

Six Decades of Change: The Correlation between Fertility Rates, Economic Growth, and Health Globally

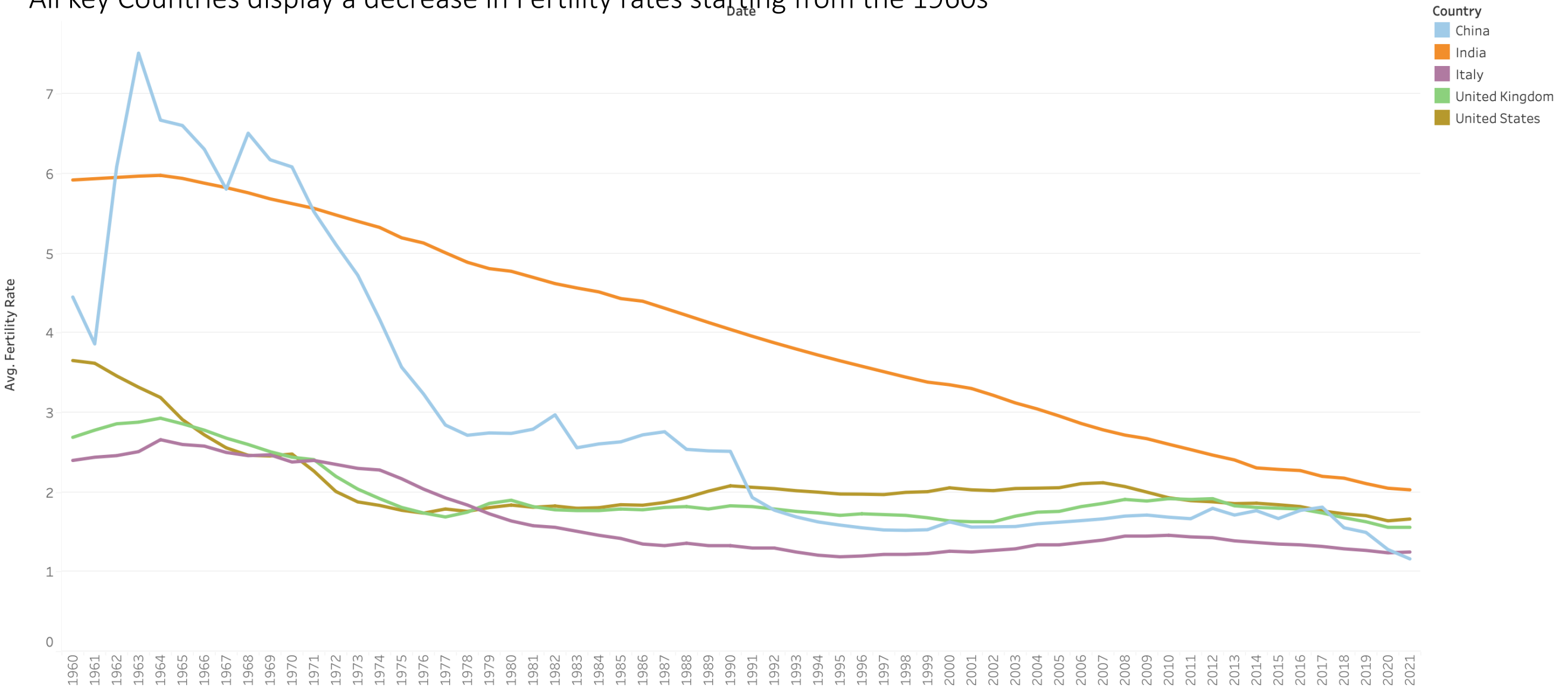
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Fertility Rate Trend in key Countries over time

All key Countries display a decrease in Fertility rates starting from the 1960s



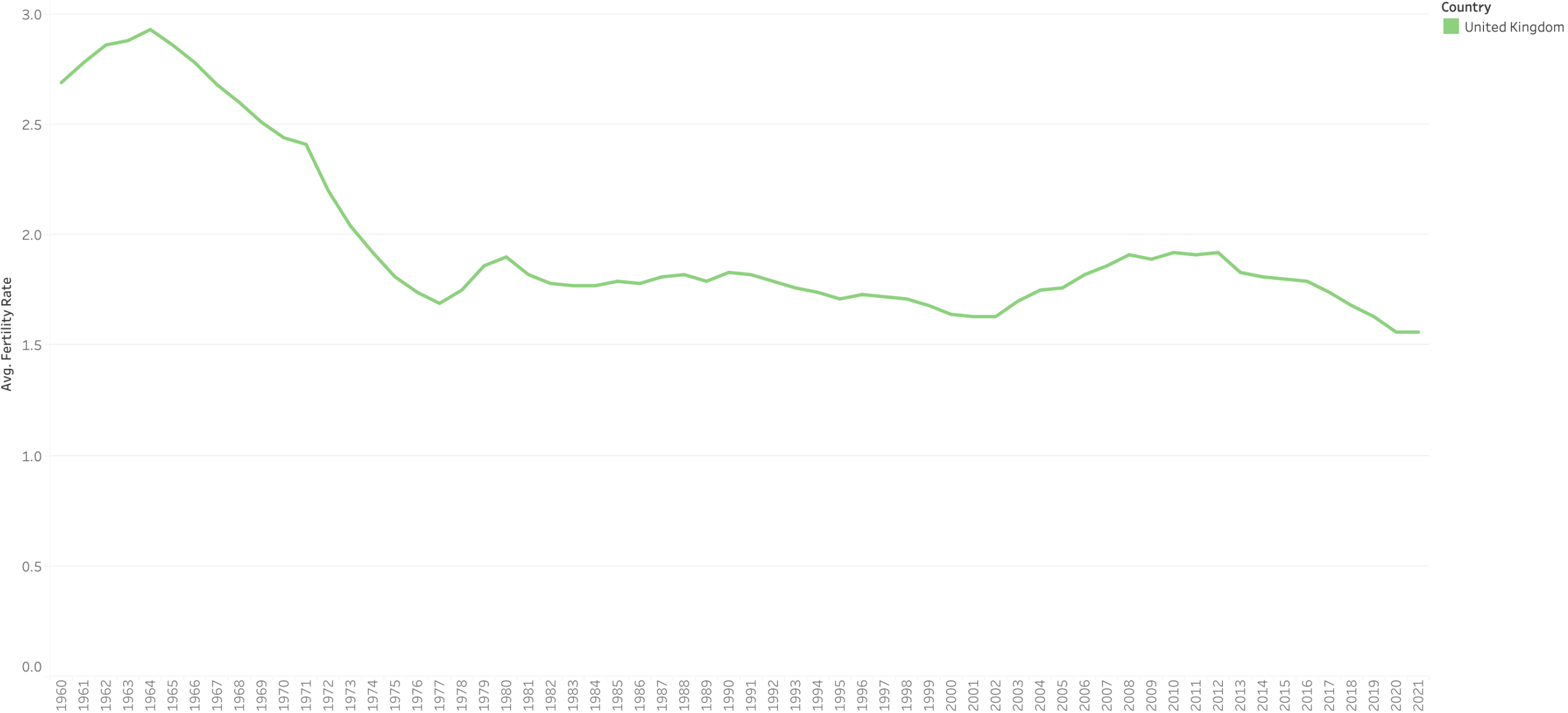
The relationship between a country's urbanization/development and its fertility rate is multifaceted, often characterized by a decrease in fertility rate as urbanization and development progress.

Key factors influencing this trend include improved access to education and healthcare, particularly in reproductive health, leading to greater control over family planning decisions. Urban living often shifts priorities, partly due to higher living costs and limited space. Significantly, enhanced healthcare in urban and developed areas reduces child mortality rates, decreasing the need for more kids as a hedge against child loss.

This complex interplay of factors illustrates how development and urbanization can lead to fundamental changes in family size and structure. In turn, these dynamics help us explain the common trend we can see from the graph above.

Fertility Rate trend in the United Kingdom over time

The downward trend in the UK's Fertility Rate is consistent that of other developed Nations

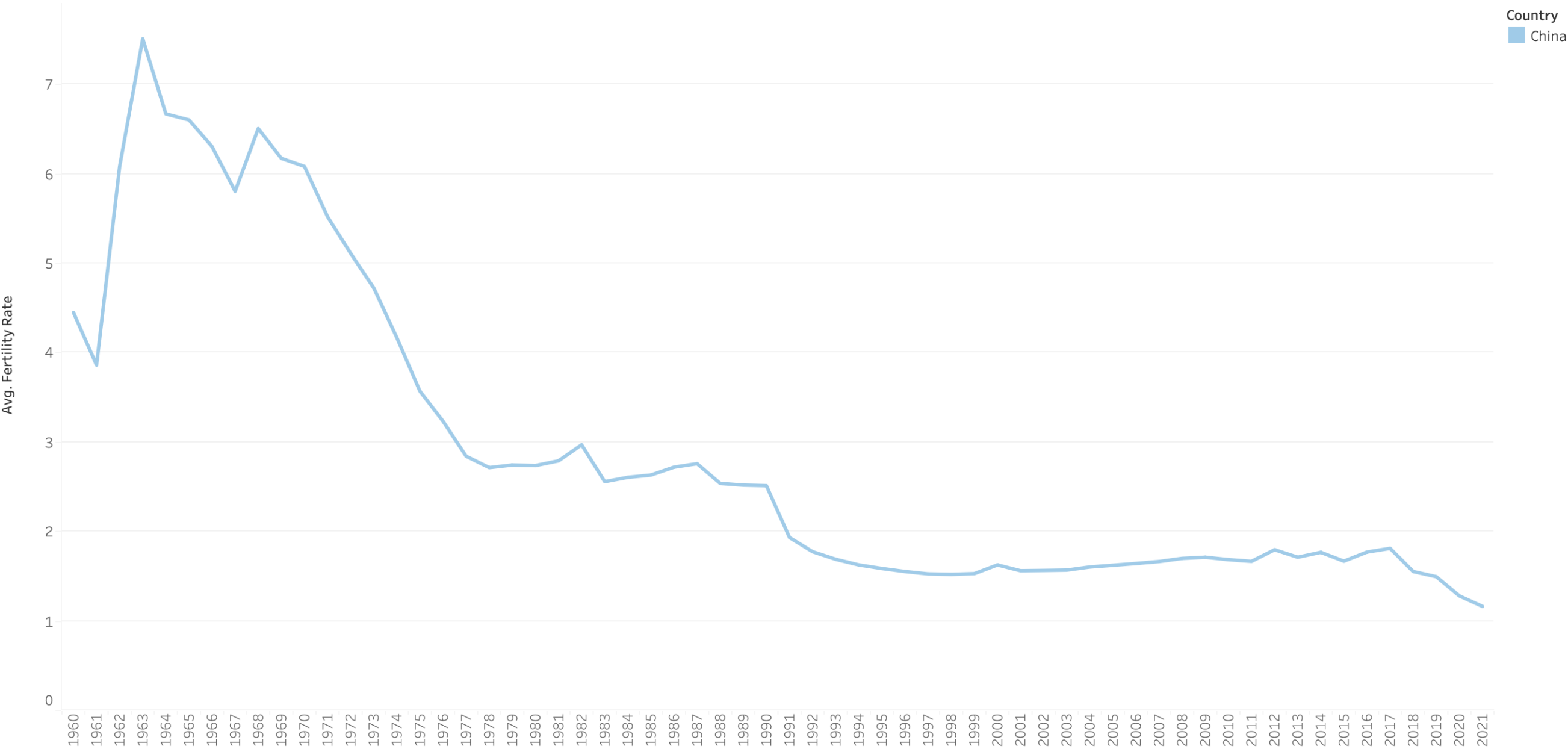


By looking at this graph we can see there's a steep decline in fertility rates from the mid-1960s until the mid-1970s. This was primarily due to increased access to contraception, notably the contraceptive pill. This period also saw significant shifts in social attitudes, with a greater focus on women's rights, feminism, and the importance of career and education for women, leading many to delay or reduce childbearing.

This overall downward trend in the UK reflects the impact of socio-economic changes and technological advancements. These factors, coupled with the high cost of raising children in an advanced economy, resulted in the continued decrease in fertility rates seen in the graph.

Fertility Rate trend in China over time

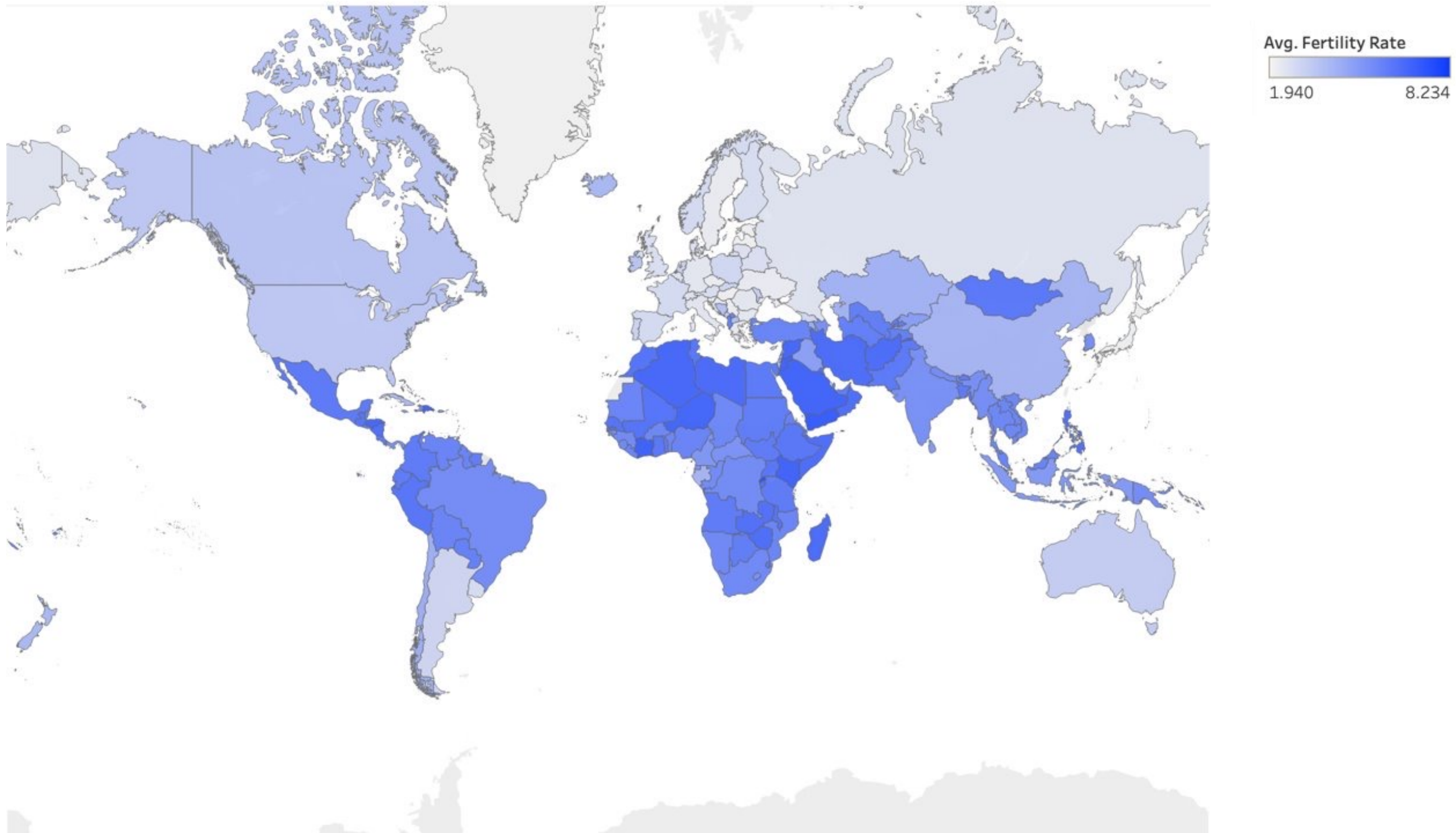
China displays a very steep decline in Fertility Rate in the period 1960-2020



China initiated its stringent family planning policies in the early 1970s with a campaign named “Later, Long, Fewer”. Moreover, in 1980 China introduced the "One-Child Policy", which was a population control measure to aimed to limit the country's rapidly growing population. Therefore, it is likely that the extreme steepness of decline of its fertility rate was (at least partially) caused by such policies.

Snapshot of Fertility Rates in 1960 worldwide

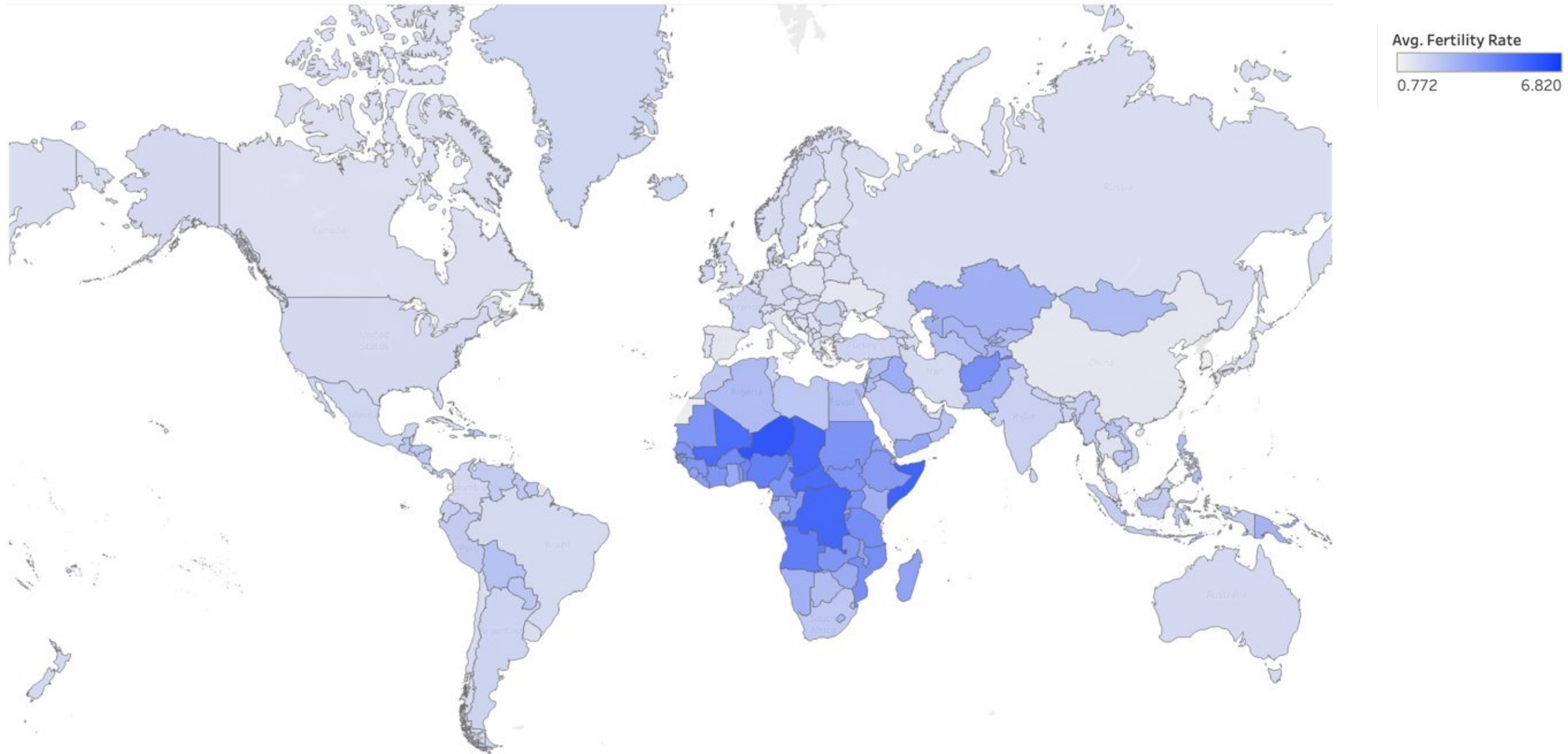
Several Countries displayed high Fertility Rates in 1960



Countries belonging to Africa, Middle East, and Latin America show the highest Fertility Rates. Such countries developed later compared to more advanced Nations in the Western world

Fertility Rates in 2021

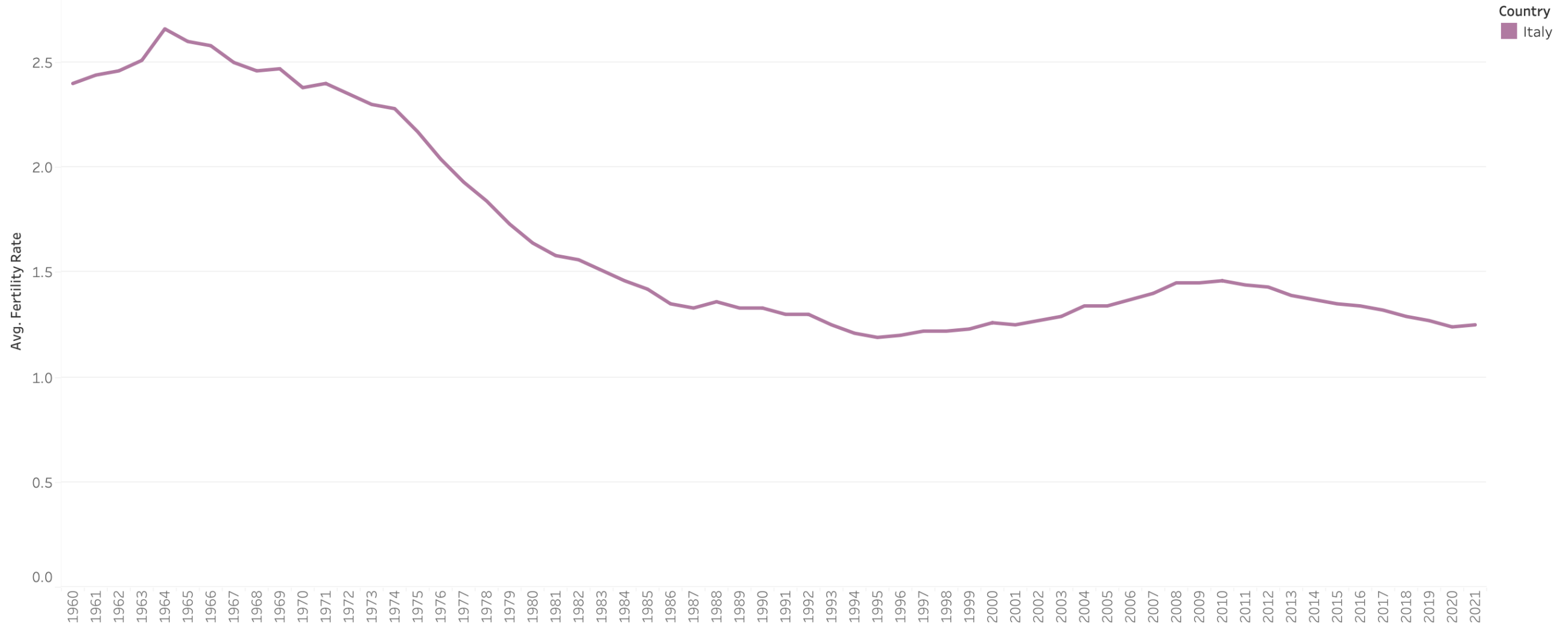
African Countries are unfortunately among the least developed worldwide and, as we would expect, they display the highest Fertility Rates globally



In the present era, a significant trend is taking place in many developed countries: the fertility rate has fallen below the replacement rate. The replacement rate, typically set at of 2.1 children per woman, is the level of fertility required for a population to maintain its size from one generation to the next. This trend can lead to a gradual decline in the population over time, as the number of births is insufficient to replace the number of individuals who pass away.

Fertility Rate trend in Italy over time

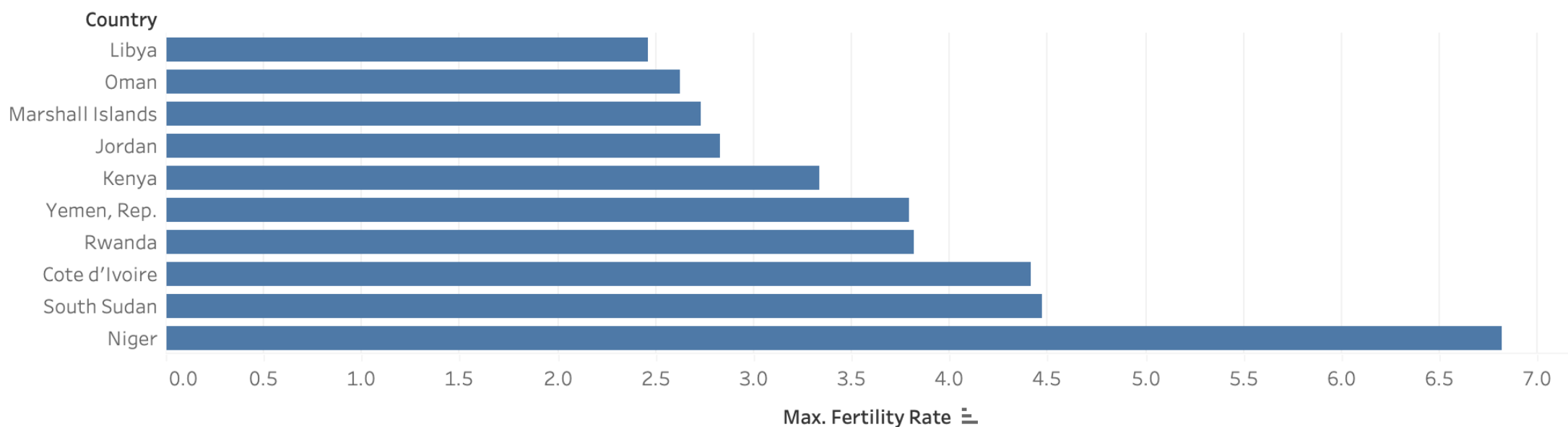
Italy displays a decline in Fertility Rate starting from the mid-1960s



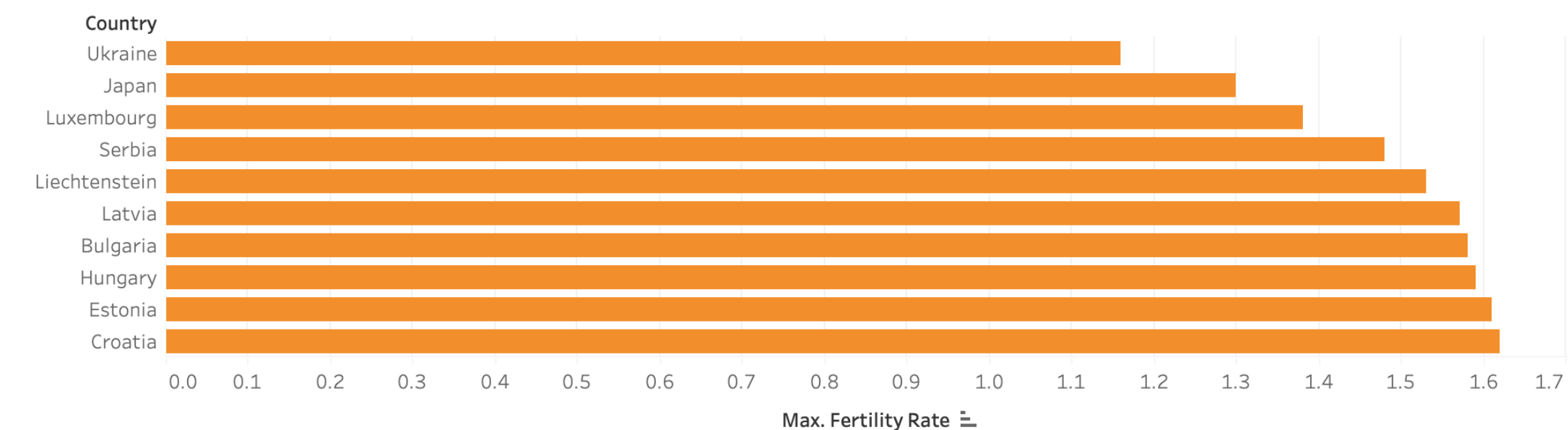
With fewer children being born, the population will tend to age as a larger proportion of people belong to older age groups. This can lead to demographic imbalances, with potential economic and healthcare implications. For instance, a reduced workforce can lead to challenges in funding social security systems, potentially impacting the financial stability of pension and retirement programs. A smaller workforce can lead to a reduction in the government tax revenue and thus, constrain the government's ability to fund public services and infrastructure.

In response to population decline, immigration becomes a critical strategy for some countries. Well-designed immigration policies can play a crucial role by attracting newcomers to address labor shortages, maintaining economic growth, supporting social security systems, and fostering innovation.

Among the top 10 Countries with highest Fertility Rate, 6 belong to Africa, 3 to Asia, and 1 to Oceania
10 Countries with highest Fertility Rate

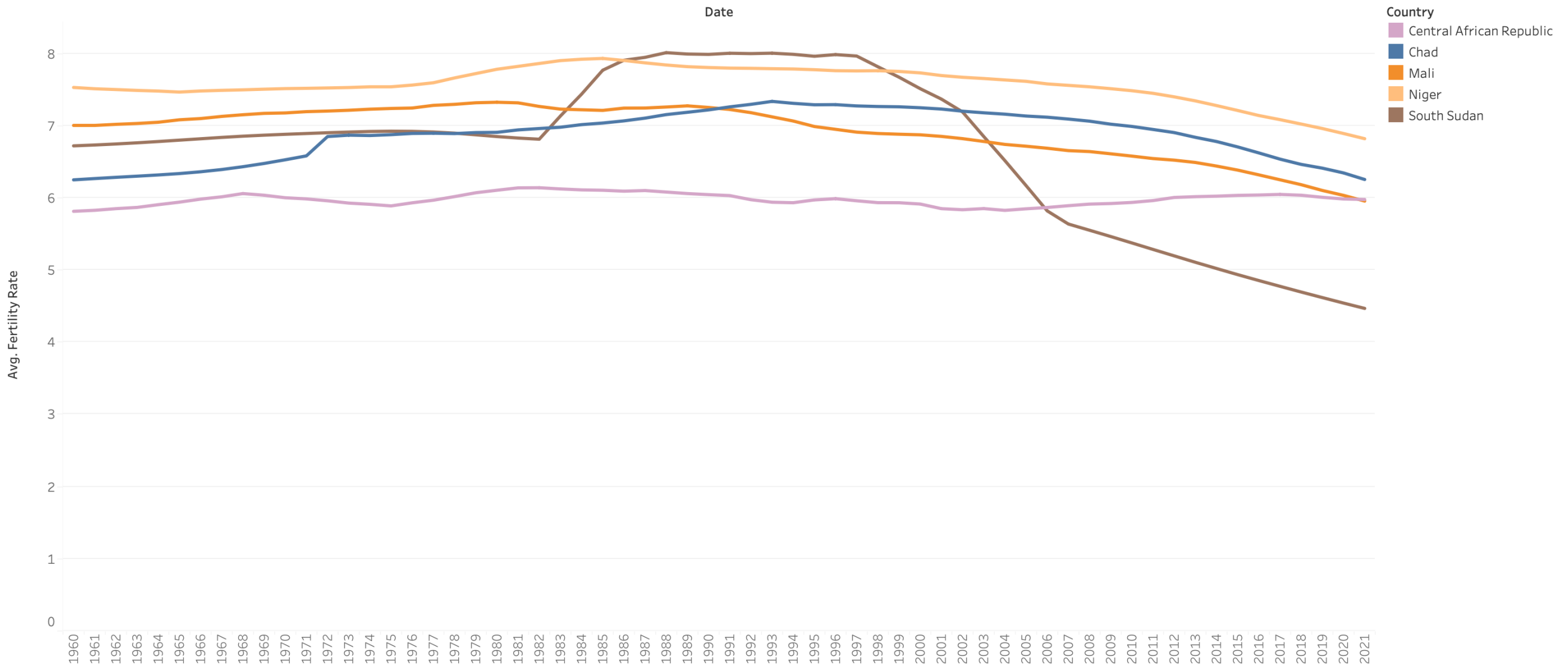


Among the top 10 Countries with lowest Fertility Rate, 9 belong to Europe and 1 to Asia
10 Countries with lowest Fertility Rate



Fertility Rate trends in 5 underdeveloped Countries over time

All Countries considers in this graph display a high Fertility Rates for the entire period 1960-2021, with a slight decline from 2000

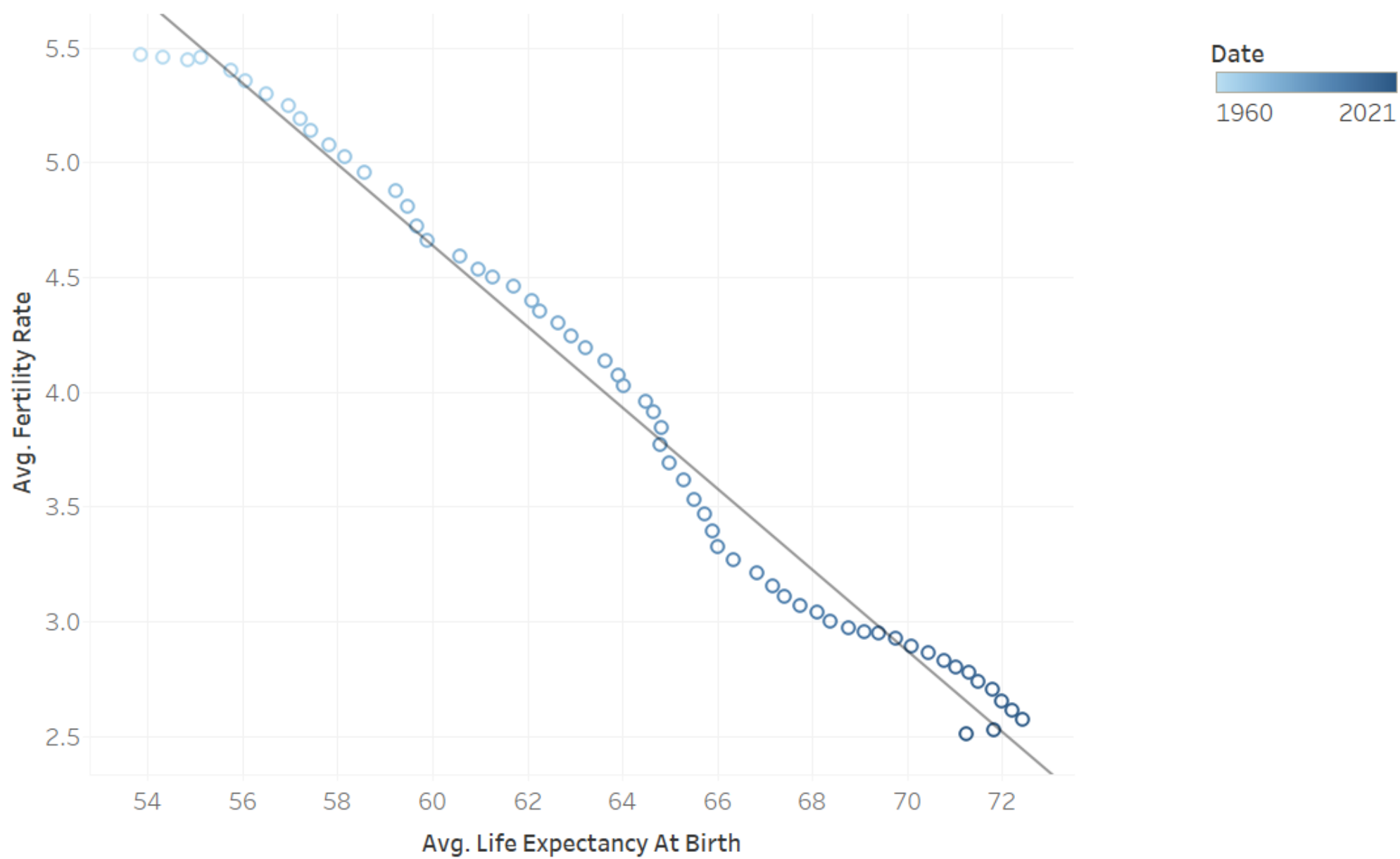


The fertility rate trends over time in the least developed countries, as shown in the attached graph, exhibit distinctive patterns when compared to more developed nations. In these countries, fertility rates remain high, and while there has been a gradual decline, it is not as steep or consistent as seen in developed countries.

Such difference in fertility rate trends (compared to developed counterparts) is caused by the time lag in the urbanization and advancement of African Countries. In fact, such Countries are currently at an earlier stage in the development process. In turn, as we would expect, these Nations also have higher fertility rates, which are typical of underdeveloped areas.

Avg Fertility Rate vs Avg Life Expectancy, 1960-2021

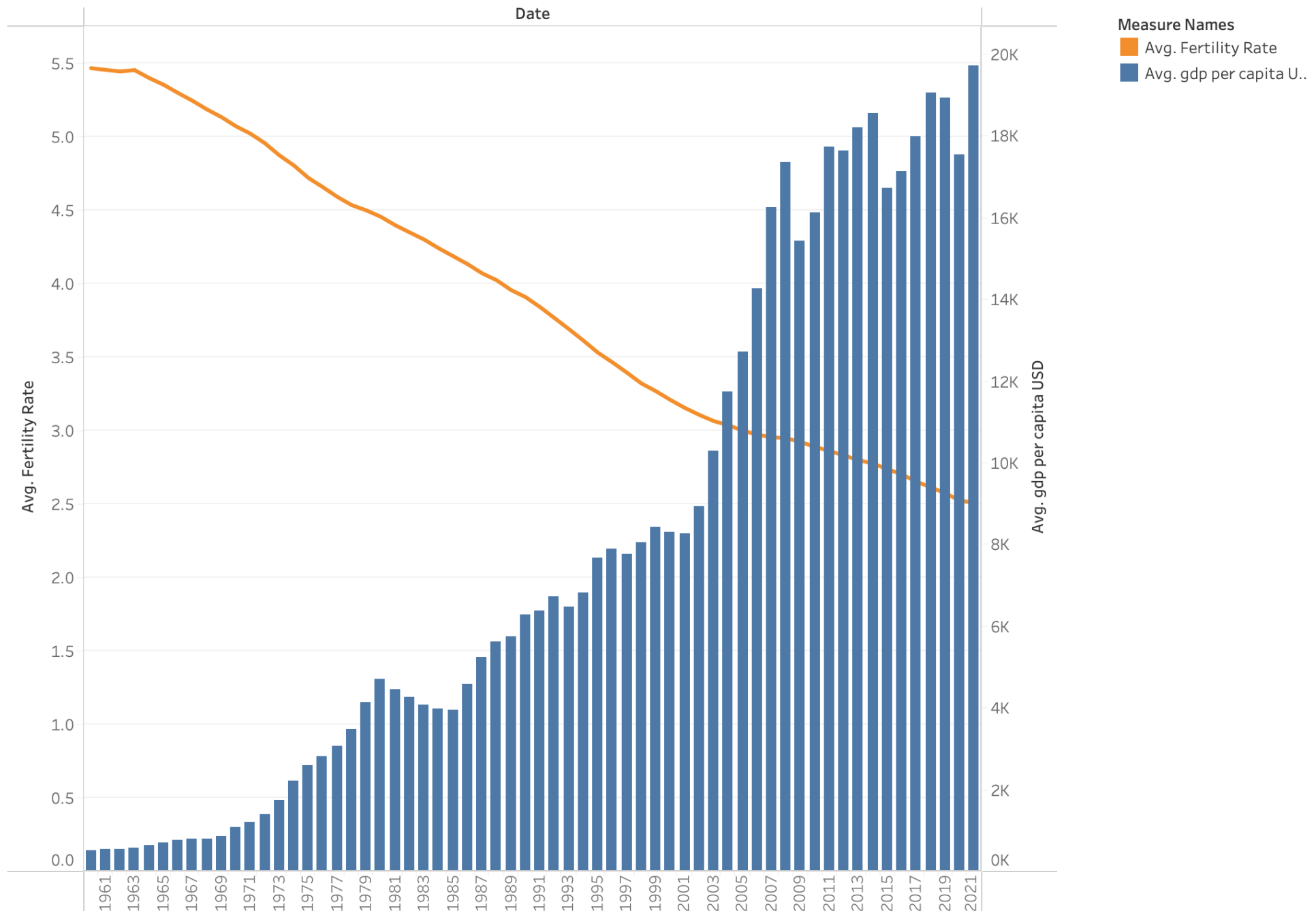
Throughout the years, fertility rate has dipped while life expectancy has steadily increased



This graph shows an inverse relationship between fertility rate and life expectancy. As life expectancy increases due to advancements in healthcare, better living conditions, and disease control, family planning decisions change. As societies progress and mortality rates decline, the need for larger family sizes diminishes. Increased access to education, urbanization, and changing societal norms contribute to a desire for smaller families. Individuals focus on quality of life, career opportunities, and education for their children over the sheer quantity of offspring.

Global Average Fertility & Average GDP Per Capita

The global trend shows us that as GDP Per Capita increases the Avg Fertility Rate drops

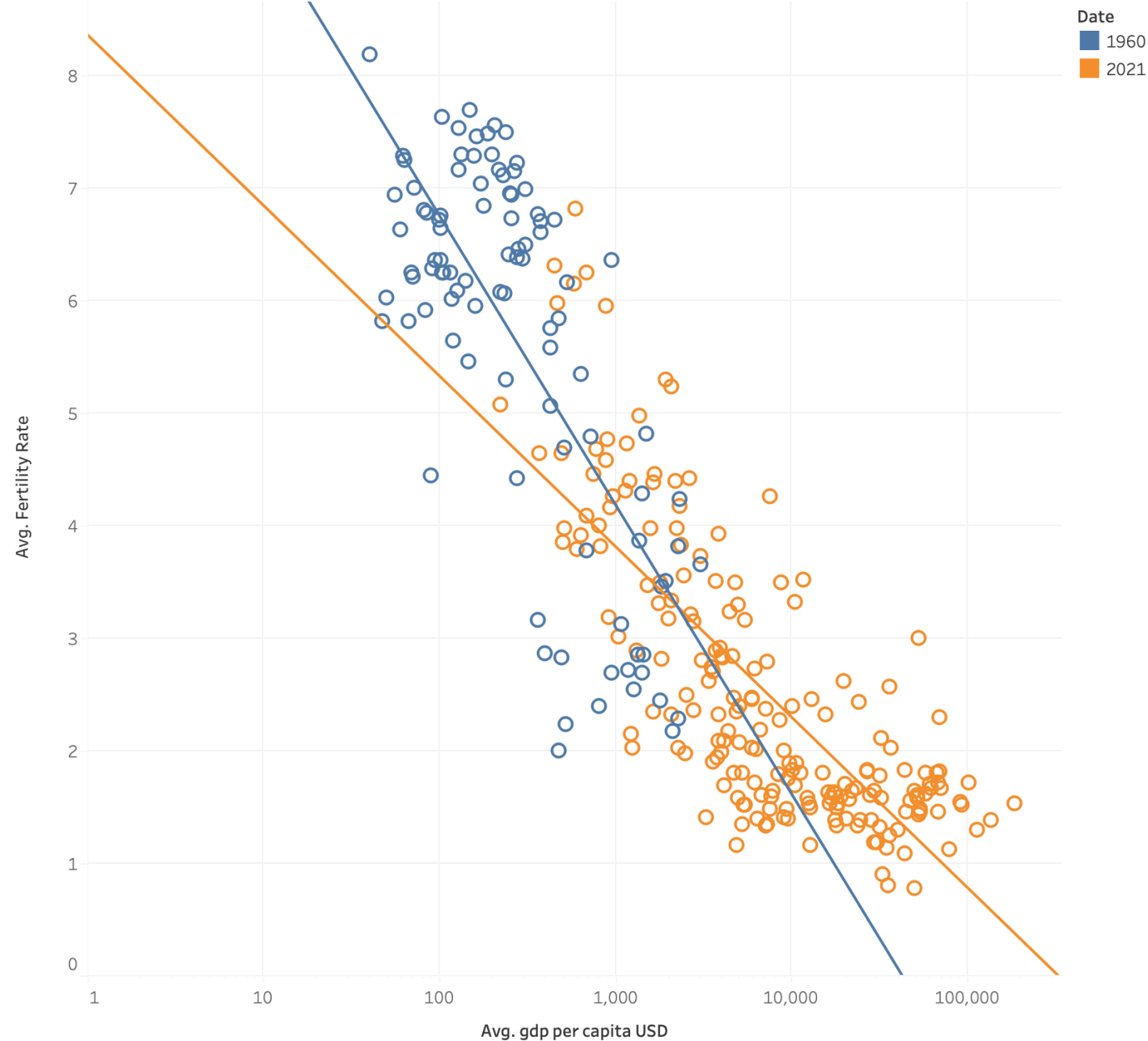


From 1960-2022, the world has seen an overall GDP growth from \$508 per capita to \$19,712 per capita, an approximate 39 times growth. A lot of aspects of society have been improved including better education, increased urbanization, and greater employment opportunities.

As prosperity grows, families may prioritize quality of life over larger family sizes, leading to a voluntary reduction in birth rates. Indeed, we can see from the chart that the average fertility rate dropped from 5.5 in 1960 to 2.5 in 2020.

Avg Fertility Rate vs Avg GDP per Cap, 1960 vs 2021

The relationship between fertility rate and GDP per capita can be seen in both years: 1960 and 2021. However, this relationship is weaker in 2021 (since the trend line is flatter)

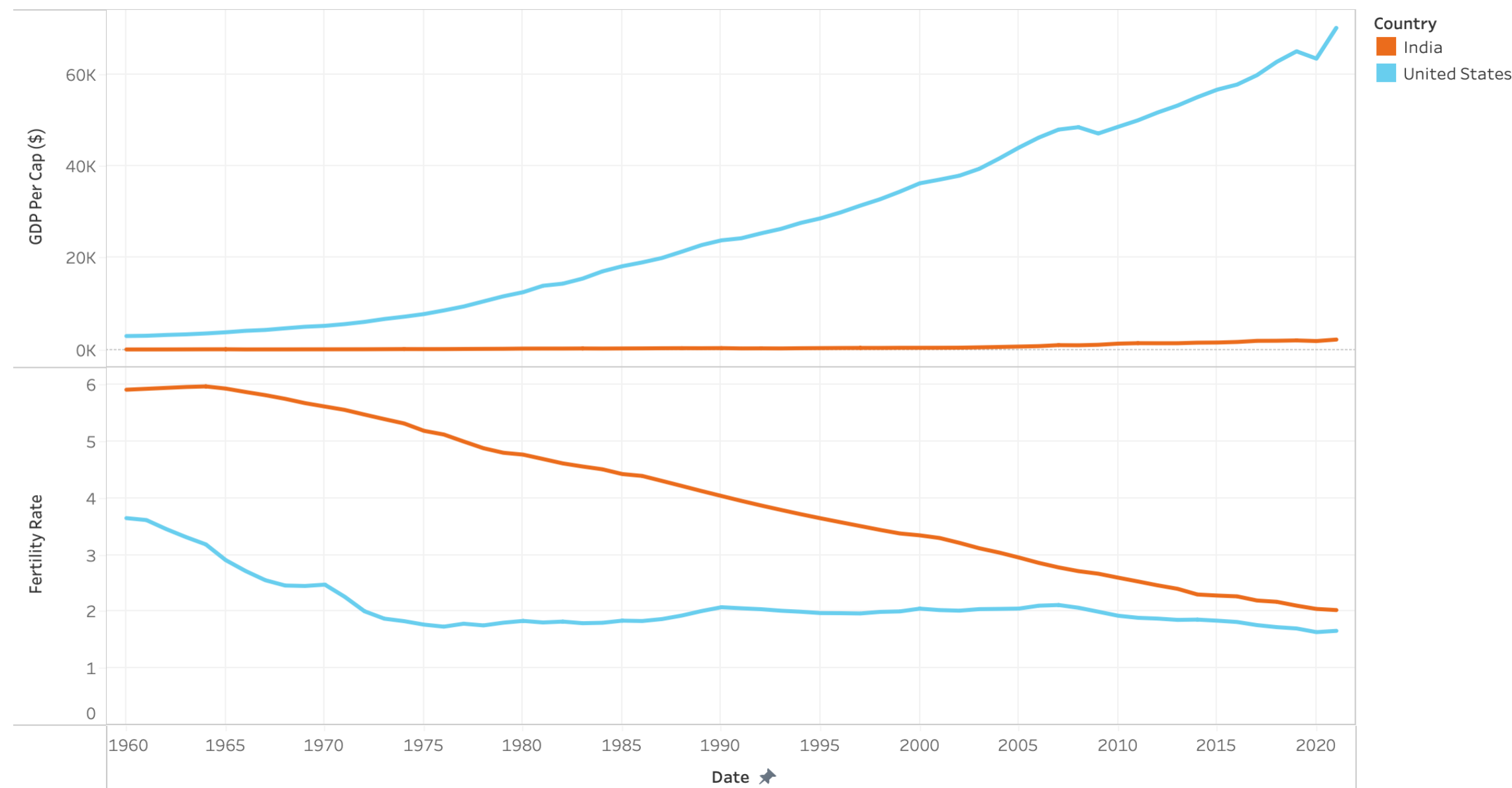


The downward-sloping trend lines for both years indicate a negative correlation between GDP per capita and fertility rates; as the GDP per capita increases, the average fertility rate tends to decrease.

The flatter line for 2021 indicates that the relationship between Fertility Rate and GDP per capita is now weaker compared to 1960

GDP Per Cap (\$) & Fertility Rate over the years

Fertility Rates can be seen dropping faster for India even with a lower GDP growth



In examining the GDP per capita and fertility changes in the US and India, an intriguing observation emerges. These changes aren't always in direct correlation. The United States, despite its substantial rise in GDP per capita over the past half-century, hasn't seen much fluctuation in its fertility rates. On the other hand, India, while experiencing a notable decrease in fertility rates, hasn't witnessed as significant a rise in GDP per capita compared to the US. This discrepancy underscores a vital point: economic growth and fertility rates don't always move in tandem. Various other factors, including cultural values, government policies, and social norms, play a crucial role in shaping these trends.