according to [Human Rights Watch](#), the rate of neonatal deaths in a cluster of hospitals more than tripled, while stillbirths and pre-term births also increased. Economies shut down and stay-at-home orders have also restricted access to contraception requiring medical consultation, therefore causing disruptions in short-term family planning. These learnings should be taken into consideration by emerging economies and integrated into resilience plans in order to protect the progress made so far in the social spheres.



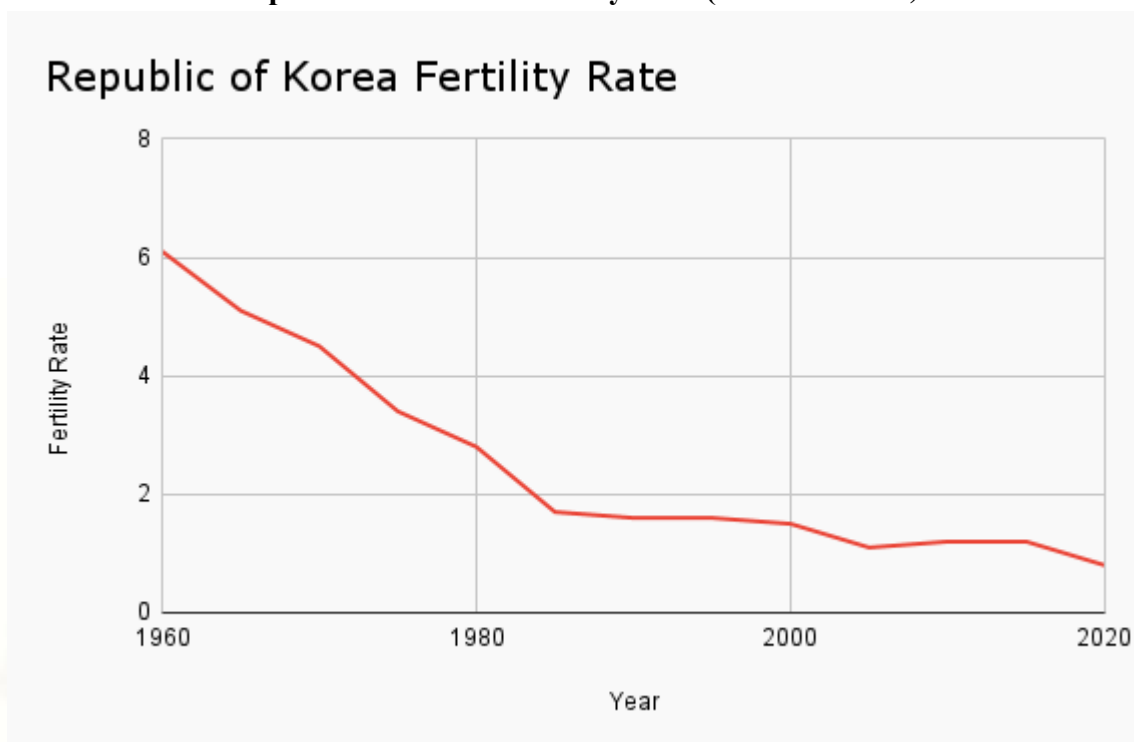
Republic of Korea

Azaria Kidane

Summary

South Korea's fertility rate is the lowest of anywhere in the world at 0.92 and for the first time in 2020, more people died than were born. Its growth following the Korean War was unprecedented, but the population crisis it is about to encounter will also be unprecedented. Korea has an impending ageing crisis with 38.1% of the population predicted to be 65 or over by 2050, with neighbouring Japan already being in economic stagnation for decades. With 28.4% over the age of 65, Korea can expect the same problems. Looking into the future, it is likely that we will see much political upheaval as competing politicians put forward their solutions. However, it could be argued that the same culture that created this problem of low TFR could be instrumental in solving it, as Koreans are no strangers to adapting to get ahead in the world; it is only that this time they must adapt to maintain the lead they have as an economic powerhouse.

Republic of Korea's Fertility Rate (1960 - Present)



Source: The World Bank



Fertility Forecast

1. Economic Indicators

While Korea is one of the best-developed countries in the world, current population trends mean it is unlikely this will remain the case. Korea has traded short-term gains for long-term pains and its growth will stagnate as it has to divert investment in the private sector to solve its population crisis.

- In 2020, Korea's GDP stood at \$1.631tn (US) and had an average growth rate of 3% over the period 2010-2020 but with a lot of fluctuation.
- The pandemic led to 2020 seeing a 5.6% GDP contraction but Korea still had a GDP per capita of \$31,489.12 (US) which is well above the world average
- GDP per capita in South Korea has grown from \$12,257 (US) since 2000.
- Unemployment in Korea fluctuated between 3.68% and 3.94% (highest during the Pandemic), between 2017-2021.
- Family sizes have decreased to [2.53 in 2015](#) per household and one-person households have increased from 23.9% in 2010 to 27.2% in 2015. This has led to a decrease in fertility rates as social customs dictate that marriage must come before babies, with [2% of births coming from unmarried parents](#). A “Catch-22” scenario is created by this, as many are choosing not to marry because of [economic factors](#), such as higher unemployment rates for men, higher income inequality, and high house prices, but many of these economic factors are being worsened by the dropping fertility rates.
- House prices have [continued to rise](#) in Seoul, the demand coming from those wanting to work at major companies headquartered there. As previously mentioned, rising house prices have been cited as a reason as to why many choose not to have children, due to the fears of raising children in a worsening economic climate.

2. Education Indicators

Confucianism's influence on Korea has meant that Education is highly valued, with it being the most highly educated country in the world. No doubt, Korea's focus on education played a key role in its meteoric rise, but this focus on education is also a key factor in its declining birth rate.

- 70% [of 24-35 year olds have completed tertiary education](#), the highest percentage in the world. While on the surface this seems good, after graduating people find that there



are few jobs that are commensurate with their level of education. High competition for jobs, due to such a highly educated population, has meant that many delay marriage, which lowers the fertility rate.

- Education is paramount in Korea with the Korean government spending [5.1%](#) of its GDP on education in 2018. Most Koreans aim for their children to get into one of the SKY universities, Seoul National University, Korea University and Yonsei University. These are the most prestigious in Korea and parents pay a lot to send their children to get extra private tuition needed to pass their entrance exams. This has meant a lower fertility rate as parents cannot afford the cost of paying for multiple children to go through this.
- While men make up [59%](#) (2019) of upper secondary graduates, women are far more likely to have a tertiary qualification, with [76%](#) between the ages of 24-35 obtaining one compared to 64% of males. However, it is [unlikely for women](#) to be allowed to go into temporary part-time work to raise a child whilst on their career path, therefore also leading to lower fertility rates.

3. Health Indicators

While on the surface Korea seems to be a healthy country, it suffers from mental health issues associated with the culture that made it so economically strong in the first place. This coupled with dire fertility rates does not bode well for the future working population which will have to live with this same culture and the added issues of supporting a super-ageing population. It is also widely argued that it is one of the main reasons for fertility rates being so low.

- Looking at standard indicators, Korea's life expectancy is above the global average of 73.2 years and the OECD average of [80.8 years](#) at [83.23 years](#) as of 2020.
- Similarly, the [infant mortality rate](#) has greatly declined since 1960 (80 deaths per 1000 live births) into 2020 (3 deaths per 1000 live births).
- Korea has the lowest obesity rate of OECD countries at [5.5%](#)
- Only a third of Koreans report they are in good/very good health, it has the [highest suicide rate](#) of all OECD countries and the fourth highest in the world at 25.7 deaths per 100,000 people
- The high work hours and uncertain employment of many Koreans are thought to be the biggest contributor to this, with Koreans working [1967](#) hours annually. This extreme



focus on work is a leading reason as to why many Koreans choose not to have children, as many simply do not have the time to.

- Korea has an impending ageing crisis with [38.1%](#) of the population predicted to be 65 or over by 2050, neighbouring Japan has already been in economic stagnation for decades with a lower percentage of its population over the age of 65.

Assessing Impacts

Economic Forecast

On its current trajectory, Korea is heading toward economic stagnation. Korea will have to increase taxes and spending to take care of its increasing elderly population, and this means diverting money normally spent on investing into the economy. This is already having a [noticed effect in key industries](#), such as technology, that the nation has historically been dependent on. It is also doubtful as to whether raising taxes will be enough, as a [government report from 2018 predicted that its national pension fund would run out by 2055](#). Since then, fertility data has only gotten worse, making it likely that the fund will run out before 2055. Inflation is already higher than the Bank of Korea wants it to be, [with consumer prices rising to 6% in June 2022](#), and this will only increase as the government realises that it cannot afford to pay the pension of its citizens. A potential fix for the labour shortage would be to increase immigration to Korea but Koreans strongly oppose immigrants, even ethnic Koreans who historically lived in the USSR have [struggled to integrate](#). If migration is used to solve this problem, it will raise significant questions politically and socially about what it means to be Korean, as strong ethnic pride exists due to the previous government's propaganda efforts to highlight opposition to colonial rule and historical resistance against neighbours.

Strain on Education

In addition to this, the demographic collapse is already influencing Korea's education system. Education has historically been highly valued in Korea, but it is unlikely that the government will be able to commit the same amount of spending it currently does while also caring for its ageing population. It is likely that we will see a decrease in people obtaining secondary and tertiary education, [with this problem already beginning in certain cities](#). This could lead to a variety of problems for Korea, one of which being rising inequality as families who can afford to pay for extra tuition needed to get places at the top universities increasingly obtain them. Another is that many universities outside of Seoul may be forced to shut down as they struggle to fill their quotas, a problem already affecting the city of Busan. This creates a vicious cycle in which quality education will become increasingly harder to find outside the capital as fewer students apply for a decreasing number of universities.



Government Response

While the Korean government promised to set up a task force to deal with the problem in 2019, it was only created in June 2022, two years after Korea's worst fertility data was recorded. In its inaugural meeting on June 24th, Deputy Finance Minister Bang Ki-Seon pledged to increase the "[participation of female and elderly citizens, as well as foreigners, in economic activities and to boost manpower productivity](#)". Furthermore, he also mentioned the potential automation has in helping Korea with its impending labour shortage. Even though no concrete action has been taken yet based on these statements, they raise issues if this is the Korean government's plan of action. Firstly, raising the retirement age will not make up for the productivity loss as the elderly simply cannot work as hard as the young. In addition to this, it is doubtful to expect any politician to be elected to this promise given Korea's growing ageing population making up an increasing amount of the electorate. While automation could act as a temporary reprieve, it could also increase unemployment as companies, also under strain from a lack of investment and labour, could choose to begin replacing workers with robots. With taxes likely to increase so that the government can afford to pay for any solution it wishes to carry out, automation simply adds another problem to their plate: a population heavily taxed and out of work. For now, Korea has a child benefits system in place to increase the birth rate. Some recent policies include a 2 million won (£1276) payment given to anyone giving birth and can be used for any purposes, a prepaid debit card with 1 million won (£638) and a monthly payment of 100,000 won (£63.82) to families with children aged between 0-7, which begins at 300,000 won (£191) before dropping down to the aforementioned price after 2 years. However, these efforts have not stopped the decreasing birth rates and similar solutions in other countries, such as Spain, have failed to reverse the problem as well.

Future Impacts

It was Korea's Protestant elite that spearheaded the effort to modernise the nation in the late 20th century. Therefore, any efforts to increase fertility are most likely to come from Protestantism but it is hard to say how religion will be affected by the low fertility rates, as studies have not found a clear link between the two. Similarly, it is hard to extrapolate to other countries what effects Korea's demographic change will have due to its uniqueness as a largely homogenous nation. However, any economic solution it pursues, particularly any policies on migration or automation, is likely to be emulated by other developed nations. Many countries, mainly in the west, will also soon have to deal with their low fertility rates and the economic stagnation, which Korea is heading for, is likely to be repeated in those countries unless action is taken soon.

Extrapolating Impact

The lessons from Korea's falling TFR can be applied best to its neighbour Japan, but also to much of the industrialised world. Japan, like Korea, has to increase its productivity to



care for its ageing population. Both countries will try to solve this by opening up to foreign investment, due to a lack of spending on the private sector by the respective governments, technological advancements and increased immigration.

It is unlikely that Japan would resort to large-scale immigration, due to the unpopularity of the policy amongst the public, but there are already increased efforts to attract skilled workers to Japan. However, it is unsure whether even this is a viable long-term solution, as many of the nations that Japan draws its immigrants from will also be facing population problems in the near future. The Korean Government's plan to increase the involvement of older citizens mirrors Japan's "age-free society" idea and it is likely that we may see an increase, or even no retirement age, in both nations.



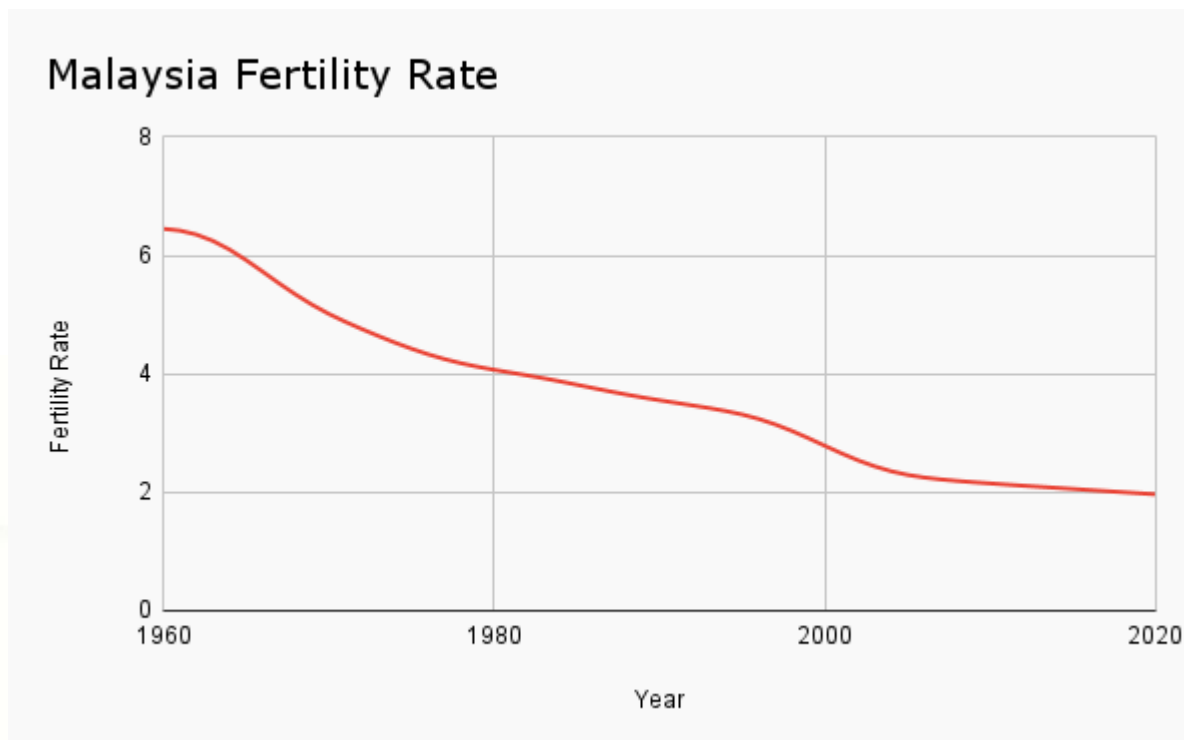
Malaysia

Levi Cursham

Summary

Malaysia's TFR is at 2.0 for 2020 and dropped below the 2.1 replacement rate in 2016. The three main ethnic blocs (Bumiputera, Chinese Malay, Indian Malay) have greatly differing TFRs, with Bumiputera women having over double the TFR of Chinese or Indian Malays. Looking in aggregate, fast-rising GDP per capita and GDP growth rates combined with low unemployment, increasing female participation rate and high-and-rising secondary and tertiary education participation all correlate to suggest a continuation in the downward trend of TFR. The effects on Malaysia's demographics will be major, leading to an ageing population, shifting balance of ethnic political influence, a shortfall in available labour, and a re-focus of government resources from early to late-stage care.

Malaysia's Fertility Rate (1960 - Present)



Source: The World Bank



Fertility Forecast

1. Economic and Developmental Indicators

In 1960 the total fertility rate (TFR) stood at [6.5](#), which subsequently fell to [5.9](#) by 1965. Strong indicators and a developed economy suggest continued decreases in TFR due to the ability to invest large amounts of capital into each child and the middle-class lifestyle.

- In 2020, [Malaysia's GDP](#) stood at \$330.7bn (US) and sustained an average growth rate of 5.1% over the period 2011-2019. The pandemic led to 2020 seeing a 5.6% GDP contraction. In 2020, Malaysia had a GDP per capita of [\\$10,412.30 \(US\)](#) which is just under the world average, \$10,961 (US), though considerably higher than its regional neighbours such as Indonesia \$3,869.60 (US) and the Philippines \$3,298.80 (US), and ranks 4/50 in the [upper-middle income bracket](#). GDP per capita in Malaysia has grown from \$4,430.7 (US) since 2000.
- Unemployment in Malaysia fluctuated between 2.9% and 3.4%, though during the pandemic it has spiked to 4.6% in 2021. Malaysia's high growth rate and low unemployment rate have accompanied an increased female participation rate in the workforce. The [government's 11th developmental plan](#) set itself the goal of a female participation rate of 59%, and while this has largely fallen short, the rate has increased from [43% in 2010 to 51% in 2020](#).
- As of 2019, Malaysia is classed as having a very-high HDI, at [0.81](#), ranking 62nd of 182 countries. This increased significantly between 1990 and 2019, wherein it has grown from [0.643](#). For the [Gender Development Index](#) Malaysia has made similar strong progress, though in 2019 female HDI was just 0.797, in comparison to 0.821 for males. As of 2019, Malaysia held a 0.253 value on the [Gender Inequality Index \(GII\)](#) - which considers the quantitative loss of achievement due to gender inequality - and ranks 59th out of 162 countries. Comparatively, the Philippines and Thailand rank 104th and 80th, respectively.

2. Education Indicators

Malaysia's education system offers another insight into TFR and its trajectory, with the link between educational attainment, particularly for women and girls, and TFR [being commonly drawn upon](#). The data on educational attainment for both men and women reflect a robust education system with strong government support at the primary, secondary, and tertiary levels.



Table 1. ([data from UNESCO institute for statistics](#))

Enrolment data (2019)	Secondary education	Tertiary education
Total enrolment	83.7%	43.1%
Male enrolment	80.7%	48.7%
Female enrolment	86.7%	37.7%

- As shown in Table 1, Female participation in education is higher than male participation for both secondary and tertiary education by significant margins. Tertiary education participation has grown from 4% in 1979, to 11% in 1995, and to 43% in 2019.
- For over-15-year-old Malaysians, the literacy rate stands at 95%, with males having a 2.6% higher rate than females, at 96.2%. Despite growing literacy rates and participation, there are limited mechanisms for quality checks, which mean overall attainment is hard to gauge. Secondly, Malaysia's performance in [Science, Reading, and Mathematics](#) lags its HDI ranking.

3. Health and Social Indicators

Healthcare infrastructure has also increased greatly since the 1950s, and the government [heavily subsidised](#) the cost of care. The quality of healthcare in Malaysia has risen greatly since the 1950s, reflected in falling mortality rates and rising life expectancy.

- Around 77% of the population live in [urban areas](#), where healthcare provisions are widespread, though access in rural regions is limited.
- Looking at standard indicators, Malaysia's life expectancy is [above the global average of 73.2 years at 76 years](#) for both sexes as of 2022 and is predicted to grow to [79 years by 2040](#). Similarly, the [infant mortality rate](#) has greatly declined since 1965 (54 deaths per 1000 live births) into 2022 (5 deaths per 1000 live births).

4. Ethno-religious blocs

Malaysia's TFR can be subdivided into three main ethnic groups; Bumiputera (Native Malay), Chinese Malay, and Indian Malay. The Bumiputera, Chinese, and Indian populations make up [67.4%, 24.6%, and 7.3%](#), respectively. The TFR of these three ethnic blocs is similarly disparate. In 2018 the Bumiputera TFR stood at 2.4, around [double the TFR of Chinese and](#)



Indians, an ongoing and stable trend. Malays are predicted to grow by 3% of the population in the period 2020-2040.

- Beyond having disparate abstract TFRs, there are other related demographic trends to be aware of. Birth rates for Chinese women are lower than Bumiputera women of the same age; in 2015 Chinese women of 25 would give birth to 0.7 babies on average, while Bumiputera women would have given birth to 1.59 babies.
- The strong presence of Islam in Bumiputera culture can be linked with younger average ages for both marriage and first birth, while the Chinese population is majority Buddhist and Taoist.
- Economic disparities also impact differentials in marriage and first birth ages. In Malaysia, Chinese households have on average 1.9x the wealth of Bumiputera households, a gap that has been steadily closing through government efforts. Bumiputera also makes up a large portion of the rural population which is considerably more impoverished, unlike the Chinese who are almost entirely urban.

5. Government Policy affecting Fertility

In 1966 the government introduced the Family Planning Programme which aimed to reduce population growth from 3% to 2% by 1985. More recently, however, they have engaged in policy that will influence TFR, though these measures primarily come as a result of government interests in increasing female participation in the workforce.

- Current policy seeks to increase maternity leave in the economy, firstly by increasing mandatory private sector maternity leave from 60 to 90 days, and secondly by creating a unit trust fund for each newly born baby, namely ADAM50.
- This policy, while aimed at increasing TFR, comes alongside simultaneous programmes to greatly increase the female participation rate in the workforce.
- The Government has championed TalentCorp's 'Life At Work' survey to measure perceptions of Work-Life Practices (WLP) in Malaysia, which refers to: flexible work arrangements, family care leave, extended maternity leave, nursing rooms, and childcare centres.
- The Malaysian government's focus is to explore the benefits of female participation for economic growth through filling the gaps in the workforce. Noticeably, TFR is not a stated aim.



Assessing Impacts

Ethnic Politics and Changing Demography

The ethnic split in TFR, with [2.4 for Bumiputerans](#) and around half that for [Chinese and Indian Malays](#), will have major implications on Malaysia's politics in the coming decades. Bumiputerans are set to grow by [3% of the population share by 2040](#), continuing a trend since the 1950s of shrinking the Indian and Chinese Malay population share. This will lead to increased dominance by the main Bumiputera political party, the Barisan Nasional (BN) coalition, and see falling influence for the Malay Chinese Association (MCA) and the Malay Indian Congress (MIA). It is possible this will also have legal and political impacts on the country's ethno-religious social contract and 1957 constitution, as an argument could be made that the Chinese and Indian blocs are becoming minorities in a Bumiputera state (which will make up 70% of the population in 2040, [up from 49% in 1957](#)), as opposed to being core blocs of Malaysian society. Alternatively, forging policy will not only be done more increasingly by BN coalition parties but it will be done with more focus to serve the largest and growing population. This effect has [already been seen in maternity care and policy](#), where the vast majority of births are of Bumiputera parentage.

Changing Socio-Economic Demography

Due to the projected continuation of falling TFR, the average age will continue to increase and is on track to push the country towards an ageing population. From 1957-2010 the percentage of the population over 65 years nearly doubled from [4.6% to 7.9%](#), a shift that is continuing to increase the ratio of economically inactive retirees to the working population. The World Bank's estimates suggest that Malaysia became an [ageing economy in 2020](#), coming as a result of its dropping TFR and rising life expectancy, and while it is currently marginal, Malaysia will begin to feel the effects of shifting age demographics. Since Malaysia's increase in life expectancy has been rapid over the past decades, there will likely be great pressure on the government to re-orientate healthcare spending and infrastructure around care for the elderly. It should be noted that while there is an increasing health and social cost burden due to a growing retired population, there will also be falling tax revenues as fewer new workers are [entering the workforce each year](#). Finally, this could also lead to the creation of a growing voting bloc as in many developed nations where the elderly caucus has different political interests. Even if an age-defined voting bloc does not emerge, it will have an impact on political agendas.

Deepening Macroeconomic Realities

The effect of Malaysia's ageing population is that there now exists major labour shortages, and as of 2018 foreign workers made up around [10% of the total workforce](#) and as much as [59% of agricultural workers](#). In 2017 the world bank reported that Malaysia's net migration stood at [250,000](#) which signals the growing necessity of foreign labour for their high-



growth economy. The necessity of foreign labour for the economy poses economic and social issues, such as during the pandemic when not only were foreign workers often stranded, but served as [epicentres of Covid-19 outbreaks](#). Poor governance during the pandemic has also meant the current administration is seeking to [address the critical labour crunch](#) with new work permits, signalling the attention needed going forward if Malaysia wishes to continue to meet its rigorous growth and developmental goals. This puts great pressure on governments going forward to advertise themselves as an open and attractive economy to move into, meaning not only is there wholesale demographic change, but there is clear economic restructuring accompanying it.

Extrapolating Impact

What we can learn from the case of Malaysia's falling TFR can be applied to peer countries facing similar realities such as Indonesia, the Philippines, and Thailand which all boast strong development, democratisation, and ethnic diversity. The expected impacts of disparate inter-ethnic TFR is a factor that should not be overlooked and is likely to be a trend seen more commonly in developing and newly developed nations that have high ethnic diversity, or several major ethnic blocs. Similarly, Malaysia's economic restructuring, specifically the growth in importance of foreign workers and the phenomena of an ageing population, is also a focus that other newly developed economies are likely to face, with falling TFR and rising life expectancy leading to labour shortages, rising social and health care burdens, and lower relative tax revenues.



Policy Recommendations: Key policies for combatting low TFR; How to break out?

Levi Cursham

The Context surrounding Policy Recommendations: Phenomena of Low Fertility

Low TFR is a recent phenomenon that started in the late 20th century and is projected to increase into the next century. As of 2022, [82 out of 189 nations](#) studied were found to have TFR below 2.1, and can therefore be classified as low fertility countries. This chapter, therefore, looks more broadly at the issue of low fertility and how its effects can be overcome, particularly in high-income countries where ageing populations are rapidly altering socio-economic structures.

In 1950, world fertility stood at [5.0](#) - far above the 2.1 replacement rate - and in 2020 stood at [2.5](#). The reasons for decreasing TFR can broadly be derived from changing socio-economic incentives, a fact that can be broken down and studied through basic metrics of development in education, healthcare, and gender development, as well as through a nation's economic progress. The policy suggestions presented, therefore, seek to counteract the impact of low fertility, while not reversing positive trends in development - particularly gender equality.

Policy recommendation: Building robust and attractive parental leave packages, alongside buttressing them with viable childcare plans.

One of the major trends in the modern economy is the introduction of women into the full-time workforce. Across this report, the increasing female participation rate has been consistently discussed as a factor in lowering TFRs. What this increasing participation rate is a reflection of is, in part, falling social restrictions on women regarding family commitments and the expectation of prioritising family life. An overarching policy aim, therefore, is to reverse the binary orientation surrounding having both a family and a career and restructuring work life to accommodate both flexibly. More than [tax breaks or family credits](#), which often have limited effects, combatting the impasse that has emerged around work-life balance and family-work prioritisation directly will allow for more real progress in increasing TFR.

In countries experiencing low fertility, UN findings stated that almost all governments instituted some type of [paid or unpaid maternity leave](#) with job security. Around the world, the availability and quality of maternity and paternity packages ranges widely. For example, US



federal law requires [12 weeks of secured, but unpaid, parental leave](#), while in Peru mothers are entitled to [14 weeks of paid and secured leave](#), and in Italy, women are entitled to [5 months of paid and secured](#) maternity leave.

This policy proposal draws on lessons from some of the most developed economies with the most advanced plans surrounding early childcare and parental leave. However, it is important to note that while policy responses are successful in some countries, their results are constricted by country or region-specific socio-economic circumstances. One example of this can be observed in [Bulgaria](#), which is experiencing high rates of young-adult emigration due to extremely poor economic conditions and unrestricted migration across the European Economic Area (EEA). As a result, despite efforts to create progressive [paid and secured parental leave](#) and [childcare options](#), TFR in Bulgaria has remained low.

The aim of this policy, therefore, is to address the growing phenomena of [high-to-equal female participation rates](#) in the workforce, by redesigning parental leave (which even in developed nations is [maternity focused](#)) and early years child-care, thereby creating a flexible environment for couples to pursue both work and family. Female participation has reduced between 1990 and 2021, from [51% to 46.9% worldwide](#), stressing the need for governments to formulate policy that caters to both gender equality and increasing fertility rates. The following sections would explore the four vital aspects needed to have a successful government policy on parental leave packages and childcare plans.

1. Parental leave should be both paid and secured

Firstly, parental leave must be both secured, and critically, paid. Paid parental leave has had a positive impact on fertility intentions according to [numerous studies](#). By legally guaranteeing new parents, particularly mothers, a significant period of paid and secured employment, such a policy removes financial anxieties. This policy approach would also have a particularly effective impact on countries with high-income disparity, [such as in the US](#), where paid and secured leave has traditionally been largely inaccessible for low-income strata. In determining the necessary length of paid leave, those countries that have gone the furthest, such as Sweden, show guidance. Sweden, for example, offers 480 days total of paid and secured leave.

One major input that should be considered when determining the length of paid and secured leave packages is the ongoing debates in health and social studies. For example, it was found that [less than eight weeks](#) of paid and secured maternity leave was linked with decreased physical and mental health, [while over 12 weeks](#) of paid leave returned a higher vaccination uptake. Similarly, the child's likelihood of being re-hospitalised was reduced by [51%](#) in comparison to mothers with no leave. Such studies are supportive of longer paid and secured parental leave terms.



2. It should be *parental* in approach

A secondary strength of the Swedish system, which is seen elsewhere in the world to varying degrees, is its understanding of ‘parental’ leave, instead of maternity leave. This allows for two parents to share the prospect of early childcare, giving the mother greater flexibility when making economic and career-oriented decisions. In Sweden, both parents receive [240 days of leave](#) which can be taken sequentially, meaning that not only does the child receive 480 days (c.70 weeks) of care, neither parent is required to give up the full amount of career time. By equalising the burden between both parents, progress towards gender development goals and female labour force participation rates are not affected, while a major socio-economic barrier to having children, particularly in high-income and rising medium-income countries, is removed. In the cases of single parents, Sweden gives [all 480 days](#) to that parent.

3. It should be flexible and transferable

Building upon this, parental leave should be flexible to allow parents to subdivide and allocate their leave to their partner should they wish to do so. The provision of flexibility in how parents use their parental leave will increase the effectiveness of the policy. The broader policy aim is to give parents the option to have children *without* having to give up career prospects. In this sense, the policy should also not include a large **minimum** period of parental leave, meaning parents are not obliged to take long periods away from work. The policy should therefore be underpinned by flexibility and will therefore require transferability and a high degree of parental choice.

4. It should be supported with strong child options afterwards

Finally, a critical component of this policy’s success is the provision of affordable child-care options following the period of parental leave. If both child-care infrastructure and affordability are not provided, then the policy will likely have a minimal impact on the fertility intentions of young couples. A comprehensive system of childcare should offer publicly funded services from the point at which parental leave ends until children begin formal education.

