1 The Global Economy

KEYWORDS

Nations and firms • Population • Demographic transition • Income • Domestic product • National income • Globalisation • International trade • Market integration • Price wedge • Fragmentation

1.1 Introduction

Many global economic forces affect the decisions that managers of firms make regarding the price to charge for their products, how much to produce, how much to invest in research and development (R&D), how much to spend on advertising, and so on. This includes the number of firms competing in a market, the relative size of firms, technological and cost considerations, demand conditions and the ease with which competing foreign firms can enter or exit the market. The economic globalisation process emphasises the rising interdependence of national economies and the trend towards greater integration of goods, labour and capital markets (see Section 1.4). This influences the global economics forces and thus also affects managerial decisions and market organisation.

International economics analyses the interactions in the global economic environment. International business analyses the managerial decisions taken on the basis of a cost–benefit analysis within this environment. As a result, central topics in international finance, business and public policy cannot be understood without sufficient knowledge of international economics. Similarly, central topics in international economics cannot be understood without insights from international business.

This book provides an introduction to the global economy: what it is, how big it is, how it functions and how participants interact. Throughout the book, we analyse how international businesses are affected by the global economic environment and discuss the role played by firms in this process. We also analyse how international businesses affect (inter)national economies. The introductory part of the book consists of two chapters, where Chapter 1 focuses on the role of nations in the global economy and Chapter 2 discusses the connections between firms and nations in the global economy.

This chapter provides basic information at the national level about the global economy in terms of population (Section 1.2), income (Section 1.3) and the phenomenon of globalisation (Sections 1.4 to 1.6). According to Organization for Economic Cooperation and Development (OECD) Secretary-General Donald Johnston (see Maddison, 2001: 3), John Maynard Keynes argued that the master economist should 'examine the present in light of the past, for the purposes of the future'. We concur with this view and thus also discuss how the economy has evolved over time: in particular, how globalisation in its two basic manifestations (trade flows and factor mobility) has progressed and culminated in the two waves of globalisation of the nineteenth and twentieth centuries. We do this in Section 1.7 on analysing the global economy, before concluding with an evaluation of the recent backlash against globalisation in Section 1.8.

1.2 Population

We start with a brief overview of the size of world population and its distribution across the world, in combination with expected projections up to 2100. We also evaluate the economic impact of demographic transition in different parts of the world, before concluding on the relevance of population for international business.

1.2.1 Population Size

Estimates of the size of the global population prior to 200 BC are based on archaeological and anthropological evidence (see Deevey, 1960). In the nomadic period (before 8000 BC), Fournet (1998: 5) notes that 'the population subsisted primarily on gathering berries ... and ... it takes about five square kilometres to feed a human being'. Population growth rates were low for a long time period. According to the data sources in Kremer (1993), there were about 125,000 people 1 million years ago. Their number quadrupled to 1 million in the next 700,000 years and had reached about 170 million when Christ was born. The estimates become more reliable after this, as they are based on Roman and Chinese censuses. Despite the general upward trend, there are periods of stagnation or decline in world population, for example as a result of the Mongol invasions in the thirteenth century, the bubonic plague (or 'Black Death', which wiped out a third of the European population in the sixth century and again in the fourteenth), the Thirty Years War (which raged throughout central Europe from 1618 to 1648) and the collapse of the Ming dynasty in China.

The developments in world population since 1950 and projections up to 2100 are illustrated in Figure 1.1. A significant increase in the population growth rate began in the seventeenth century and reached a peak in the 1960s, leading to dramatic increases in population. There were 1 billion people in 1830, 2 billion in 1930, 3 billion in 1960, and so on. The time for each additional billion reduced to 12 years in the period 1987–2023, but will start to rise from then on. World population will reach 8 billion in November 2022 and continue to rise to about 10.4 billion in 2100.

Table 1.1 Top ten countries in terms of population and population density, 2021

Rank	Country / region	Population	% world	Country / region	Density	× world av.
	World	7837	100.0	World	60	1
1	China	1412	18.0	Macao	20 012	332
2	India	1393	17.8	Monaco	19 497	323
3	United States	332	4.2	Singapore	7692	128
4	Indonesia	276	3.5	Hong Kong	7060	117
5	Pakistan	225	2.9	Gibraltar	3369	56
6	Brazil	214	2.7	Bahrain	2241	37
7	Nigeria	211	2.7	Maldives	1812	30
8	Bangladesh	166	2.1	Malta	1615	27
9	Russia	143	1.8	Bangladesh	1278	21
10	Mexico	130	1.7	Sint Maarten	1260	21

Source: created using World Development Indicators online data; population in million, 2021; population density in people per square kilometre, 2021; av. = average.

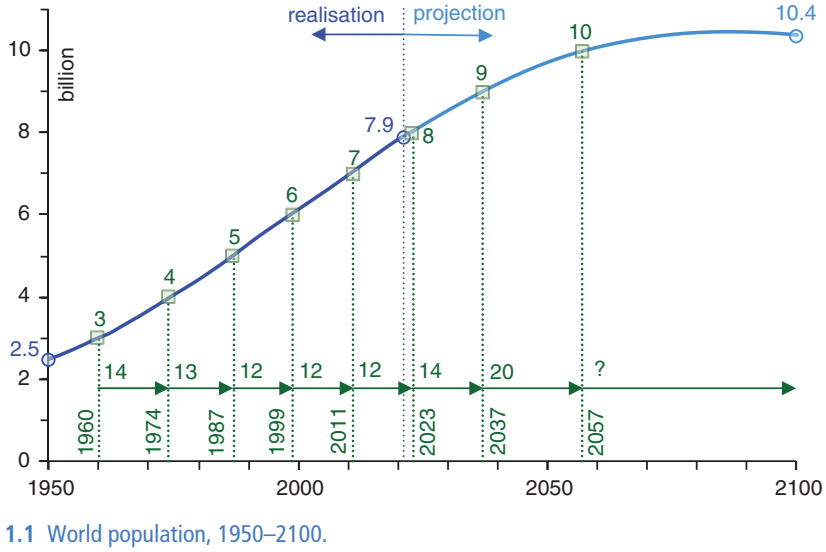

Figure 1.1 World population, 1950–2100.
Source: created using UN (2022) World Population Prospects data; estimates (up to 2021, realisation) combined with medium variant (from 2022, projection); total population as of 1 January, billion.

As the graph shows, however, the United Nations (UN) currently expects the peak in world population (10.43 billion) to be reached around 2086.

Out of every 100 people alive in 2021, about 18 live in China and India, which are by far the most populous nations (see Table 1.1). Other populous nations are the United States, Brazil and Mexico in the Americas; Indonesia, Pakistan and Bangladesh in Asia; and Russia in Europe/Asia. The world population is very unevenly divided, as indicated on the right-hand side of Table 1.1. The city-state of Macao has the highest population density (20,012 people per km^2), which is about 332 times the world average population density. All countries in the top density

list are small nations, with the exception of Bangladesh, the only country which is also in the top total population list.

1.2.2 Population Projections

In 2021, eleven of the twenty most populous nations were located in Asia, which is home to 4.86 billion people, or almost 60 per cent of the world total. Using the UN (2022) World Population Projections, the Asian population is expected to rise slightly to 5.31 billion by 2055 and decline from then on to about 4.68 billion in 2100. As a consequence, the Asian share in the world total declines to 45 per cent. In contrast, the population of Africa is expected to increase dramatically, from 1.38 billion in 2021 to 3.92 billion in 2100. The African share in the world total in this period thus more than doubles, from 17 to 38 per cent. Taken together, Africa and Asia will account for about 83 per cent of the world population in 2100.

Figure 1.2 illustrates the main changes in the distribution of the world population from 1950 to 2100 for seven main geographic entities, namely the countries China and India and the regions Europe, Africa, North America, Latin America and Rest of World (mostly Other Asia, but also including Oceania). In 1950, China and Europe had the largest population shares (close to 22 per cent). Europe's share declines continuously to 9.5 per cent in 2021 and 5.7 per cent in 2100. Similarly, the North American share declines (more slowly) throughout the period, from 6.5 per cent in 1950 to 4.3 per cent in 2100, while China's share is initially stable (with a peak of 22.5 per cent in 1975) before declining to 18.1 per cent in 2021 and only 7.4 per cent in 2100. In contrast, India's share in the world total is much more stable, starting slightly above 14 per cent in 1950, rising to close to 18 per cent around 2020, and declining again to slightly below 15 per cent in 2100.

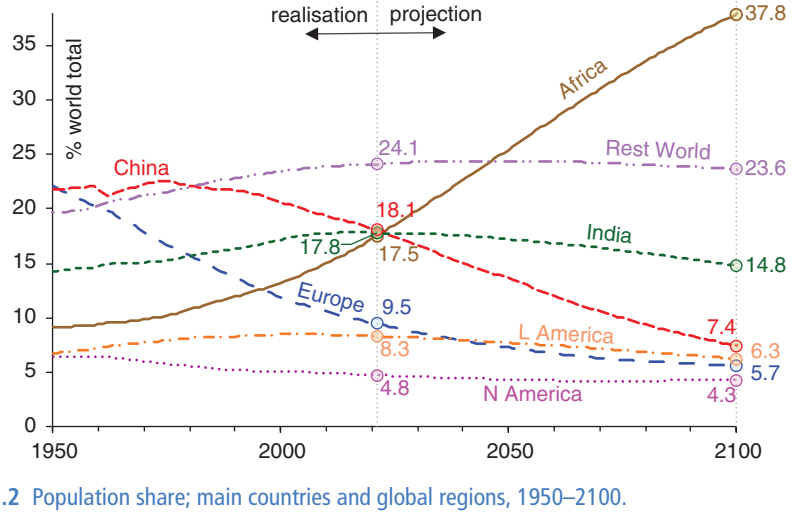

Figure 1.2 Population share; main countries and global regions, 1950–2100.
Source: created using UN (2022) World Population Prospects data; estimates (up to 2021, realisation) combined with medium variant (from 2022, projection); shares in per cent of world total; L America = Latin America and the Caribbean; Rest World = Asia excluding China and India plus Oceania.

A similar rise and fall occurs for Latin America and Rest of World. Only Africa shows a continuous rise in its population share throughout the period, from about 9 per cent in 1950, to 17.5 per cent in 2021 and close to 38 per cent in 2100. In short, there is an enormous rise in the share of Africa and an enormous decline in the shares of Europe and China, with smaller changes in the other geographic regions.

1.2.3 Transition and Dividend

We will evaluate the links between population and business in Section 1.2.4, but before we do so we briefly discuss the underlying reasons for the large differences in population growth in different parts of the world. This brings us to the *demographic transition* model, which can be used to explain the economic principle of *demographic dividend*. Our exposition is brief; see van Marrewijk and Brakman (2022, ch. 12) for details. The demographic transition model connects population developments with economic developments. It is based on empirical observations of birth and death rates made at the beginning of the twentieth century by the American Warren Thompson (1887–1973) and Adolphe Landry (1874–1956) of France. The model consists mainly of four stages (sometimes a fifth stage is added):

- Stage one. Birth and death rates are high and volatile, such that population growth is low and fluctuating. It is a stage of low economic development (before the industrial revolution), with mostly agricultural workers.
- Stage two. The death rate starts to fall, especially among children, as a result of improvements in health care and sanitation. It is a stage of starting economic development in which birth rates remain high. As a consequence, the difference between birth and death rates starts to rise and the population starts to grow more quickly.
- Stage three. Birth rates start to fall as well, not only because of the availability of contraceptives and an increase in women's status, but also because fewer children are needed to work on the farm as a result of mechanisation. It is a more advanced stage of economic development in which the population still rises rapidly, but the speed of population growth starts to decline towards the end of this stage as the gap between birth rate and death rate narrows.
- Stage four. Birth rates and death rates are both low, stabilising the population at a higher level than before the demographic transition began. It is a stage of higher economic development with, on average, an older population.

During the demographic transition the structure of the population changes, with a rising share of young people and a falling share of older people in stage two, followed by a declining share of young people and a rising share of older people in stages three and four. This is illustrated in Figure 1.3 at the world scale (panel a) and for Latin America (panel b) for three main age groups, namely *young* (below 15 years of age), *working age* (15–64 years old) and *old* (65 and above years old). We can discuss the implied age cut-off points, but it will not affect the main message below.

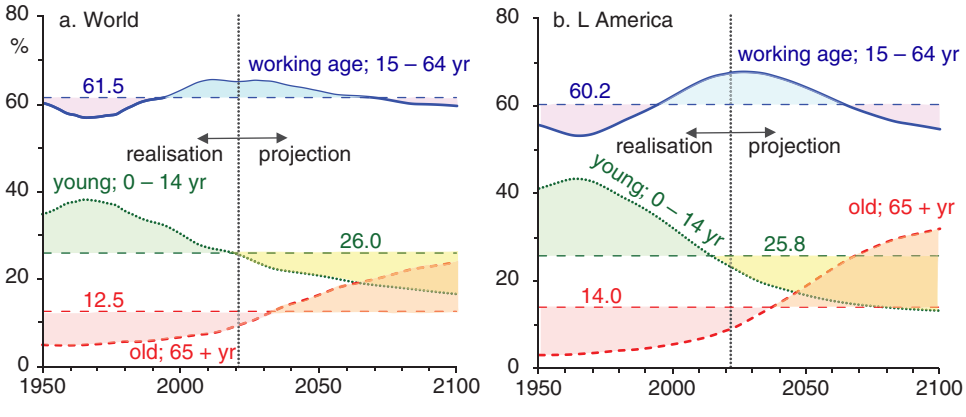

Figure 1.3 Main age group shares; world and Latin America, 1950–2100.
Source: created using UN (2022) World Population Prospects data; estimates (up to 2021, realisation) combined with medium variant (from 2022, projection); shares in per cent of respective total; see main text for details.

For the world as a whole for the period 1950–2100, the average share of the young population is 26.0 per cent, but it is substantially higher than this average before 2019 and substantially lower than this average thereafter. The opposite holds for the old population, with an average population share of 12.5 per cent, which is substantially below this average before 2033 and substantially above this average thereafter. We are thus dealing with a substantially declining share of the young population (strictly speaking: since 1966 when it peaked at 38 per cent) and a substantially rising share of the old population (from 5 per cent in 1950 to 24 per cent in 2100). These counterbalancing forces imply that the share of the working age population is much more stable; it fluctuates mildly around the 61.5 per cent average, namely slightly above this average in the period 1995–2068 and slightly below this average before 1995 and after 2068.

Panel b of Figure 1.3 for Latin America illustrates that the demographic transition fluctuations will be stronger at the regional or country level, while the timing may differ from that of the world as a whole (see below). The share of young people in Latin America, for example, reaches a much higher peak of 43.3 per cent in 1964, and the share of old people reaches a much higher peak of 32 per cent in 2100. As a consequence, the share of the working-age population reaches a minimum of 53.2 per cent far below the world average in 1965 and a maximum of 67.8 per cent far above the world average in 2027.

$$income\ per\ capita = \frac{income}{population} = \underbrace{\left(\frac{working\ age\ population}{population}\right)}_{A}\underbrace{\left(\frac{workers}{working\ age}\right)}_{B}\underbrace{\left(\frac{income}{workers}\right)}_{C} \quad 1.1$$

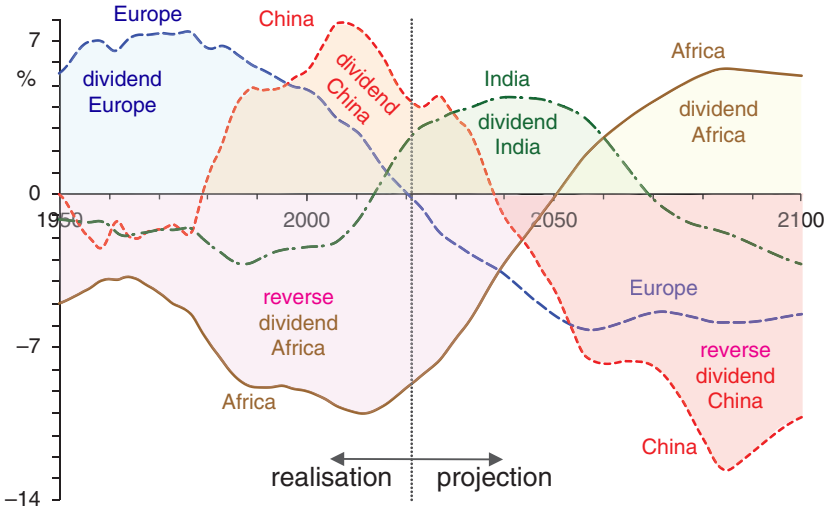

Figure 1.4 Demographic (reverse) dividend; selected countries and regions, 1950–2100.
Source: created using UN (2022) World Population Prospects data; estimates (up to 2021, realisation) combined with medium variant (from 2022, projection); dividend = share of working age population – world share of working age population, in percentage points; see main text for details.

Associated with these long-run trends is what economists call a *demographic dividend*, which indicates that a country has the opportunity to grow fast if the share of the working age population is high and more slowly if it is low. As indicated in equation 1.1, income per capita is the product of three ratios, which means that for a given income per worker (C) and share of workers in the working age population (B), a rise in the share of the working age population (A) directly translates into rising income per capita levels. Using van Marrewijk (2019), we take the world's share of the working age population as a benchmark and use the term *dividend* if a country's share is higher than the world average, and the term *reverse dividend* if it is lower. We thus measure the dividend and reverse dividend in percentage points deviations from the world average.

Figure 1.4 illustrates the demographic (reverse) dividends for Europe, China, India and Africa. It shows that Europe had a large positive dividend before 2020, which turned into a reverse dividend thereafter. This allowed Europe, other things equal, to have more rapid income per capita growth than the world average before 2020 and lower growth for the remainder of the twenty-first century. Similarly, the figure shows that the period of rapid economic growth of China, which started with the economic reform policies in 1978, coincides with an enormous positive demographic dividend, reaching a peak of 7.9 percentage points in 2007. The Chinese dividend will rapidly decline because of an ageing population from 2027 onwards and turn into a reverse dividend starting in 2038, reaching a staggering minimum of 12.6 percentage points below the world average in 2085. This will put large pressure on China's economic growth prospects in the second half of the twenty-first century. Milder fluctuations occur for India, which will benefit from a modest positive dividend from 2014 to 2069, with a peak of 4.5 percentage points in 2041. Finally, the

figure helps us to understand why Africa, which has a very young and rapidly growing population, has been lagging behind so much in terms of economic growth rates since World War II. It is confronted with an enormous reverse dividend throughout this period, with a minimum of 10.0 percentage points below the world average in 2011. Africa will only enjoy a positive dividend in the second half of the twenty-first century, with a modest peak of around 5.7 percentage points around 2085.

1.2.4 Population and Business

Do managers of international firms care about the population distribution, the age profile, demographic trends and projected developments? Yes, they do. In fact, firms study such trends closely and try to predict the implications that these trends are likely to have for their core activities and strategies. A few examples may illustrate this.

First, many automobile firms have started production and assembly plants in China since 2005, all with the intention of benefiting from the potentially large and rapidly growing Chinese market: more than 1.4 billion customers! This has increased the share of cars produced in China from 4.6 per cent in 2005 to 36.8 per cent in 2020 (see Figure 1.5). In case you are wondering why they have not done the same in India, which also has more than 1.4 billion customers, the answer is that automobile firms have invested only modest amounts there because the Indian income levels (see Section 1.3) are too low to generate a substantial demand for cars despite the large population.

Second, all major investment firms are increasing the share of their investments in firms and activities that will benefit from the population ageing process, such as health care, travel and entertainment and retirement projects.

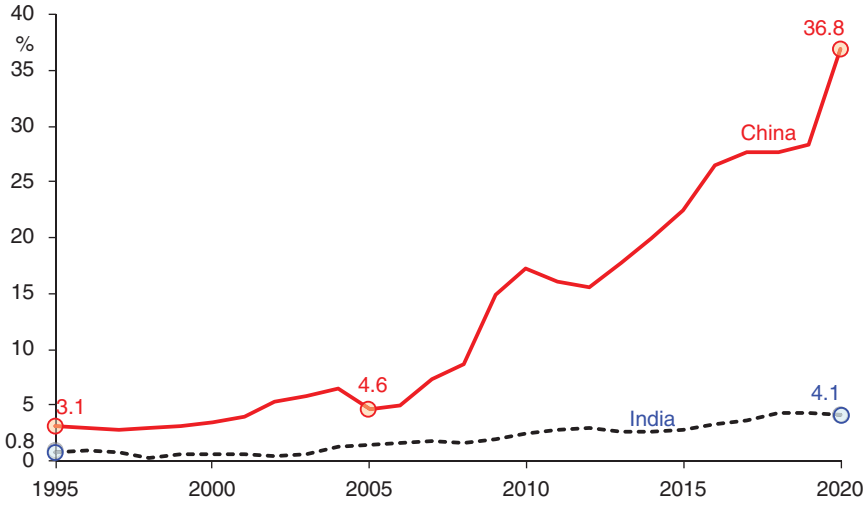

Figure 1.5 Car production in China and India; share of world total, per cent.
Source: created using Bureau of Transportation Services data (www.bts.gov).

Third, inspired by their marketing departments, firm R&D centres are being given instructions to find user-friendly solutions for an ageing population, such as milk cartons that do not spill, bottles and jars that can be opened without using pneumatic equipment, and apparatus that can be operated without reading the 150-page instruction book.

Businesses are also important drivers of much that happens at the population level, both nationally and internationally. Clearly, policy-makers are keen to take account of business developments and try to influence them so that the advantages for society at large are maximised (or, for that matter, any disadvantages are kept within workable bounds). Again, a few examples may illustrate this.

First, according to standard economics logic, businesses are the key drivers of macroeconomic performance, such as employment and growth, particularly in capitalist societies. Within the business world, the production of goods and services is extensive; many innovations are developed and commercialised. Macroeconomic developments are thus influenced by microeconomic businesses.

Second, the allocation of jobs across the globe, for example, cannot be understood without insights into the location decision of multinationals. In the late twentieth and early twenty-first century, much industrial employment moved out of the Western high-wage region into lower-wage emerging markets.

Third, many other examples are industry-specific. The pharmaceutical industry, for instance, is the key producer of new medicines. Because most money can be earned in the rich West, the multibillion R&D efforts of the multinational pharmaceutical companies are heavily biased toward the invention, development and commercialisation of drugs that can help to prevent or cure Western 'welfare diseases' (e.g. obesity), rather than the much more common Third World plagues (e.g. malaria).

1.3 Income

The best indicator of the economic power of a nation is, of course, obtained by estimating the *total value of the goods and services produced* in a certain time period. Actually doing this and comparing the results across nations is a formidable task, which conceptually requires taking three steps. First, a well-functioning statistics office in each nation must gather accurate information on the value of millions of goods and services produced and provided by firms in the economy. This will be done, of course, in the country's local currency – that is, dollars in the USA, pounds in the UK, yen in Japan, and so on. Second, we have to decide what to compare between nations: gross *domestic* product (GDP) or gross *national* income (GNI). Third, we have to decide *how* to compare the *outcome* for the different nations. We briefly do this below.

1.3.1 Domestic Product or National Income?

As mentioned above, we can either compare GDP or GNP between nations. *GDP* is defined as the market value of the goods and services produced by labour and property *located* in a country. *GNI* is defined as the market value of the goods and services produced by labour and property of *residents* of a country. If, for example, a Mexican worker is providing labour services in the USA, these services are part of American GDP and Mexican GNI. The term 'located in' sometimes needs to be interpreted broadly: for example, if a Filipino sailor is providing labour services for a Norwegian shipping company, this is part of Norwegian GDP despite the fact that the ship is not actually located in Norway most of the time. The difference between GDP and GNI does not hold only for labour services, but also for other factors of production, such as capital, which implies:

$$GDP + net\ receipts\ of\ factor\ income = GNI \qquad 1.2$$

So does it really matter whether we compare countries on the basis of GDP or GNI? No, for most countries it does not. This is illustrated for 2021 in Figure 1.6, where the GDP and GNI values are measured in current US dollars. Since almost all observations are close to a straight 45° line through the origin, the values of GDP and GNI are usually close to one another. For example, China's GDP was $17,734 billion and its GNI was $17,577 billion. For some of the smaller countries the difference between GDP and GNI can be more substantial in relative terms. In Luxembourg, for example, GNI is substantially higher than GDP ($87 billion versus $52 billion). Unless indicated otherwise, we will use GDP throughout this book.

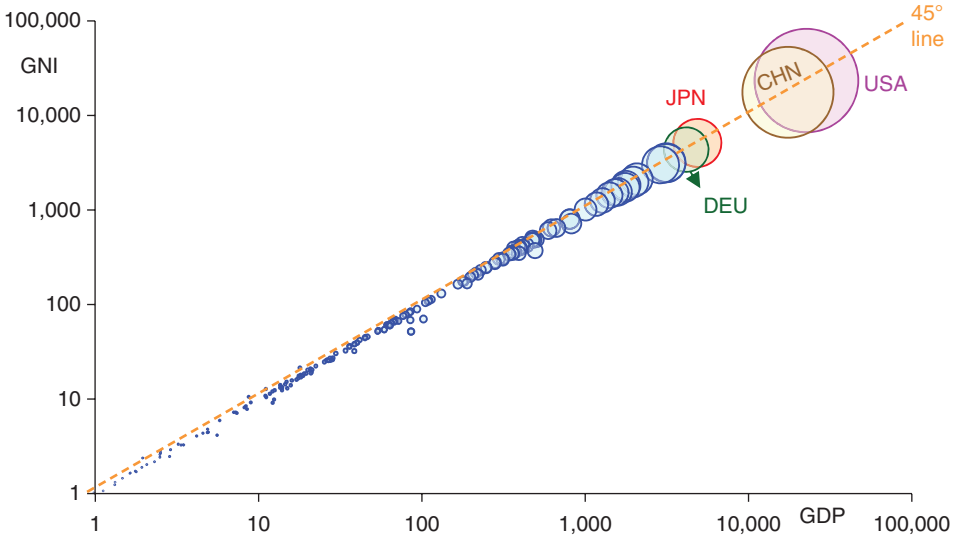

Figure 1.6 Country income; GDP and GNI, 2021.
Source: created using World Development Indicators online; GDP and GNI in billion current USD (2020 is used if 2021 unavailable), double logarithmic scale; 192 countries included.