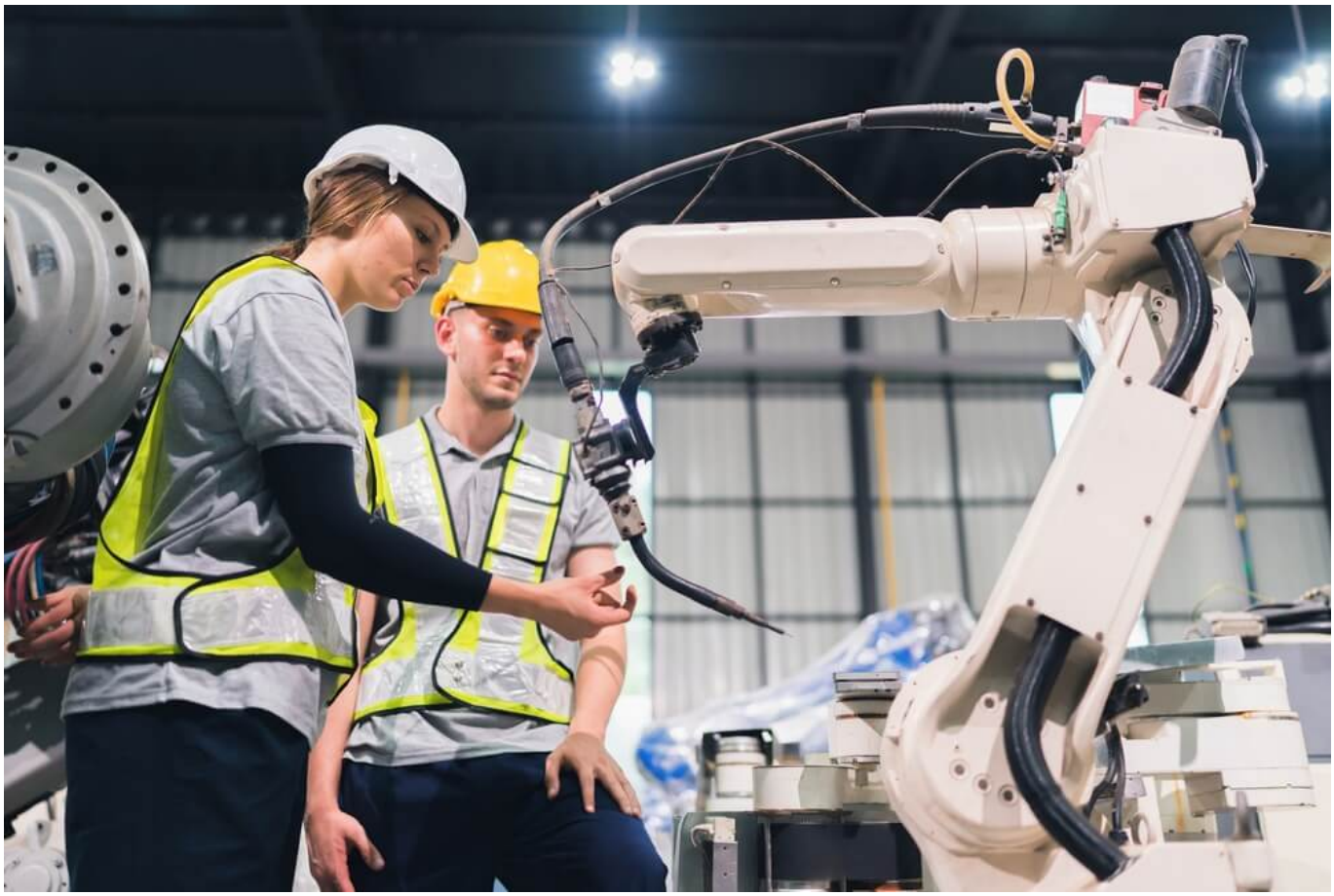
TA Tomorrow's Affairs
Analysis of today
Assessment of tomorrow

By: Andrew J. Scott

Economies have always adapted to an aging population, and will continue to do so



The global demographic transition, characterized by declining birth rates and rising life expectancy, has been one of the most consequential transformations of the past century, with population aging fueling a steady stream of gloomy economic forecasts.

If academic economists, international organizations, and national governments agree on just one thing, it is that an aging society inevitably leads to economic sclerosis.

The experience of the past 70 years, however, offers surprisingly little support for this pessimistic consensus.

Over that period, declining birth rates have not slowed overall GDP growth. Populations may have aged and grown more slowly, but economies have not necessarily followed suit.

The baseball legend Lawrence "Yogi" Berra's famous quip—"It's tough to make predictions, especially about the future"—is worth bearing in mind when considering any long-term economic projection.

Forecasting the effects of AI on growth or government debt, for example, is fraught with uncertainty given how recently the technology has emerged and how rapidly it is evolving.

But demographic change is different, because we have a wealth of historical evidence with which to assess its economic consequences.

Economies respond systematically to declining fertility

In recent work with Nobel laureate economist Daron Acemoglu and his MIT colleagues David Autor and Keelan Beirne, we draw on decades of data on demographic change across countries and regions to examine how variations in birth rates and shifts in population age structures affect economic performance.

The results are striking. Across countries and US commuting zones, areas with lower fertility rates experienced faster growth in GDP per capita or earnings per person, while overall GDP growth and total earnings were largely unchanged.

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Economies appear to respond systematically to declining fertility and the resulting increase in the ratio of older to younger workers: productivity and capital investment rise, and activity shifts away from labor-intensive sectors toward high-tech exports.

Driving these trends is a shift in innovation and patenting toward labor-saving technologies, including automation and information and communications technologies (ICT).

In other words, while demographic transitions lead to fewer workers and slower population growth, technological progress raises the productivity of those who remain, offsetting the shrinking workforce and sustaining GDP growth.

Demographic dividend

The technological response to declining fertility rates is distinct from the familiar story of an initial demographic dividend.

In the early stages of a demographic transition, according to the traditional view, countries benefit from having fewer children while the share of older people remains relatively small.

This, in turn, increases the relative size of the working-age population and boosts GDP growth.

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Lower fertility can reinforce that dividend by encouraging more women to enter the workforce and increasing investment in each child's education.

But the dividend is temporary. As low birth rates persist and life expectancy rises, the share of older people eventually increases, creating the economic burden typically associated with an aging population.

The mechanism we identify points in a different direction. Labor scarcity, we find, can encourage technological change and generate productivity gains that last long after the initial demographic dividend has faded.

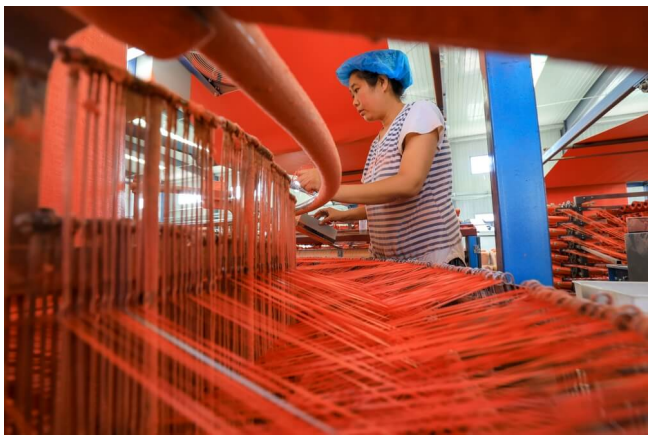
China's demographic transition

China appears to be a case in point. The country is undergoing one of the fastest and most dramatic demographic transitions in history, with its working-age population (aged 15–64) projected to fall from a peak of roughly one billion to around 300 million by 2100.

It is hard not to draw a connection between this trend and China's extraordinary embrace of robotics.

The country's stock of industrial robots doubled between 2021 and 2024 and now accounts for roughly half the global total.

There are, of course, good reasons to question whether the past really is prologue.



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Some countries, China among them, face demographic change more rapid and far-reaching than anything we have seen in the past 70 years.

Technological adaptation may offset much of the resulting economic pressure, but perhaps not all of it.

Even so, discarding the evidence of the past 70 years when forecasting the next 70 risks allowing instinct to substitute for analysis.

Too often, pessimism about aging seems driven as much by the associations the word evokes as by hard-nosed economics.

It is as if the economy were destined to age along with the population, passing from youthful vitality to frail senescence and inevitable decline.

Uncharted demographic territory

To be sure, we are heading into uncharted demographic territory. The share of Americans over 65, for example, is projected to rise from 17% to 29% over the next 75 years.

But that share more than doubled from 8% to 17% during the previous 75 years without slowing economic growth, so why should we automatically assume it will be different this time?

Economies have consistently proven able to adapt to demographic change

Whether it is technology responding to labor scarcity, institutions adjusting to rising life expectancy, or greater investment in human capital, economies have consistently proven able to adapt to demographic change.

This ability will likely do more to shape our economic future than the outdated assumption that an aging society must produce an aging economy.

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