

# Dimensions of disruption: Demographics

The world is being transformed at an unprecedented pace. The interplay between technological, political and economic drivers is fuelling what we describe as “disruption”, with destructive and creative forces acting in tandem. This transformation can be summed up with the dimensions of deglobalisation, digitalisation, demographics and decarbonisation.<sup>1</sup>

The fourth and final part of my study sheds light on the process of shifting demographics.



**Dr Hans-Jörg Naumer**  
Director,  
Global Capital  
Markets & Thematic  
Research

## “D” for disruption: Demographics

Today, our planet is home to more than 8 billion people. This figure was just under 6 billion at the turn of the millennium and a little over 3.5 billion as recently as the 1970s. The human population crossed the 1-billion mark for the first time as the world entered the 19<sup>th</sup> century.<sup>2</sup> When Thomas Malthus predicted in his “Essay on the Principle of Population” in 1798 that humanity would starve to death because agricultural production would not be able to feed a rapidly growing population, humans numbered only 931 million. Obviously, Malthus’ prophecy never came true. Despite accurate predictions of a sharp rise in the population, he could not foresee the even greater advances in agricultural productivity and, hence, food production.

One almost equally relevant fact, which never ceases to astonish, is that during this phase of exponential population growth, the proportion of those living below the threshold of absolute poverty actually fell dramatically. To illustrate this, consider the following statistics (see figure 1). As recently as the dawn of the 1980s, 45% of the global population was living in absolute poverty (in other words, almost every second person was affected). Meanwhile, this share has fallen to below 10%. The 1980s were also the decade in which the Cold War – the division of the world into “capitalist”

More on the dimensions of deglobalisation, decarbonisation and digitalisation:

### → #GreenGrowth – the green wave of growth

Since the Industrial Revolution at the end of the 18<sup>th</sup> century, five long cycles of growth can be identified, each triggered by the emergence of new technologies...

### → Degrowth or “green growth”?

The pandemic year of 2020 notwithstanding, CO<sub>2</sub> emissions continue to grow. While the pace of growth has slowed, we need to reverse the trend...

### → Deglobalisation

The world is being transformed at an unprecedented pace. The first part of this study on the dimensions of disruption sheds light on the process of deglobalisation.

### → Digitalisation

The sweeping tide of digitalisation is a result of rapid improvements in computing power and a simultaneous and dramatic fall in the prices of storage hardware.



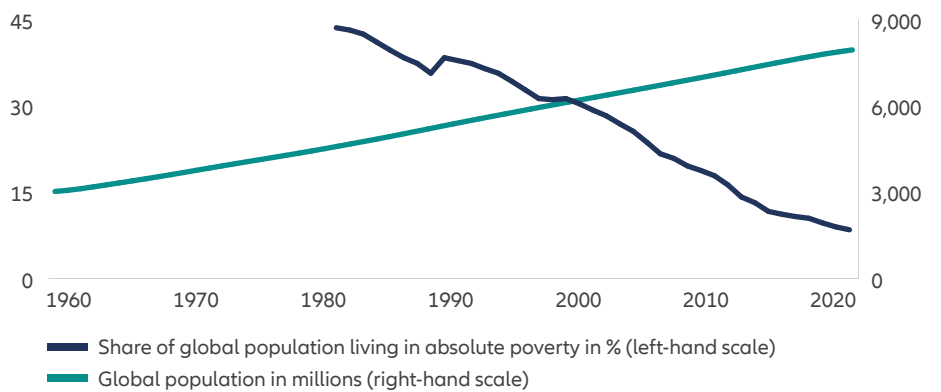
and “socialist” countries – came to an abrupt end and the erstwhile socialist nations turned towards free market systems and global trade. It was, in effect, a wealth creation programme on a vast scale.

And the human race has not even peaked yet. According to the United Nations’ medium scenario population forecast of 2022, there will be 10.4 billion people on earth in 2100. With the exception of small increases in North America, Africa will be the only continent to see demographic growth.

**From a demographic standpoint, there are two interlocking trends here:**

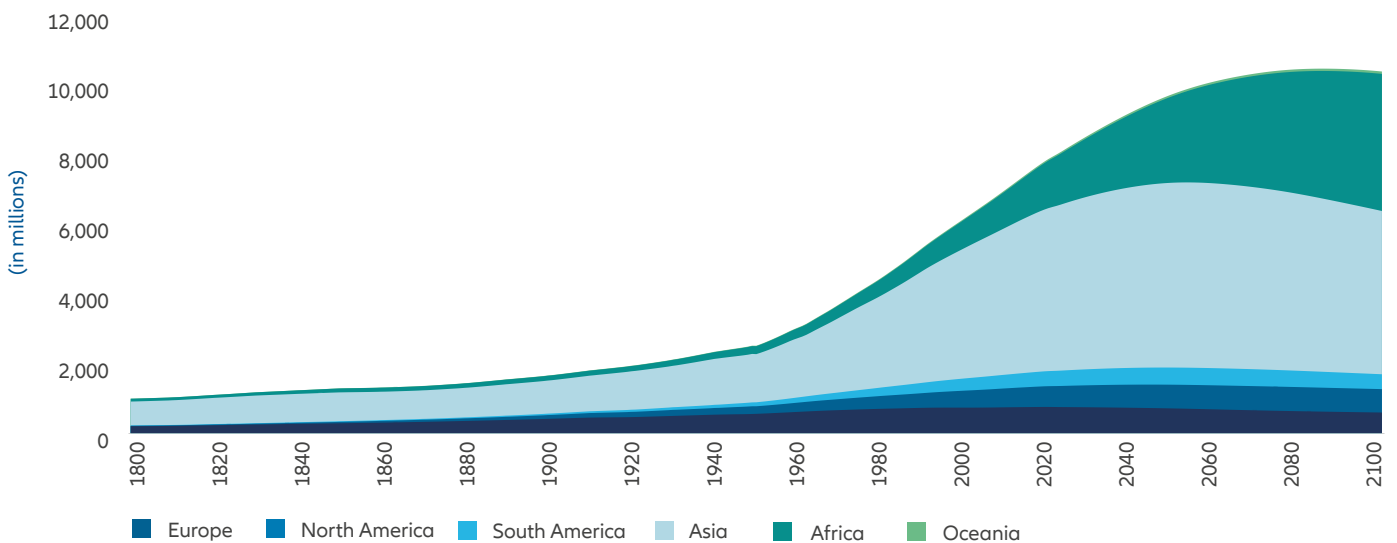
1. Not only is the world projected to keep growing until 2100, albeit the overall pace of growth is expected to level off (see figure 2),
2. people are also going to be living to an older age.

**Figure 1: Global population to grow – share of those in absolute poverty to fall**  
Share of global population living from less than US\$1.90 per day (2011 prices) or US\$2.15 per day (2017 prices; adjusted for purchasing power parity in each case).



Sources: Refinitiv Datastream and AllianzGI Global Capital Markets & Thematic Research. Data as of 31 July 2023

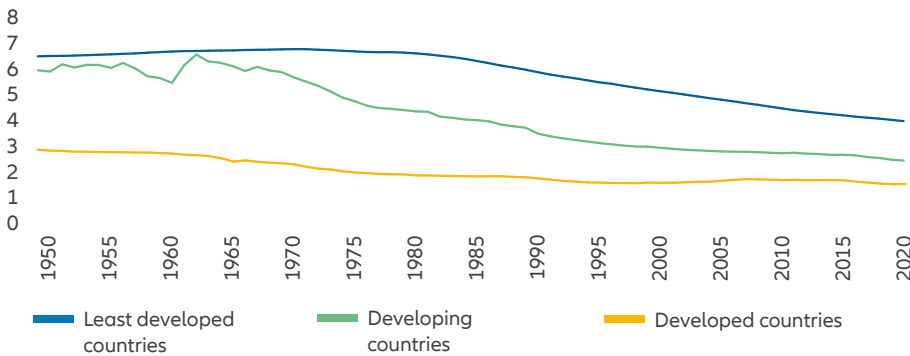
**Figure 2: Global population by continent incl. UN projections**



Sources: Our World in Data and AllianzGI Global Capital Markets & Thematic Research, data as of September 2023

**Figure 3: Fertility and stages of development**

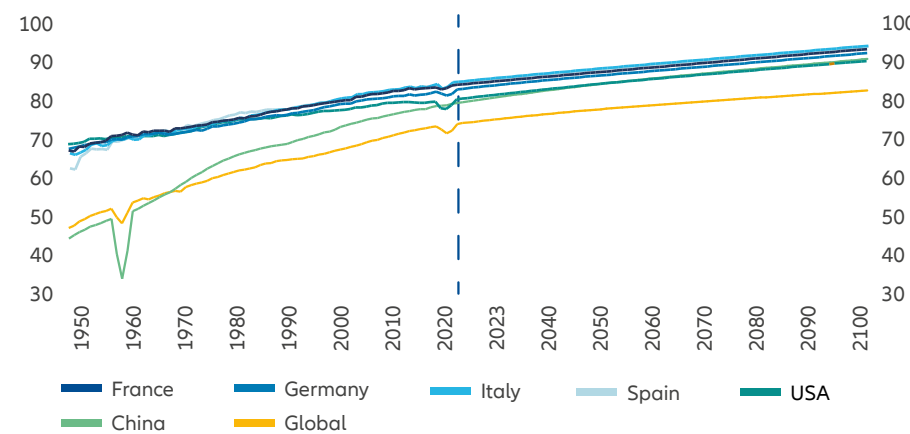
Number of live births per woman by level of development (in %)



Sources: Our World in Data and AllianzGI Global Capital Markets & Thematic Research. Data as of: November 2022

**Figure 4: Life expectancy at birth**

Men and women



Sources: Allianz Global Investors, Global Capital Markets & Thematic Research, Our World In Data, United Nations – Population Division (2022), data as of September 2023

**Two developments are responsible for this:**

1. Fertility rates have declined significantly in all countries. That is to say, the number of live births per woman of childbearing age has decreased and, according to UN projections, will continue to fall. This trend can be observed in every region (see figure 3).
2. People are living increasingly longer lives. A child born in 1950 could be expected to live to an average age of 46.5 worldwide; in 2022, this had risen to 71 and the trend still points upwards (see figure 4).

More specifically, at the start of the 1970s, shortly after the publication of Paul Ehrlich’s seminal book “The Population Bomb”, the average global fertility rate was 4.9. Since then, it has declined to 2.3. However, even maintaining a stable population would require a rate of 2.1.

What is striking about this data is a sharp dip after the contraceptive pill became available. A general rule of thumb can be derived when breaking down these figures into income brackets: the wealthier the region, the greater the decline in the number of children per woman. In the least developed countries, the fertility rate fell from around 6 at the beginning of the 1970s to 2.4 in 2020. In developed countries it had always been much lower and shrunk over the same period from 2.3 to 1.5.

**China** is a particularly notable case in point here. Mao Zedong’s one-child policy is intertwined with the opening up of the country to global markets and Deng Xiaoping’s economic reforms. In 1950, the Chinese fertility rate was 5.3 and has effectively collapsed over the last 70 years to a rate of only 1.66 in 2022.<sup>2</sup>



**What is the economic impact of these demographic shifts?**

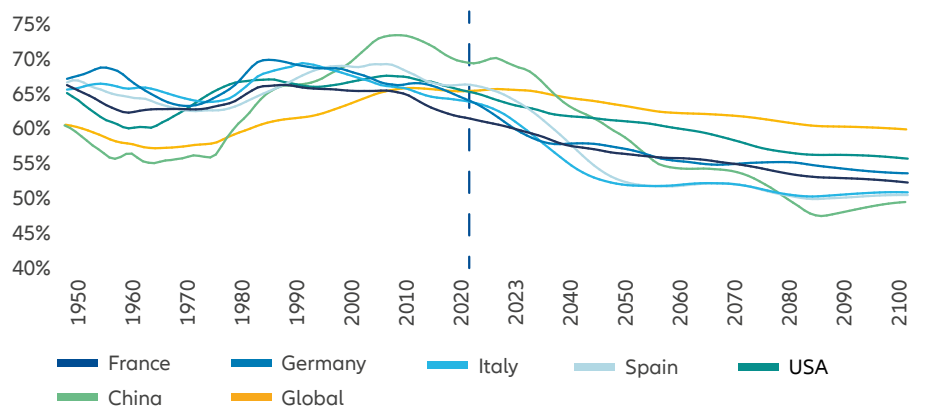
- Demographic trends essentially act as a driver for growth, even if the rate of increase slows down until it peaks, which the United Nations estimates will happen around 2100. Thereafter, the global population is expected to decline overall.
- Industrialised countries, which are ageing most rapidly, are likely to be the first to see shifts in demand as a result of demographic changes. At the same time, their higher levels of wealth will also result in greater purchasing power.
- As the shape of the population pyramid changes to reflect the growth of older age groups, the proportion of those of non-working age will rise. Statistically, the section of the population considered to be of working age is approximately between 14 and 65 years old. On the one hand, this implies that labour will become increasingly scarce, with the consequence that wages – and thus inflationary pressure – can be expected to increase (which ties in with the current issue of a shortage of skilled workers). On the other hand, pension systems based on the pay-as-you-go principle will come under ever greater strain.

A pay-as-you-go pension system combined with an ageing population means that a declining number of workers pay into a state retirement scheme for a growing number of recipients, whose average age is increasing and who therefore receive pension payments for an increasingly longer time. A system like this is anything but sustainable.



**Figure 5: 14–65 year olds as a proportion of total population**

From 2022: UN estimates up to 2100 based on current mortality and birth rates; data does not include additional migration



Sources: Allianz Global Investors, Global Capital Markets & Thematic Research, Our World In Data, United Nations – Population Division (2022), data as of September 2023



## Demographics & decarbonisation

In addition, if we want to tackle climate change and decarbonise the economy, it is imperative that demographic change is factored into the equation. After all, more people on the planet ultimately means more economic growth and could – but does not necessarily have to – result in more greenhouse gas emissions. Although CO<sub>2</sub> emissions have already levelled off over the last few years on a global scale, there is still no sign of any reversal. That is why the challenge is to transition the global economy to a zero-carbon model. Growth must become “green”, i.e. economic activity and CO<sub>2</sub> emissions must be decoupled.<sup>3</sup>

### Key investment considerations

Demographic growth implies that there will be further economic growth in the future. However, this will go hand in hand with higher wages and inflationary pressure as the number of people working shrinks relative to the total population. In this respect, there is a connection between demographic shifts and the other dimensions of disruption: whereas deglobalisation and decarbonisation also suggest higher rates of inflation, digitalisation is likely to be the only disruptor among them that will have the opposite effect. This is because it will help to replace increasingly dwindling human resources with technology.

The following key investment considerations can be drawn from these developments:

- A combination of growth and elevated inflation make a case for investment approaches that offer the potential for positive real returns.
- An anticipated increase in demand should filter through to commodity

markets and, in conjunction with decarbonisation, result in greater demand for energy, especially for renewables.

- In the latter case, the focus will also be on boosting energy efficiency as well as on smart solutions for storage and distribution.
- There should also be stronger demand for infrastructure.
- Although the global supply of human labour is steadily diminishing, robots – or more precisely, smart machines – are gaining ground. Artificial intelligence is set to play an even more significant role in all kinds of workplace processes.
- The importance of the so-called “pet economy” (goods and services incl. veterinary medicine) related to domesticated animals as human companions should also see further growth.
- As one of the forces of creative destruction, demographics is a long-term trend that should be considered when making investment decisions.



<sup>1</sup> I drew inspiration for the “Dimensions of disruption” concept from Demary, Vera; Matthes, Jürgen; Plünnecke, Axel; Schäfer Thilo, “Gleichzeitig: Wie vier Disruptionen die deutsche Wirtschaft verändern”, studies by the German Economic Institute (IW-Studien), 2021.

<sup>2</sup> Unless otherwise stated, the data presented here was obtained from <https://ourworldindata.org/>, September 2022.

<sup>3</sup> Naumer, Hans-Jörg, “Grünes Wachstum”, 2nd edition, 2023. Springer Gabler, Wiesbaden.

**Investing involves risk.** The value of an investment and the income from it will fluctuate and investors may not get back the principal invested. Past performance is not indicative of future performance. This is a marketing communication. It is for informational purposes only. This document does not constitute investment advice or a recommendation to buy, sell or hold any security and shall not be deemed an offer to sell or a solicitation of an offer to buy any security.

The views and opinions expressed herein, which are subject to change without notice, are those of the issuer or its affiliated companies at the time of publication. Certain data used are derived from various sources believed to be reliable, but the accuracy or completeness of the data is not guaranteed and no liability is assumed for any direct or consequential losses arising from their use. The duplication, publication, extraction or transmission of the contents, irrespective of the form, is not permitted. This material has not been reviewed by any regulatory authorities. In mainland China, it is for Qualified Domestic Institutional Investors scheme pursuant to applicable rules and regulations and is for information purpose only. This document does not constitute a public offer by virtue of Act Number 26.831 of the Argentine Republic and General Resolution No. 622/2013 of the NSC. This communication’s sole purpose is to inform and does not under any circumstance constitute promotion or publicity of Allianz Global Investors products and/or services in Colombia or to Colombian residents pursuant to part 4 of Decree 2555 of 2010. This communication does not in any way aim to directly or indirectly initiate the purchase of a product or the provision of a service offered by Allianz Global Investors. Via reception of this document, each resident in Colombia acknowledges and accepts to have contacted Allianz Global Investors via their own initiative and that the communication under no circumstances does not arise from any promotional or marketing activities carried out by Allianz Global Investors. Colombian residents accept that accessing any type of social network page of Allianz Global Investors is done under their own responsibility and initiative and are aware that they may access specific information on the products and services of Allianz Global Investors. This communication is strictly private and confidential and may not be reproduced, except for the case of explicit permission by Allianz Global Investors. This communication does not constitute a public offer of securities in Colombia pursuant to the public offer regulation set forth in Decree 2555 of 2010. This communication and the information provided herein should not be considered a solicitation or an offer by Allianz Global Investors or its affiliates to provide any financial products in Brazil, Panama, Peru, and Uruguay. In Australia, this material is presented by Allianz Global Investors Asia Pacific Limited (“AllianzGI AP”) and is intended for the use of investment consultants and other institutional /professional investors only, and is not directed to the public or individual retail investors. AllianzGI AP is not licensed to provide financial services to retail clients in Australia. AllianzGI AP is exempt from the requirement to hold an Australian Foreign Financial Service License under the Corporations Act 2001 (Cth) pursuant to ASIC Class Order (CO 03/1103) with respect to the provision of financial services to wholesale clients only. AllianzGI AP is licensed and regulated by Hong Kong Securities and Futures Commission under Hong Kong laws, which differ from Australian laws.

This document is being distributed by the following Allianz Global Investors companies: Allianz Global Investors GmbH, an investment company in Germany, authorized by the German Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin); Allianz Global Investors (Schweiz) AG; Allianz Global Investors UK Limited, authorized and regulated by the Financial Conduct Authority; in HK, by Allianz Global Investors Asia Pacific Ltd., licensed by the Hong Kong Securities and Futures Commission; in Singapore, by Allianz Global Investors Singapore Ltd., regulated by the Monetary Authority of Singapore [Company Registration No. 199907169Z]; in Japan, by Allianz Global Investors Japan Co., Ltd., registered in Japan as a Financial Instruments Business Operator [Registered No. The Director of Kanto Local Finance Bureau (Financial Instruments Business Operator), No. 424], Member of Japan Investment Advisers Association, the Investment Trust Association, Japan and Type II Financial Instruments Firms Association; in Taiwan, by Allianz Global Investors Taiwan Ltd., licensed by Financial Supervisory Commission in Taiwan; and in Indonesia, by PT. Allianz Global Investors Asset Management Indonesia licensed by Indonesia Financial Services Authority (OJK).