
The Future
NEXT EXIT

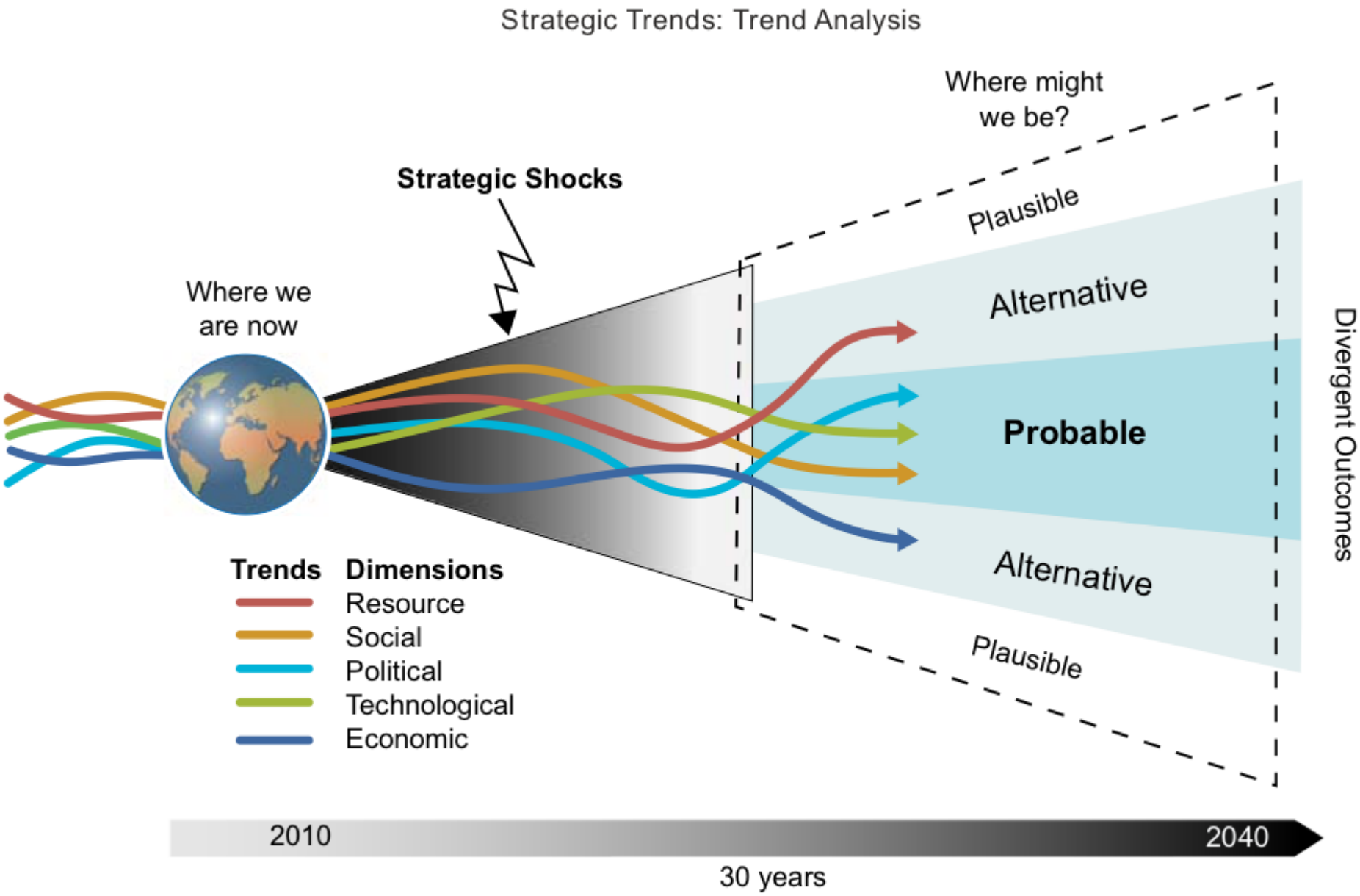
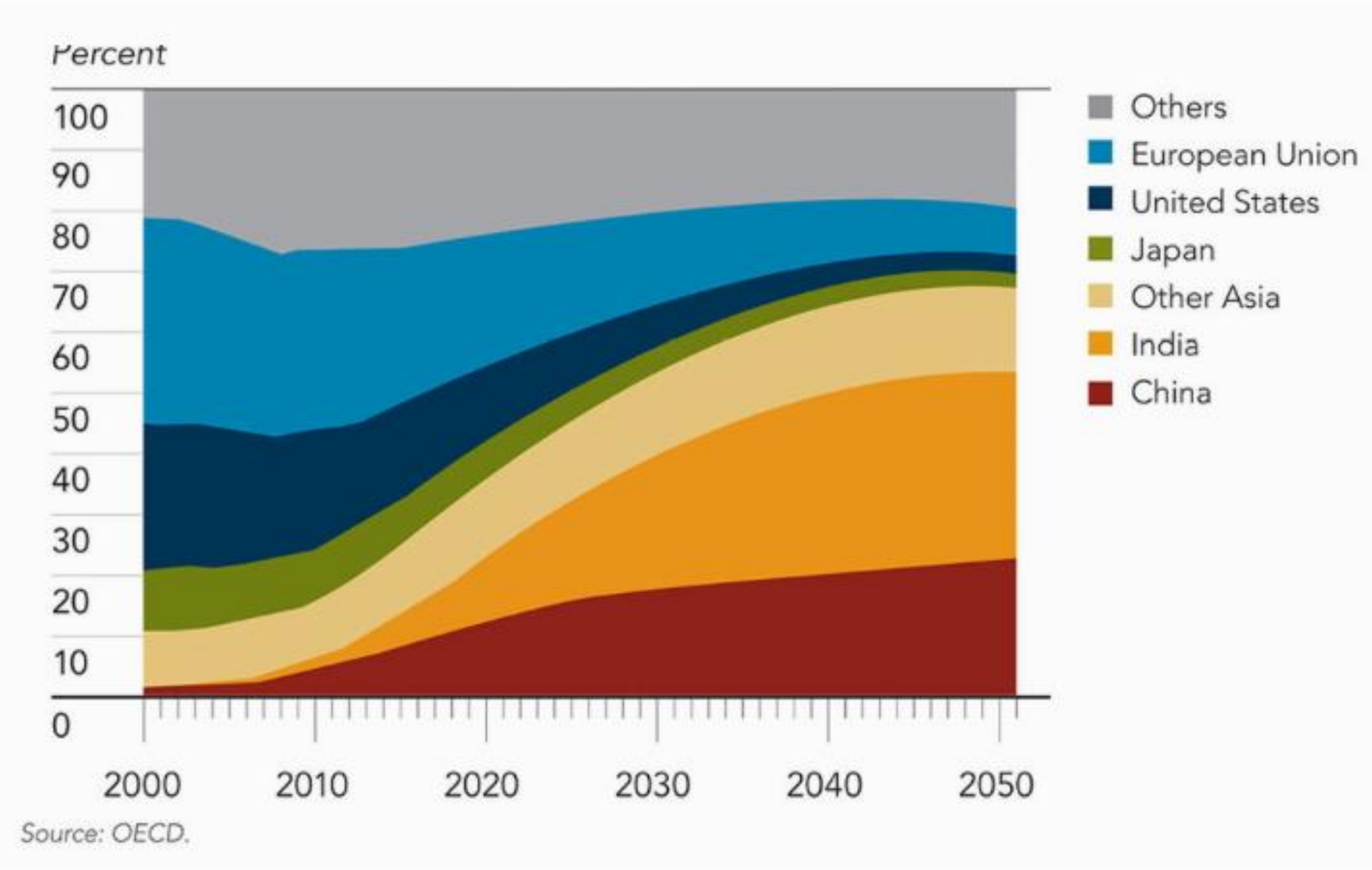
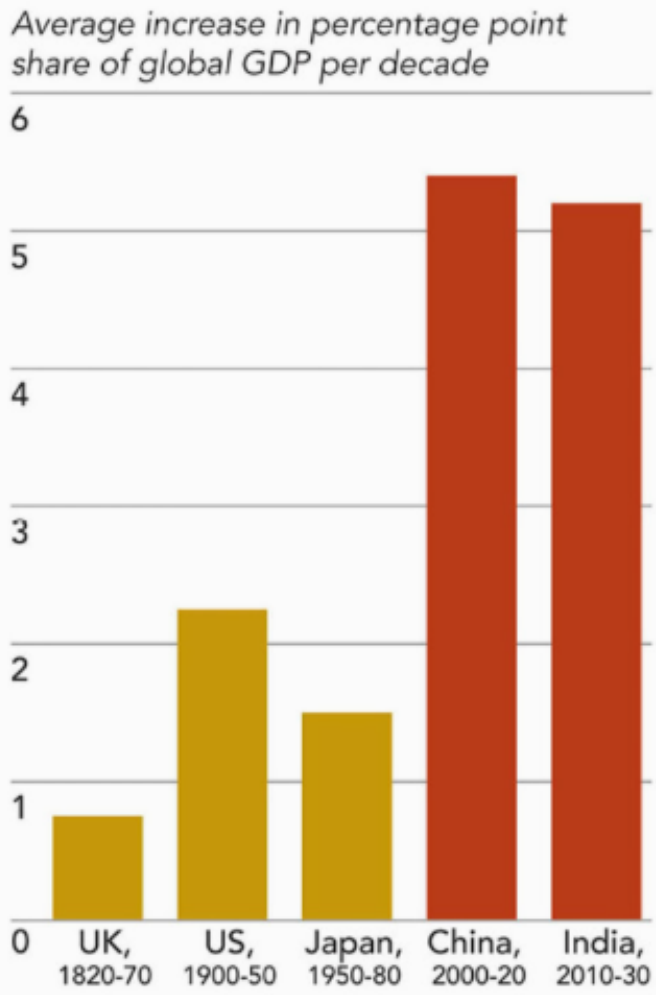


Figure 1 – Global Strategic Trends: Outcome Assessment


Percent
100
90
80
70
60
50
40
30
20
10
0
2000
2010
2020
2030
2040
2050
Others
European Union
United States
Japan
Other Asia
India
China
Source: OECD.

CHINA AND INDIA'S DRAMATIC RISE

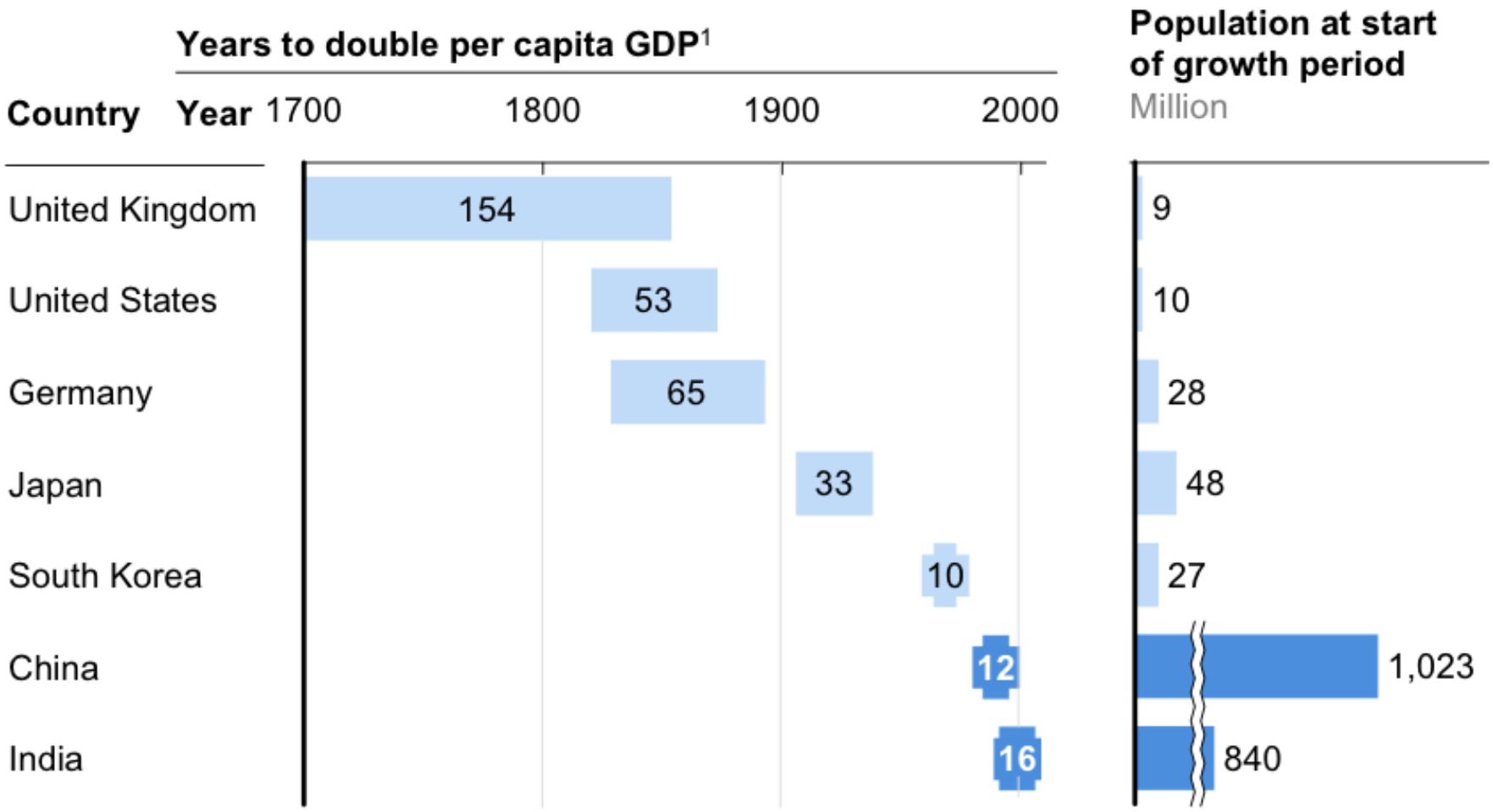


Note: UK, US, and Japan data from Angus Maddison historical database, measured in 1990 International Geary-Khamis dollars. China and India data from Brookings projections, measured in 2055 PPP dollars.

Source: Brookings Institution.

Exhibit E2

Incomes are rising in developing economies faster, and at a greater scale, than at any previous point in history



1 Time to increase per capita GDP in PPP terms from $1,300 to $2,600.

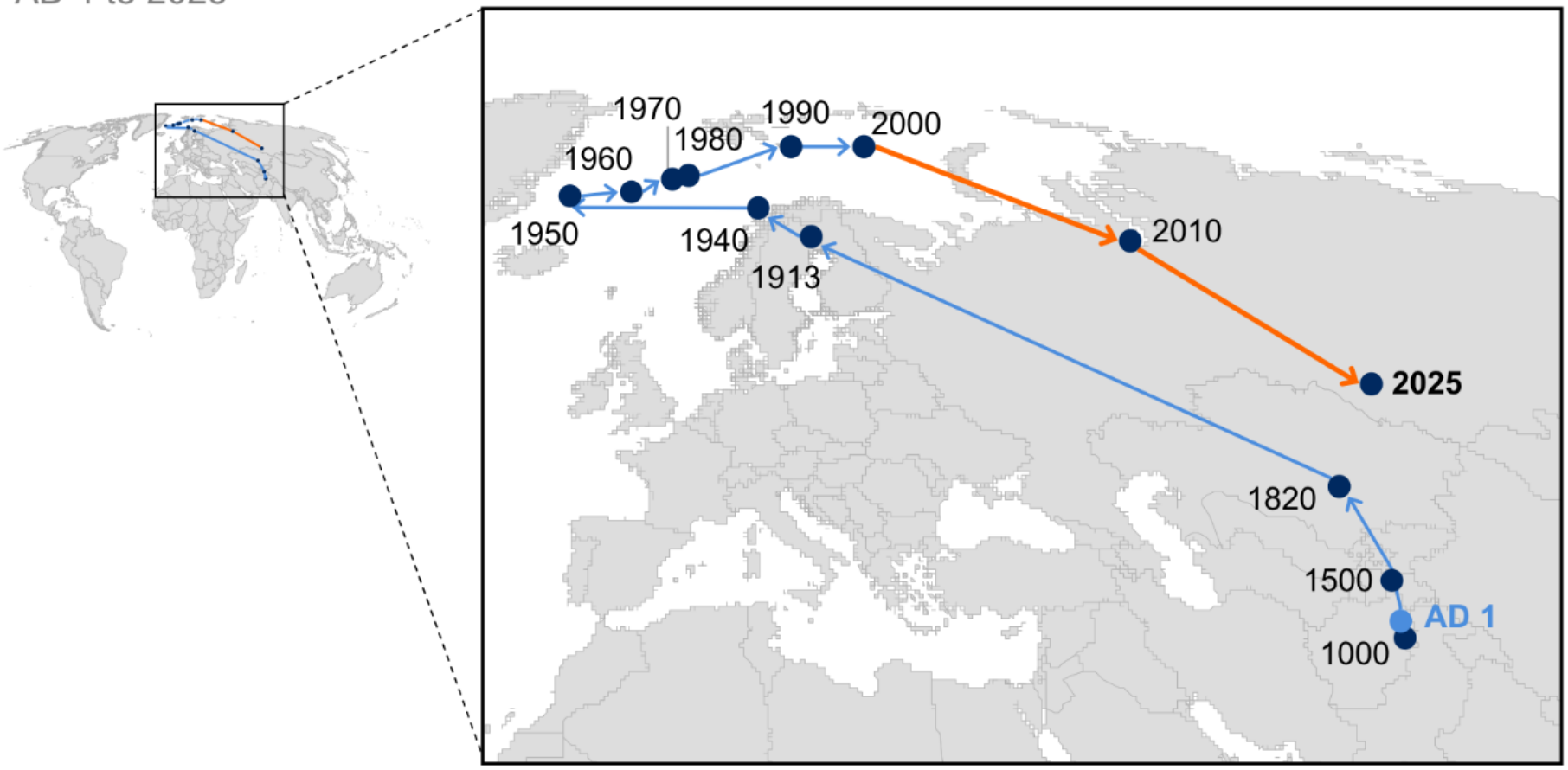
SOURCE: Angus Maddison; University of Groningen; *Resource Revolution: Meeting the world's energy, materials, food, and water needs*, McKinsey Global Institute, 2011.

Exhibit 3

By far the most rapid shift in the world's economic center of gravity happened in 2000–10, reversing previous decades of development

Evolution of the earth's economic center of gravity[1]

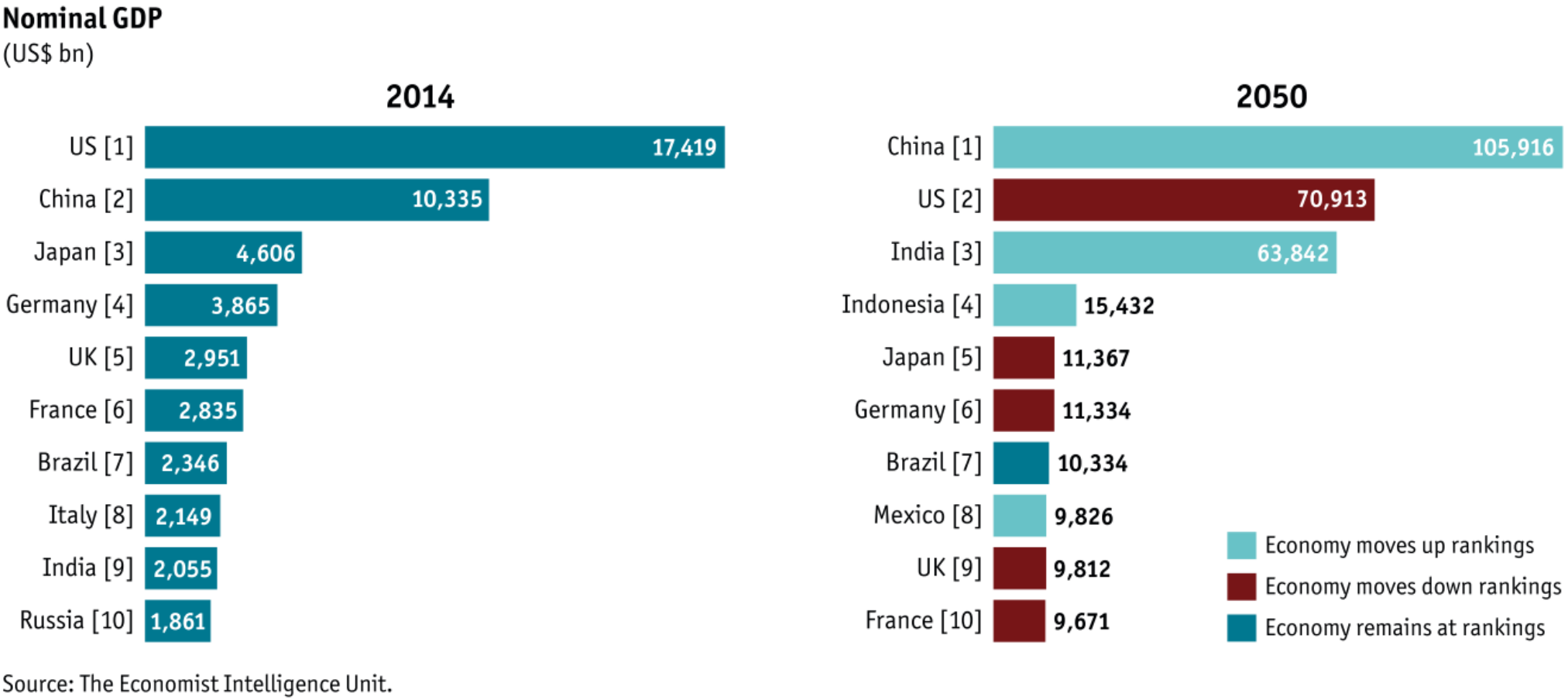
AD 1 to 2025



1 Economic center of gravity is calculated by weighting locations by GDP in three dimensions and projected to the nearest point on the earth's surface. The surface projection of the center of gravity shifts north over the course of the century, reflecting the fact that in three-dimensional space America and Asia are not only "next" to each other, but also "across" from each other.

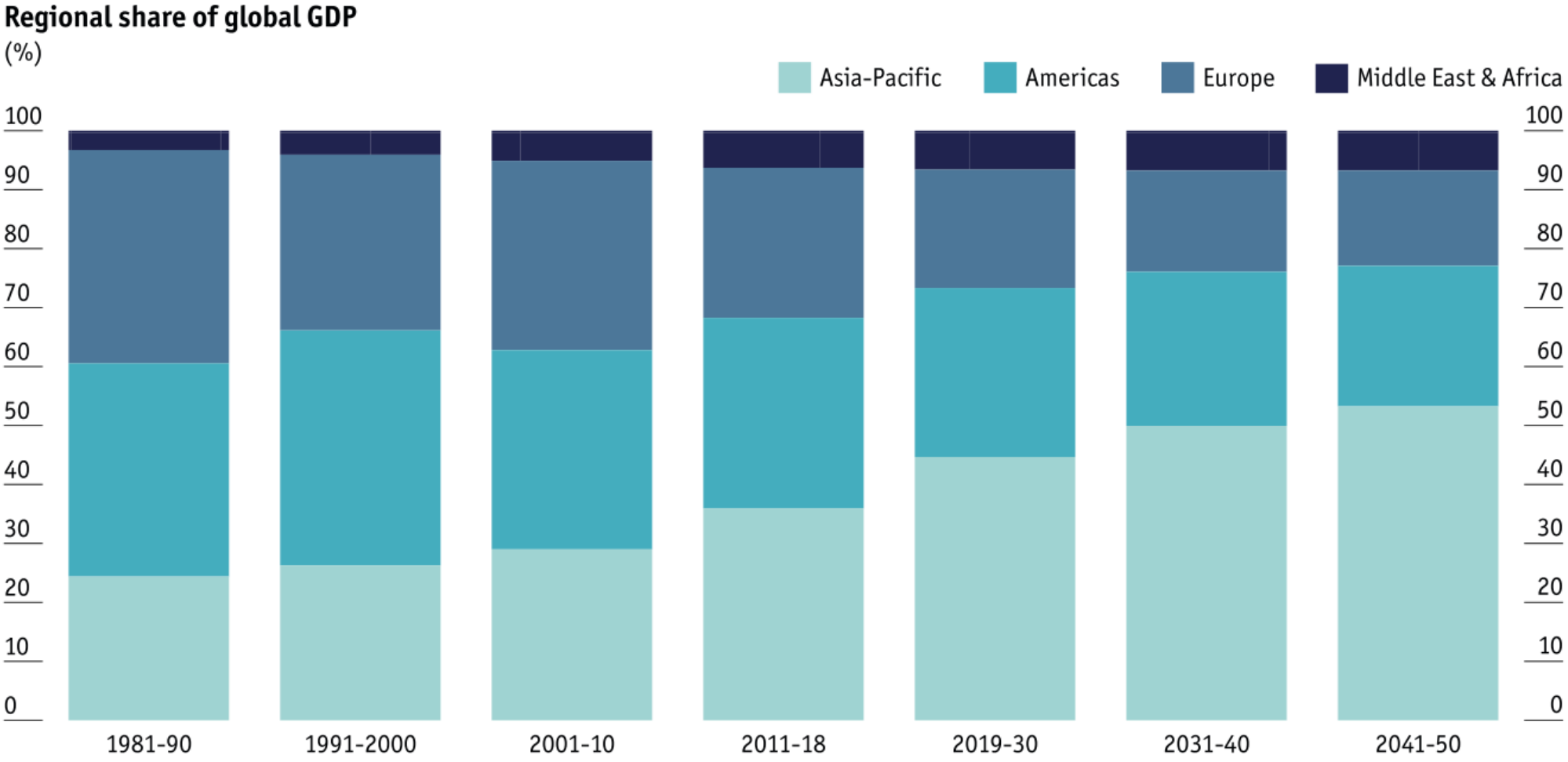
SOURCE: McKinsey Global Institute analysis using data from Angus Maddison; University of Groningen

Top ten economies in 2050 at market exchange rates



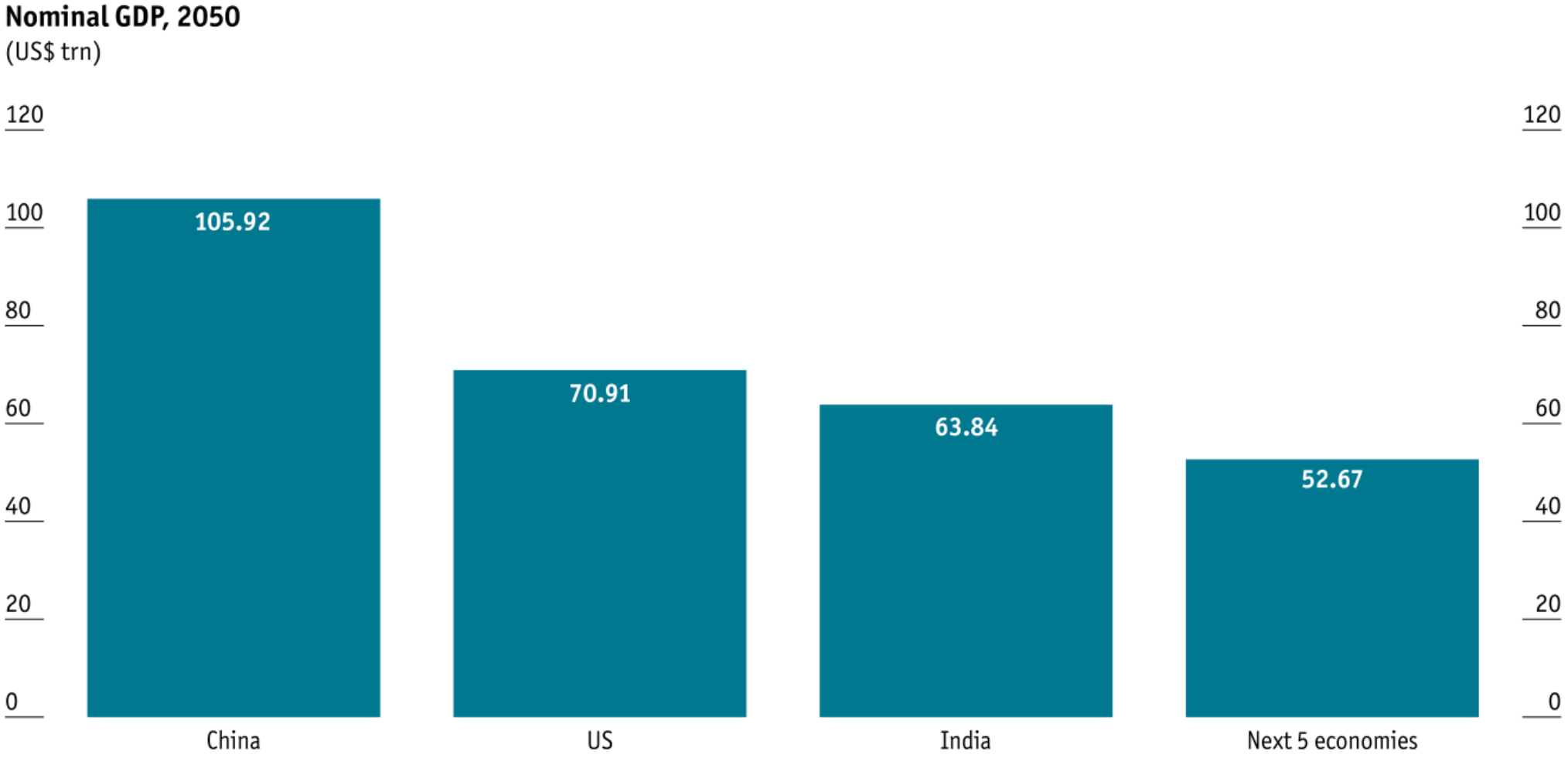
Source: The Economist Intelligence Unit.

The rise of Asia continues



Source: The Economist Intelligence Unit.

Global dominance of the top three economies



Source: The Economist Intelligence Unit.

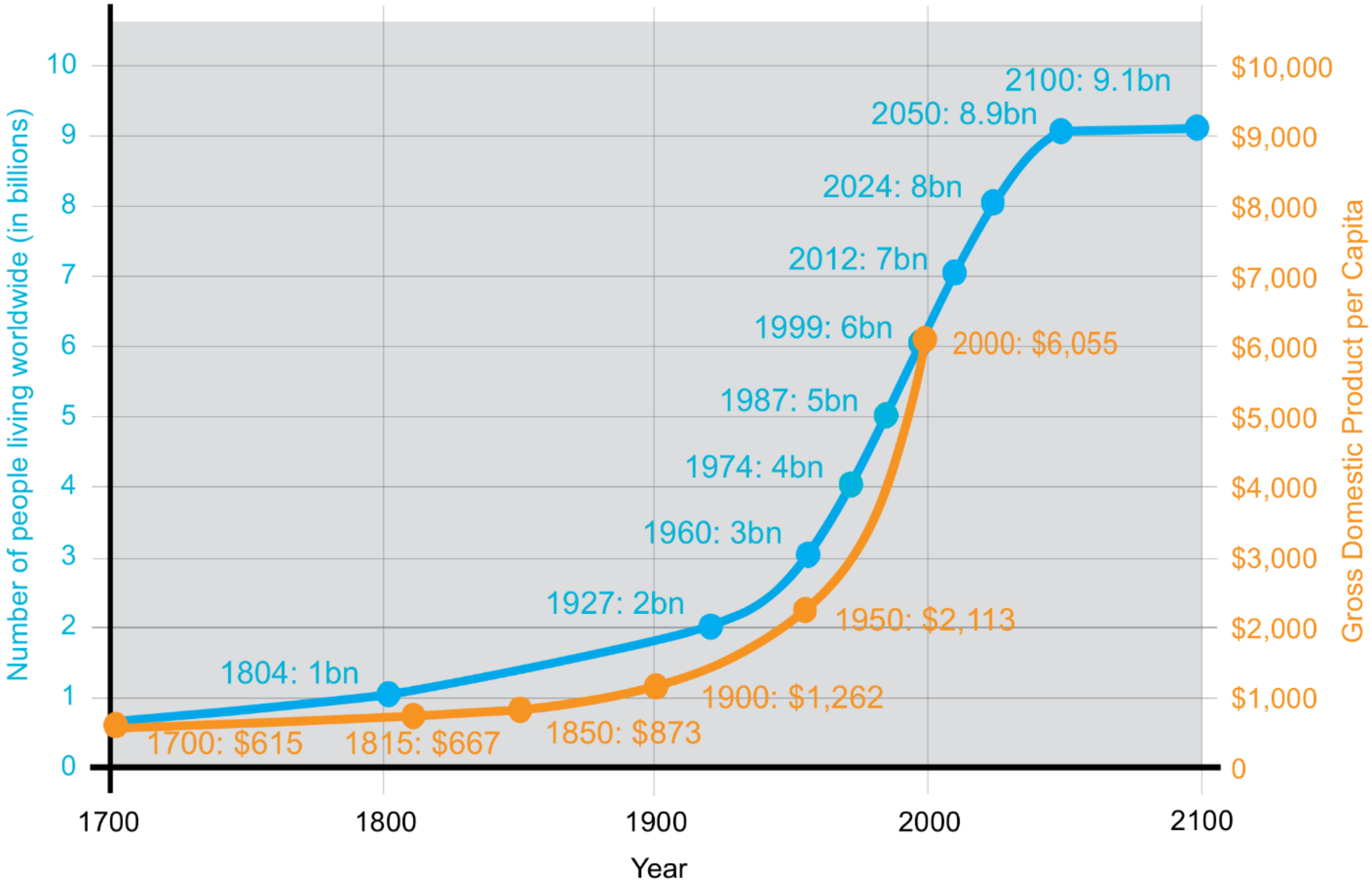
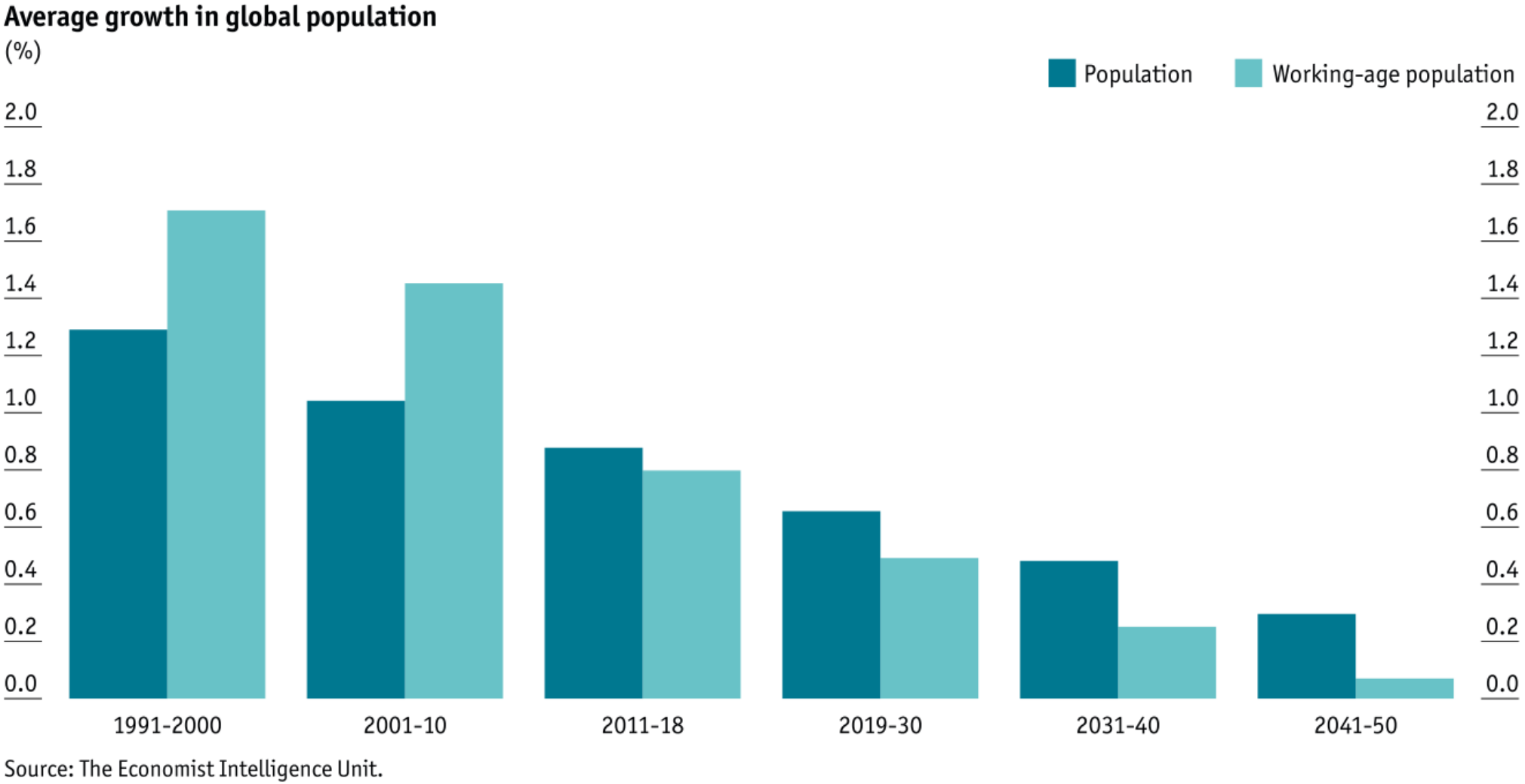


Figure 2 – Projection of Global Population from 1700 to 2048

A new era of global demographic decline

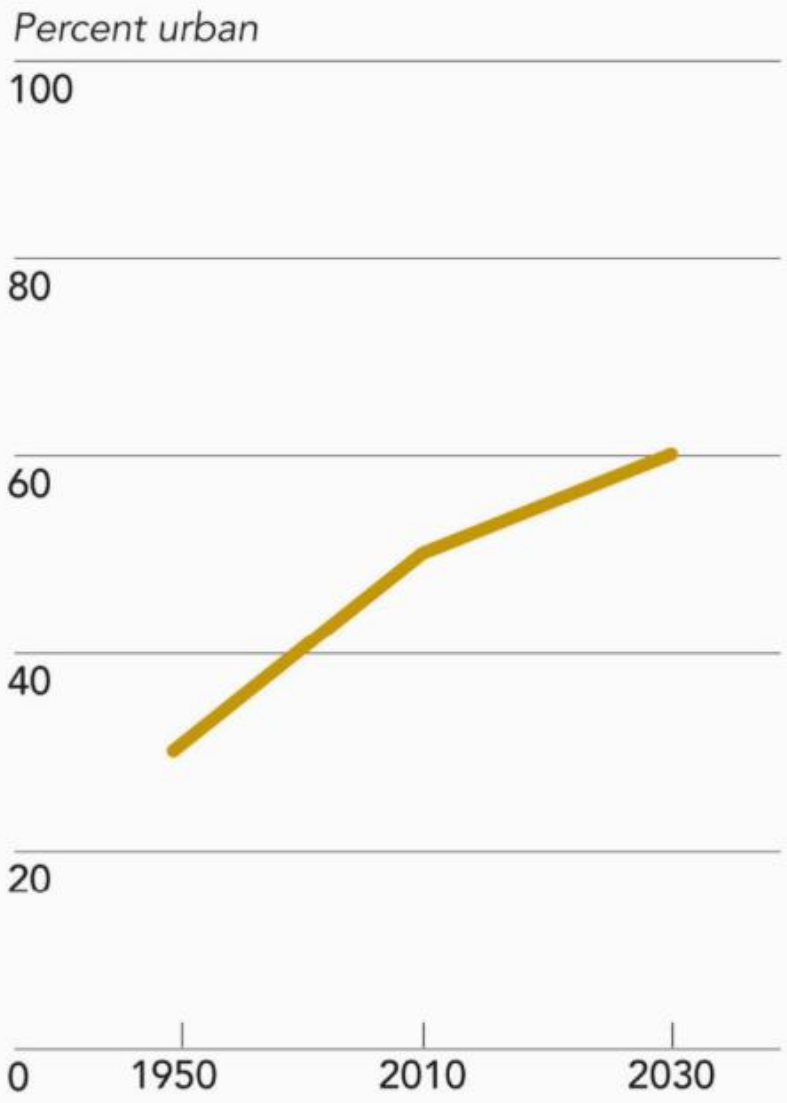
Source: The Economist Intelligence Unit.

A new era of global demographic decline



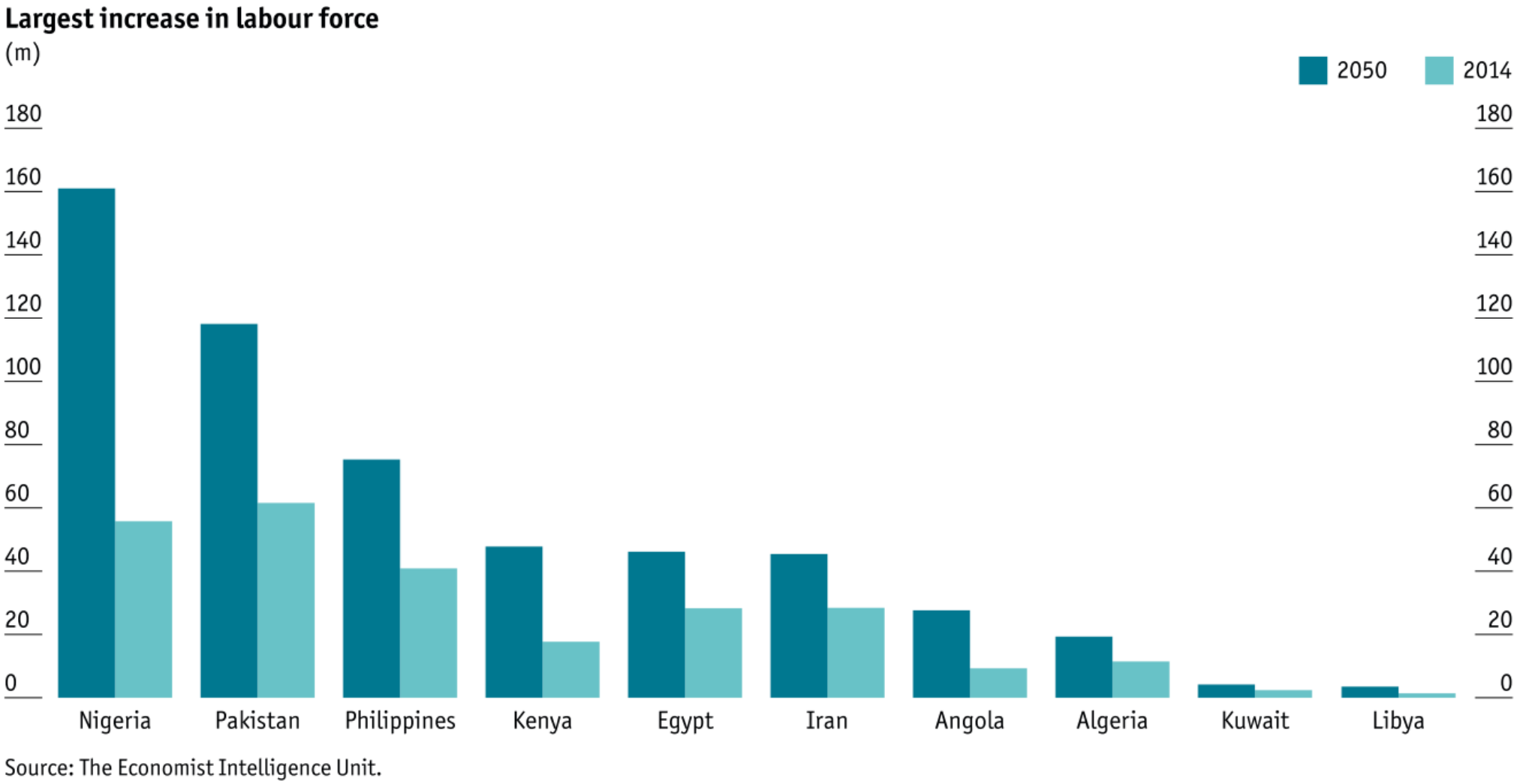
Source: The Economist Intelligence Unit.

GLOBAL POPULATION IN URBAN AREAS



Source: McKinsey Company.

Population growth will still benefit a few



Source: The Economist Intelligence Unit.

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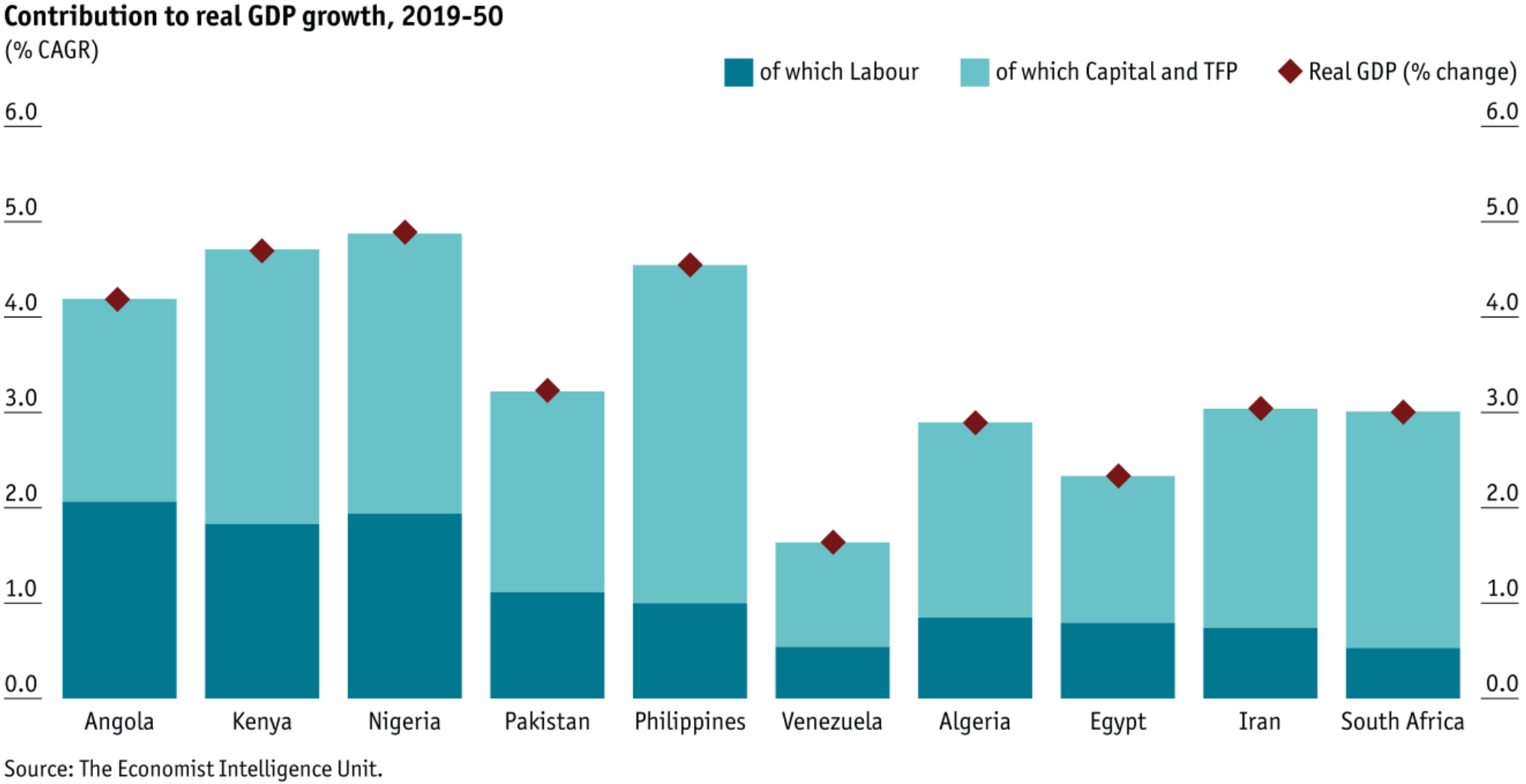
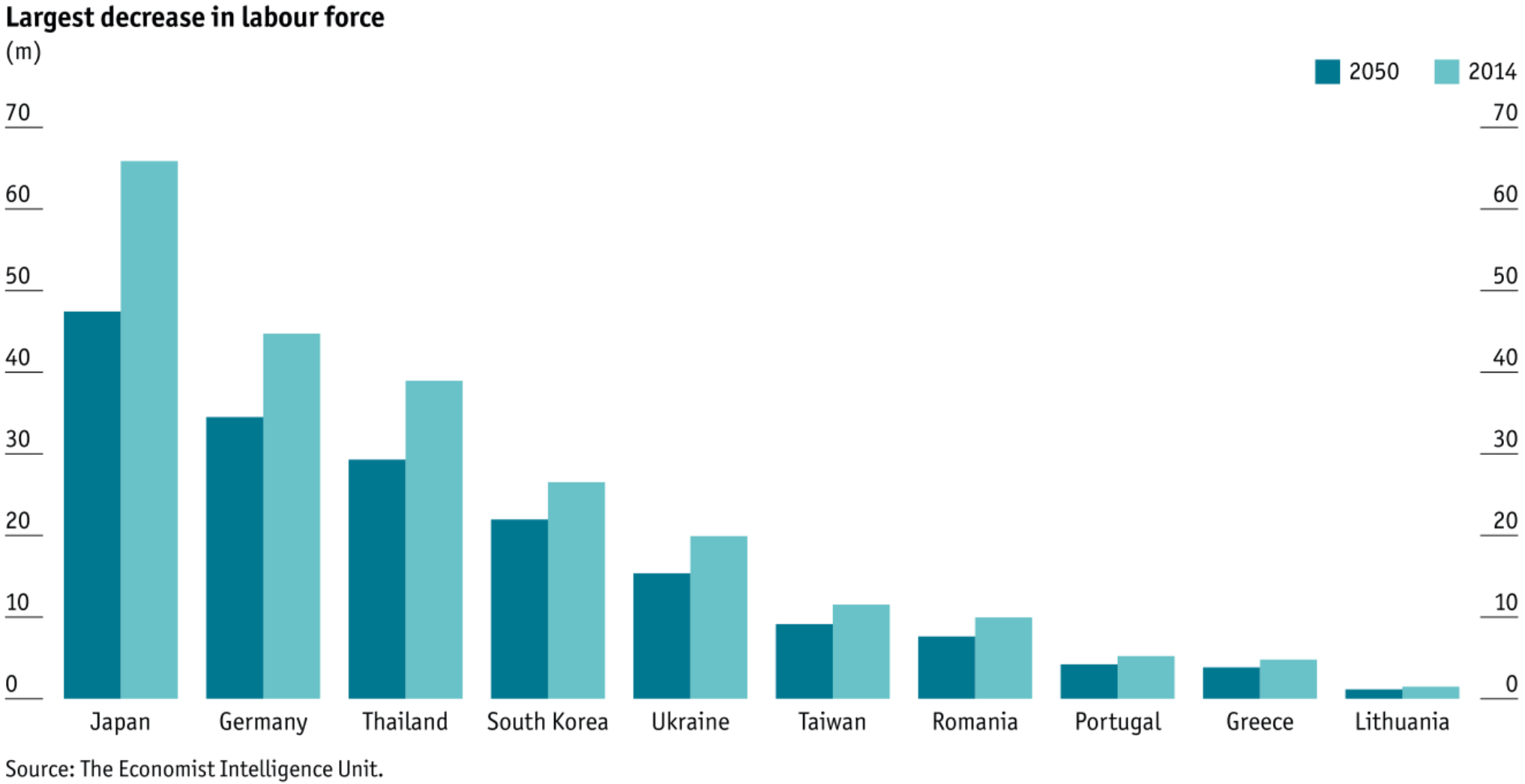


Source: The Economist Intelligence Unit.

For most, population as a source of growth will need to be replaced



Source: The Economist Intelligence Unit.

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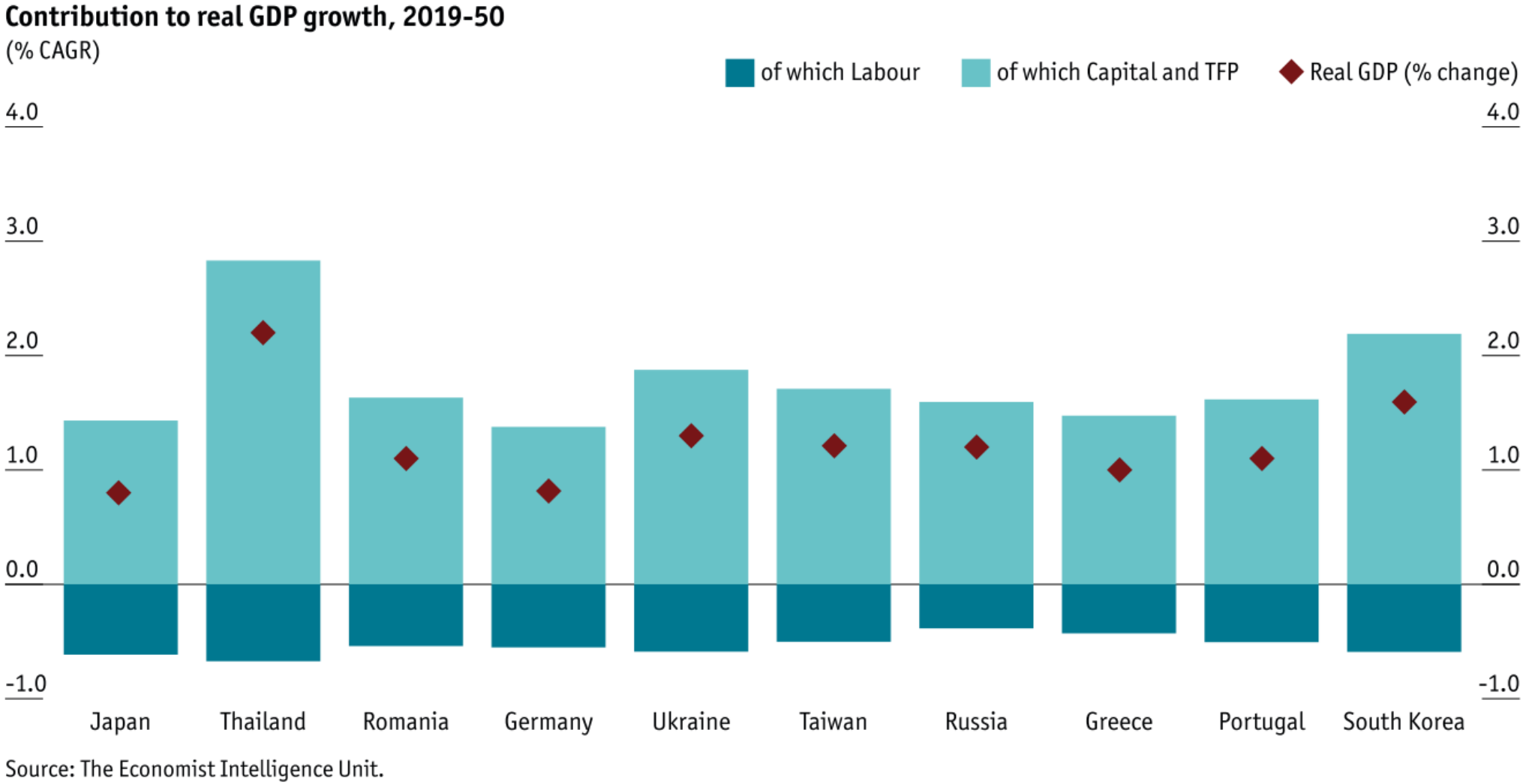
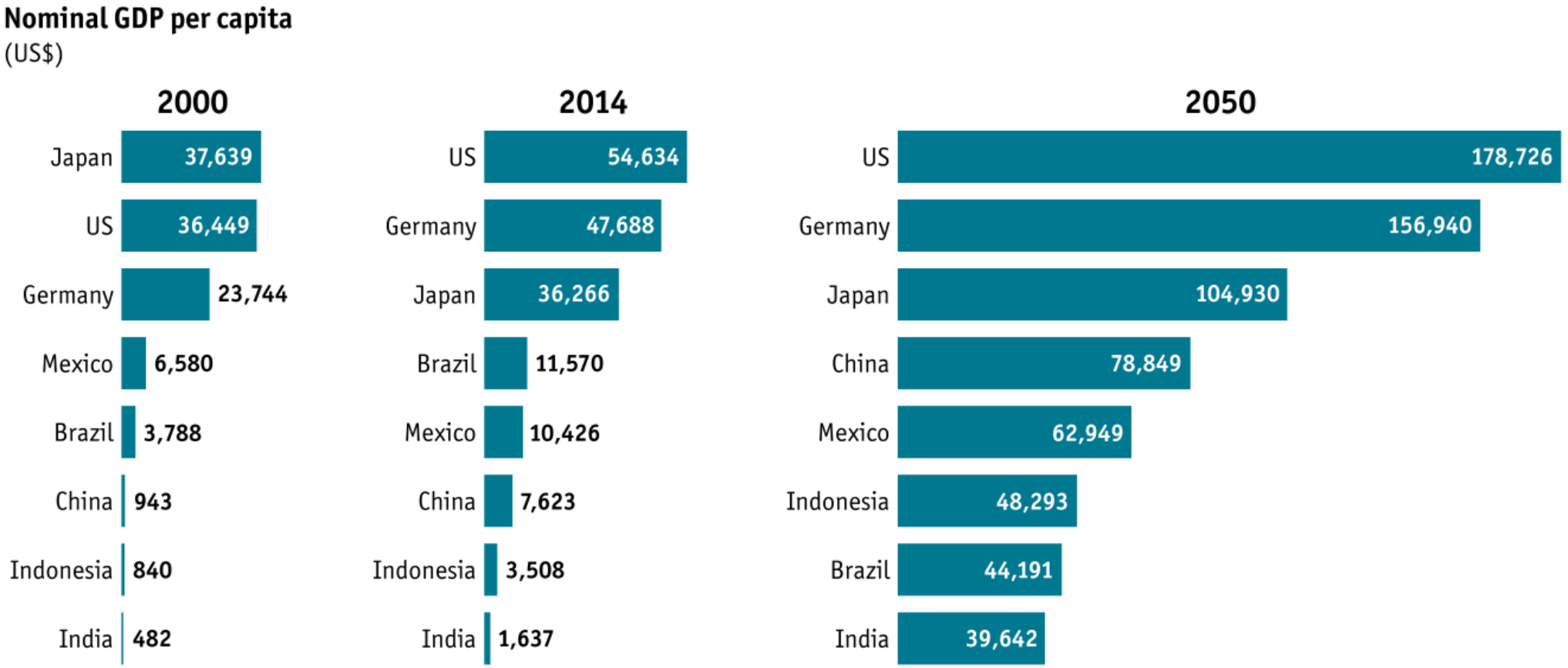


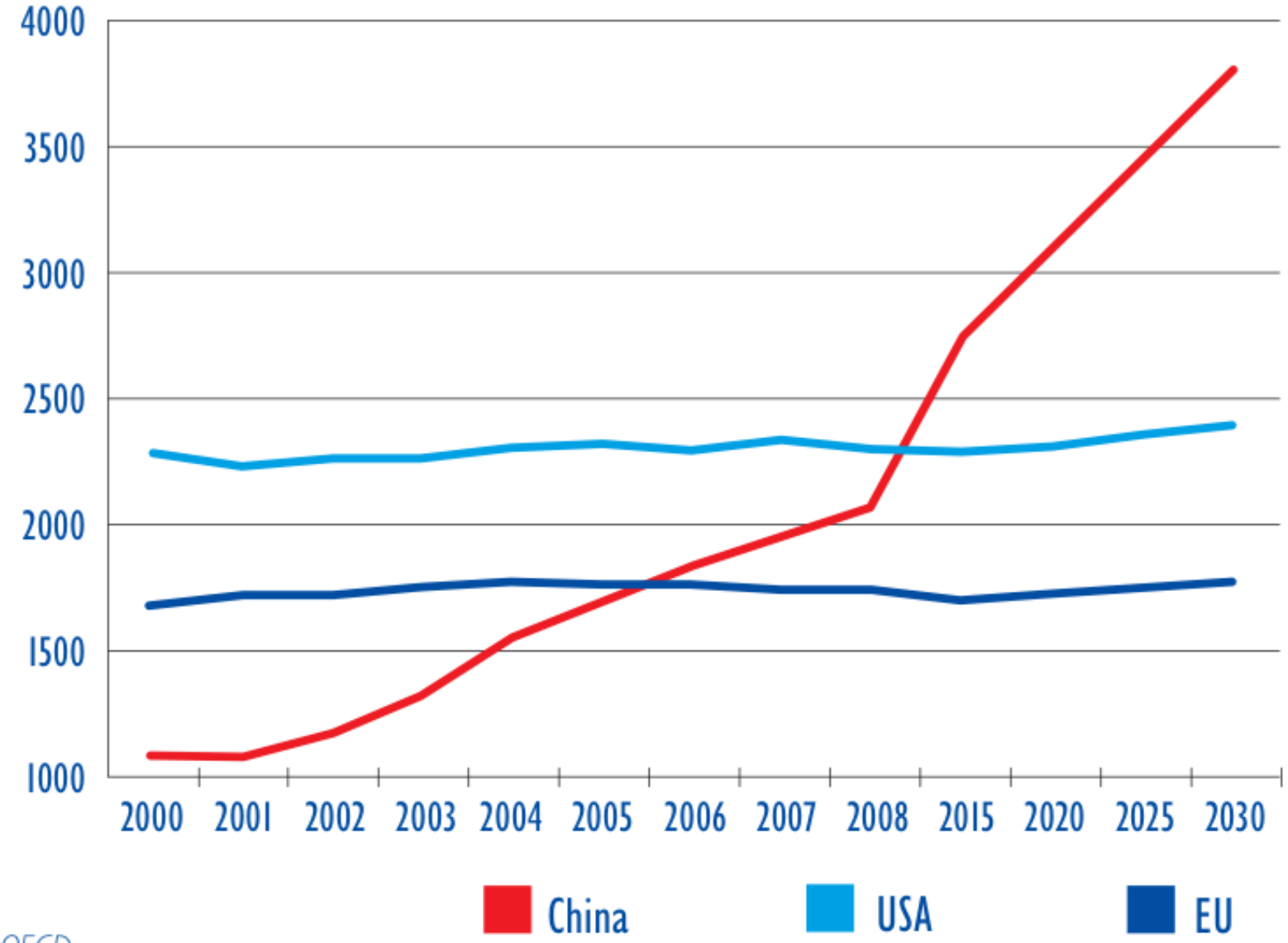
Source: The Economist Intelligence Unit.

Collectively rich, individually not so rich



Source: The Economist Intelligence Unit.

Total primary energy supply
(Million tons of oil equivalent)



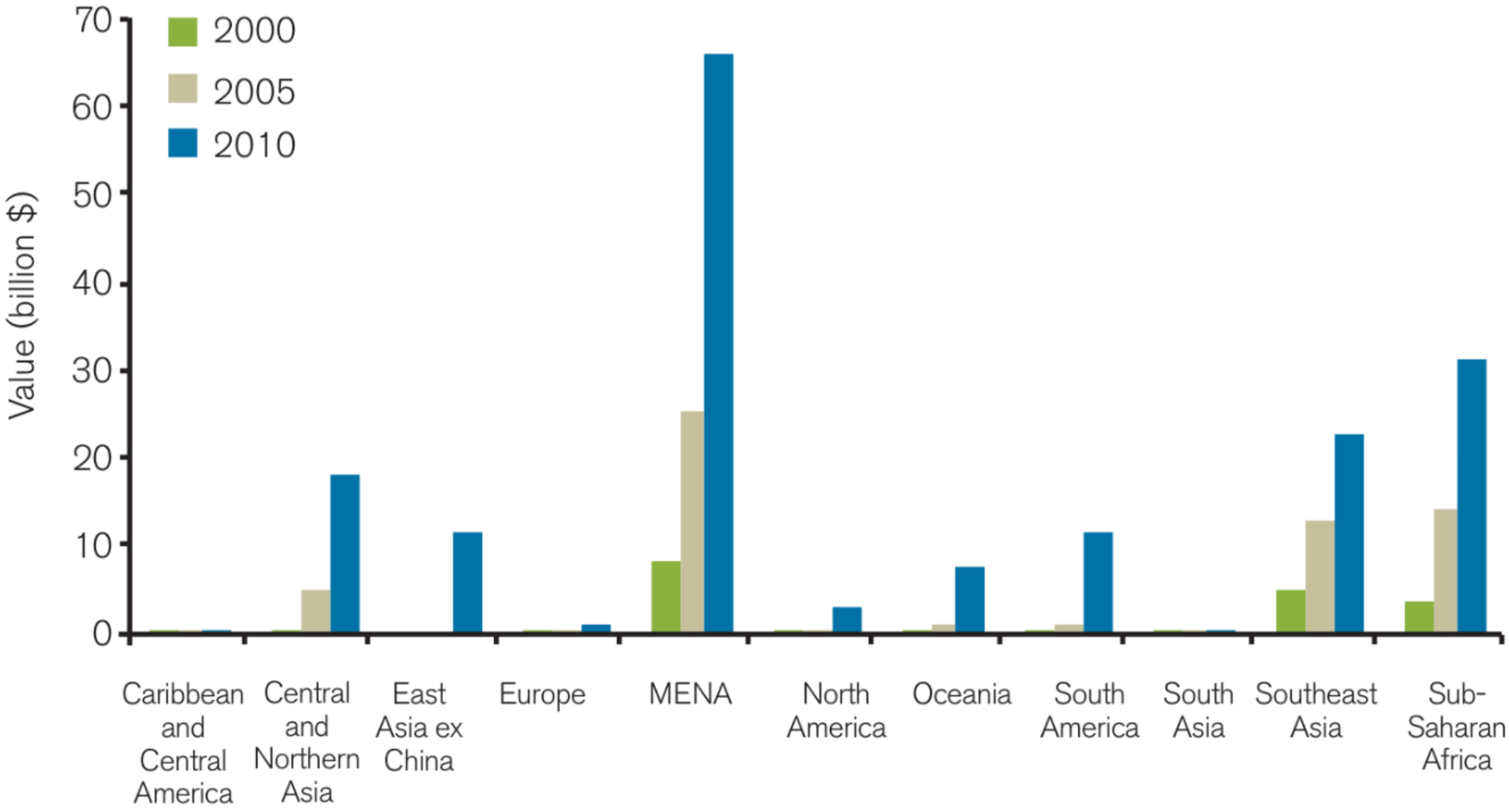
Source : OECD

Table 1.1: Outlook for natural resources by 2020 and 2030

	By 2020	By 2030
Food	• Average crop prices increase by 15–20% against long-rate average, but lower than 2008–10 spike.[3] • Global food production grows by 1.5% per year.[4] • Stocks-to-use ratios remain at crisis thresholds. • Fish-as-food demand increases by 11–17% compared with 2010.[5]	• Cereal prices increase by 70–90% compared with 2010; up to 130–170% with climate change.[6] • Crop demand reaches 2.7 billion tonnes, from 1.9 billion tonnes in the 1990s.[7] • Meat demand growth between 2001 and 2030 estimated at 1.7% per year.[8] • Fish-as-food demand grows by 20–30% compared with 2010.[9]
Energy	• Demand for energy increases by 17% (from 2010) by 2020. • To meet oil supply in 2020, over $3 trillion of investment in the oil sector is needed. • Prices for oil are around $120 per barrel. Gas prices remain differentiated by regions, with Asia's being significantly higher than North America's.	• Demand for energy grows by 29%. Coal demand grows by 20% and gas by 44%. • By 2035 a total of over $37 trillion of investments in the energy sector, half of which will go to the power sector, is needed. • Prices for oil are at $100–140 per barrel in real terms.
Metals	• 30–50% demand growth for major metals; rare earth demand doubles from 2010 levels.[10] • Copper faces a 30% supply gap in absence of considerable additional investment.[11] • Heavy rare earths remain in deficit until around 2018–20.[12]	• 90% demand growth for steel, 60% for copper (2010 baseline). Demand for aluminium more than doubles.[13] • Copper could face a 50% supply gap in absence of considerable additional investment.[14] • Potential for temporary shortages of speciality metals with wider deployment of novel technologies.

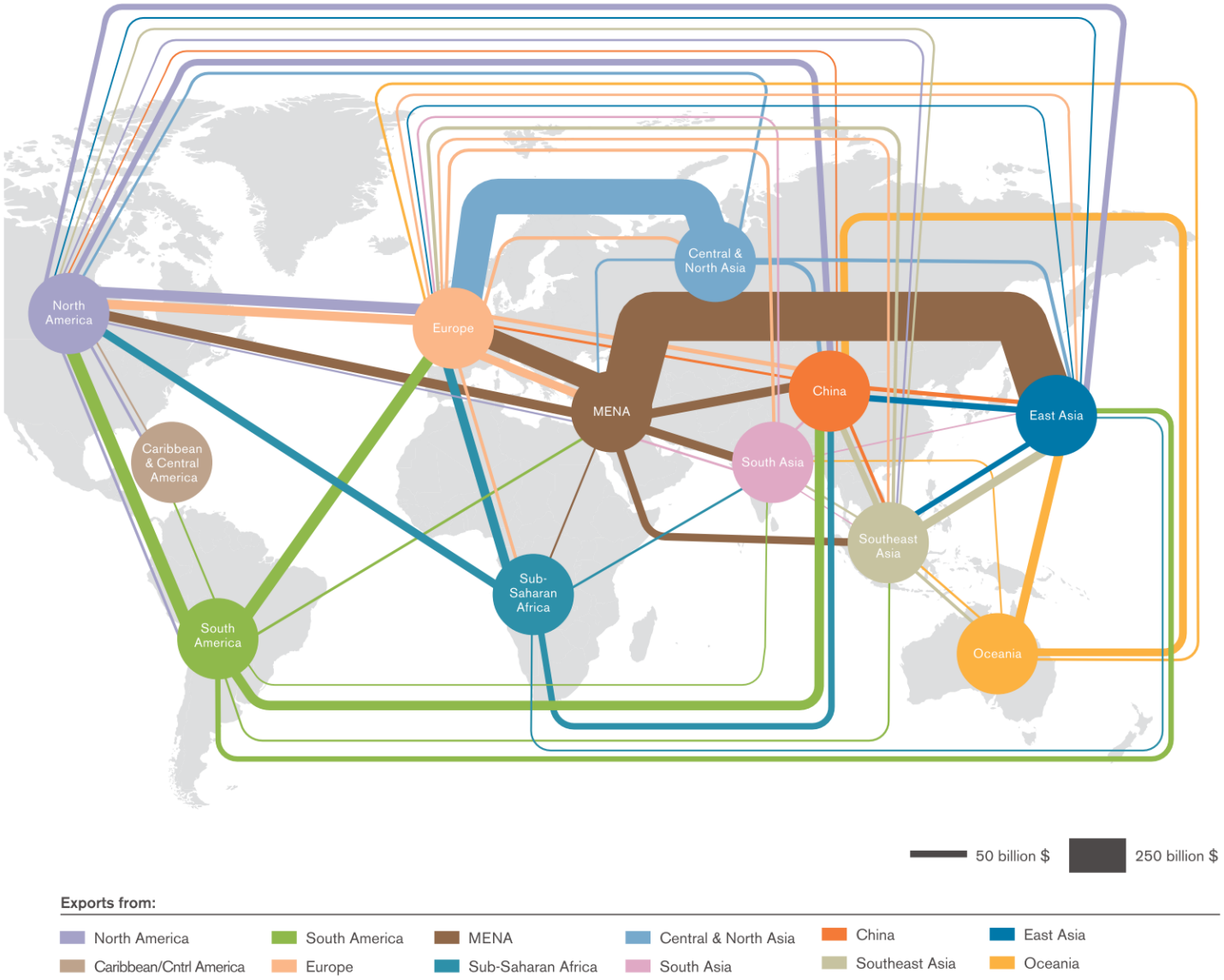
Sources: IEA 2012 New Policies Scenario and FAO, compiled by Chatham House for NIC. NIC (forthcoming) US national security impacts of natural resources by 2020, 2030 and 2040.

Figure 2.14: Energy imports by China from other regions (2000–10)



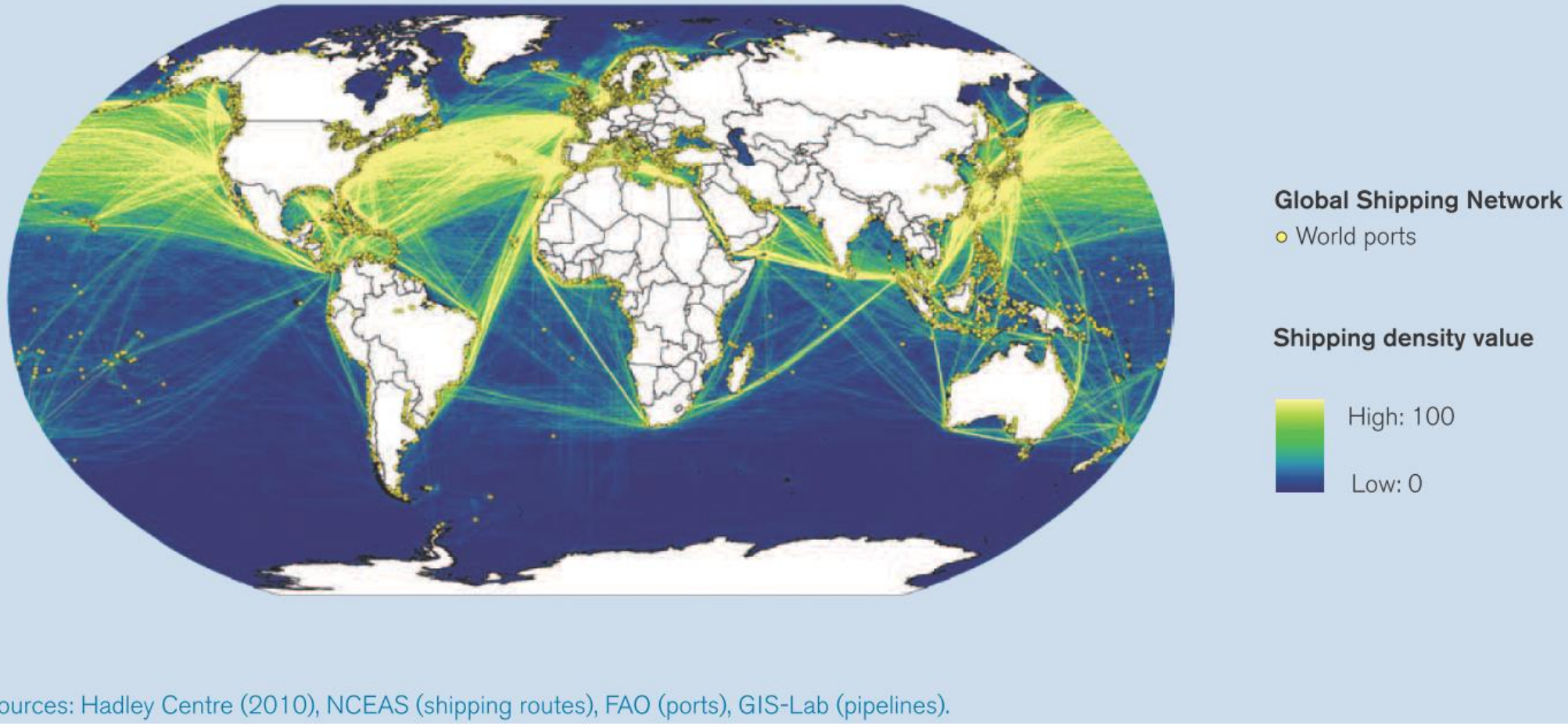
Source: Chatham House Resource Trade Database, BACI, COMTRADE.

Figure 1.2: Resource trade between regions, by value, 2010



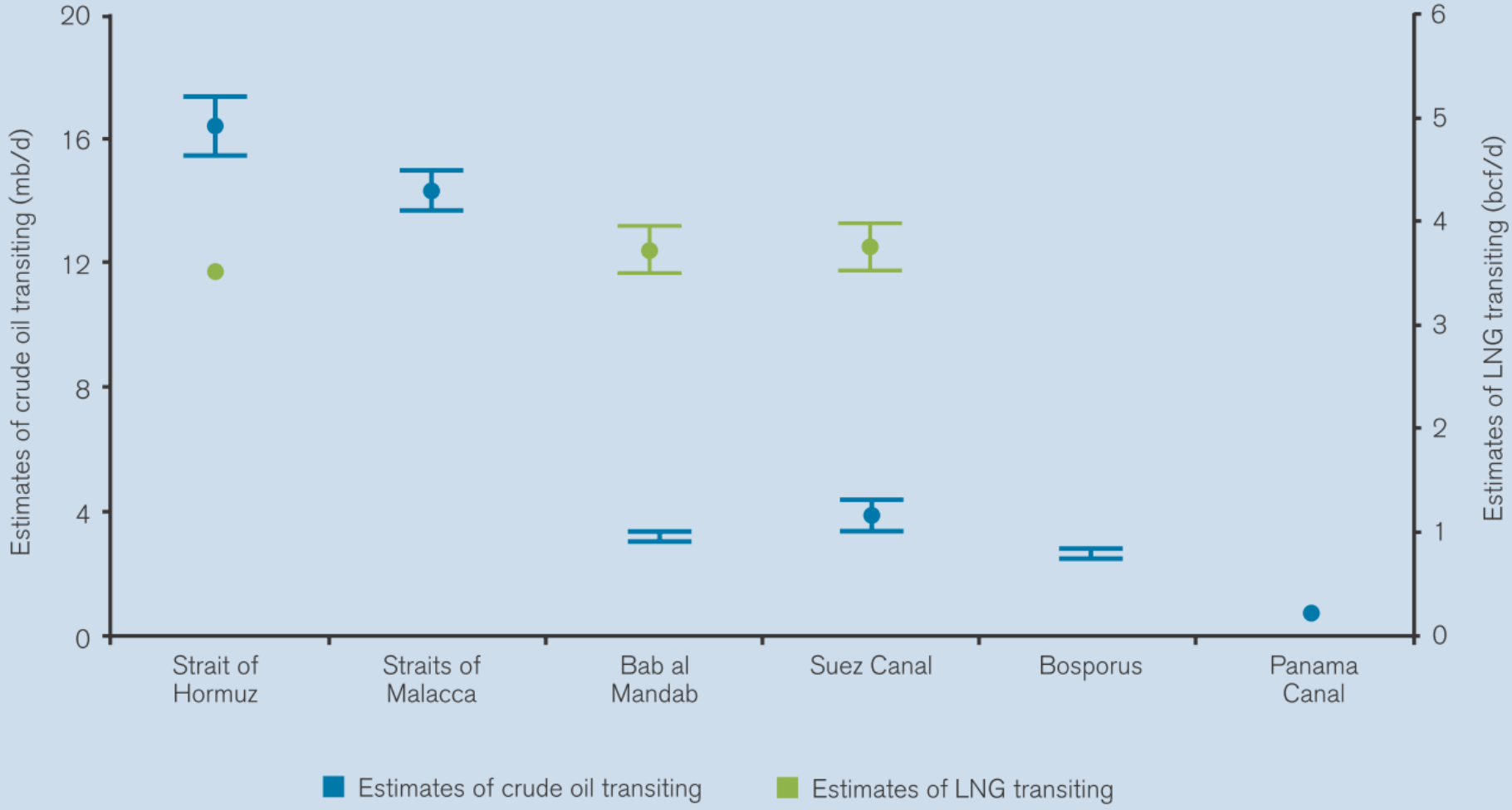
Sources: Chatham House Resource Trade Database, BACI, COMTRADE. Resource trade flows between regions worth more than 10 bn $ in 2010.

Figure 4.12: Global shipping routes, pipelines and world ports



Sources: Hadley Centre (2010), NCEAS (shipping routes), FAO (ports), GIS-Lab (pipelines).

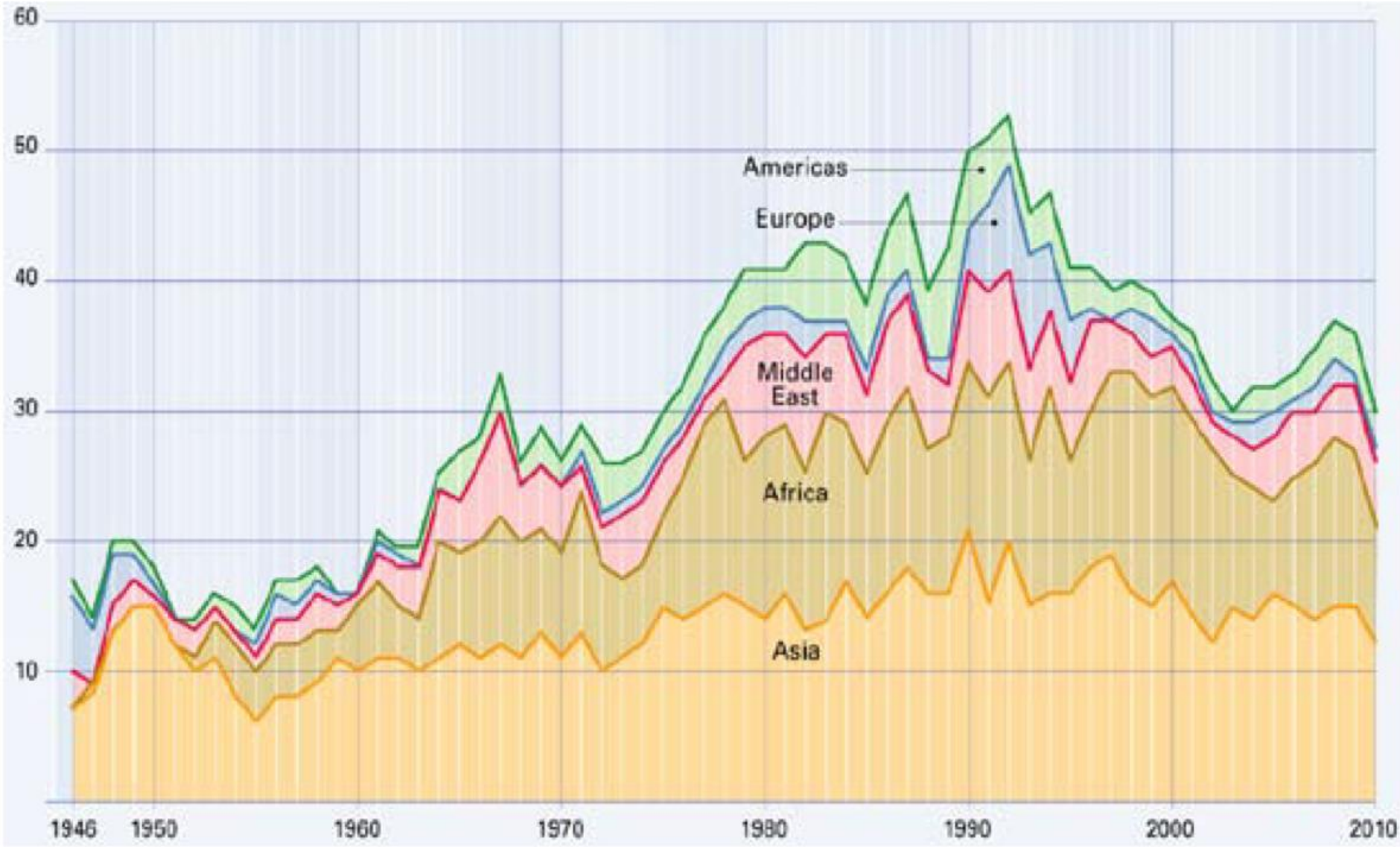
Figure 4.13: Estimated volumes of oil and gas through key choke points, 2010



Source: Stevens and Emmerson (2011).


China
South China sea
Philippine Sea
Malacca Straits
Asian Meridian
Australia
Malacca Straits
• 15 million barrels per day of oil (18% of global total).
• 70% of China's oil imports.
• 60,000 shipping movements per year.
• 25% of all global trade.
• History of piracy.

Figure 20: Conflict around the world, 1946-2010



Source: Uppsala University Peace and Conflict Research (2011).

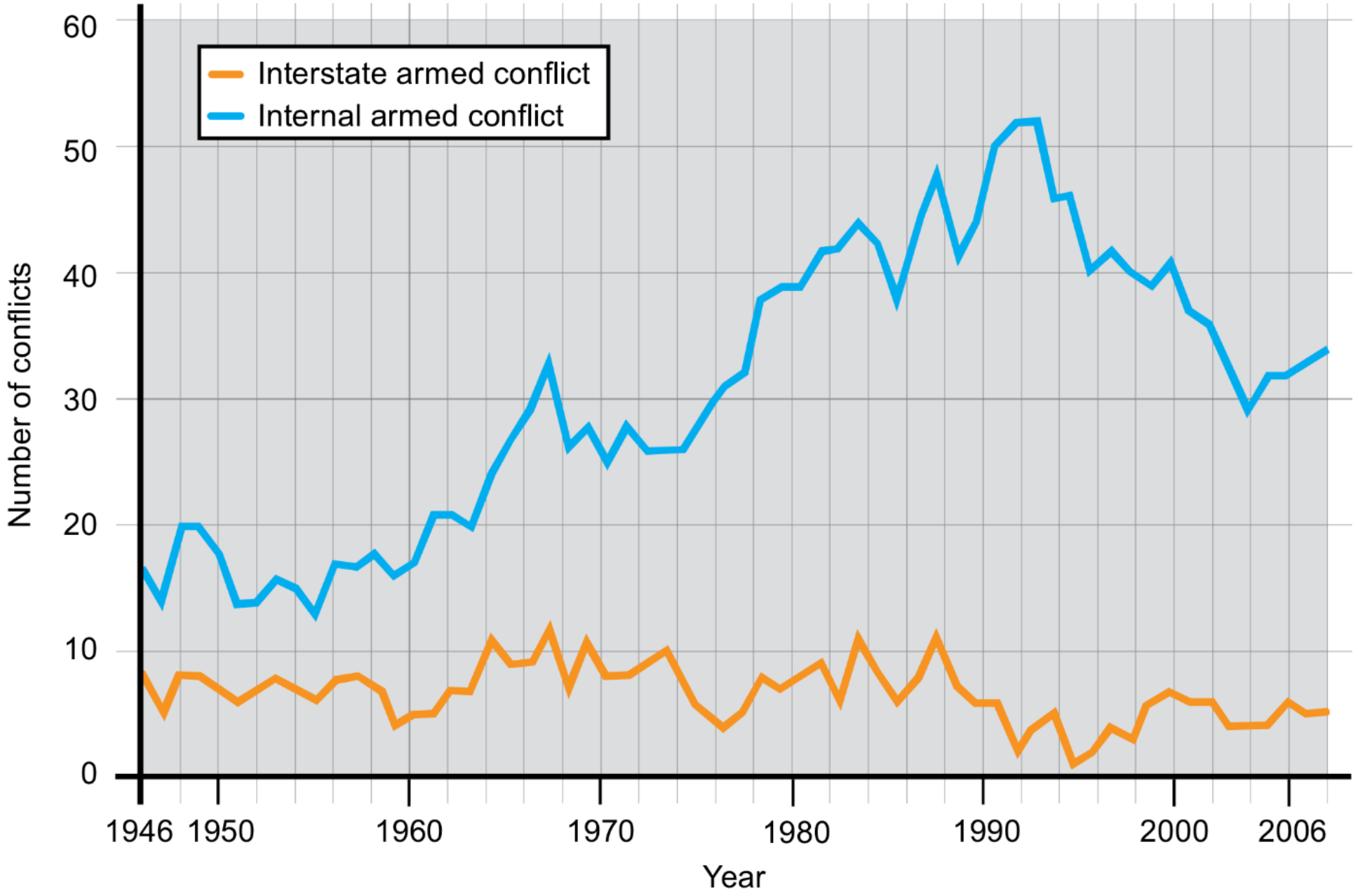
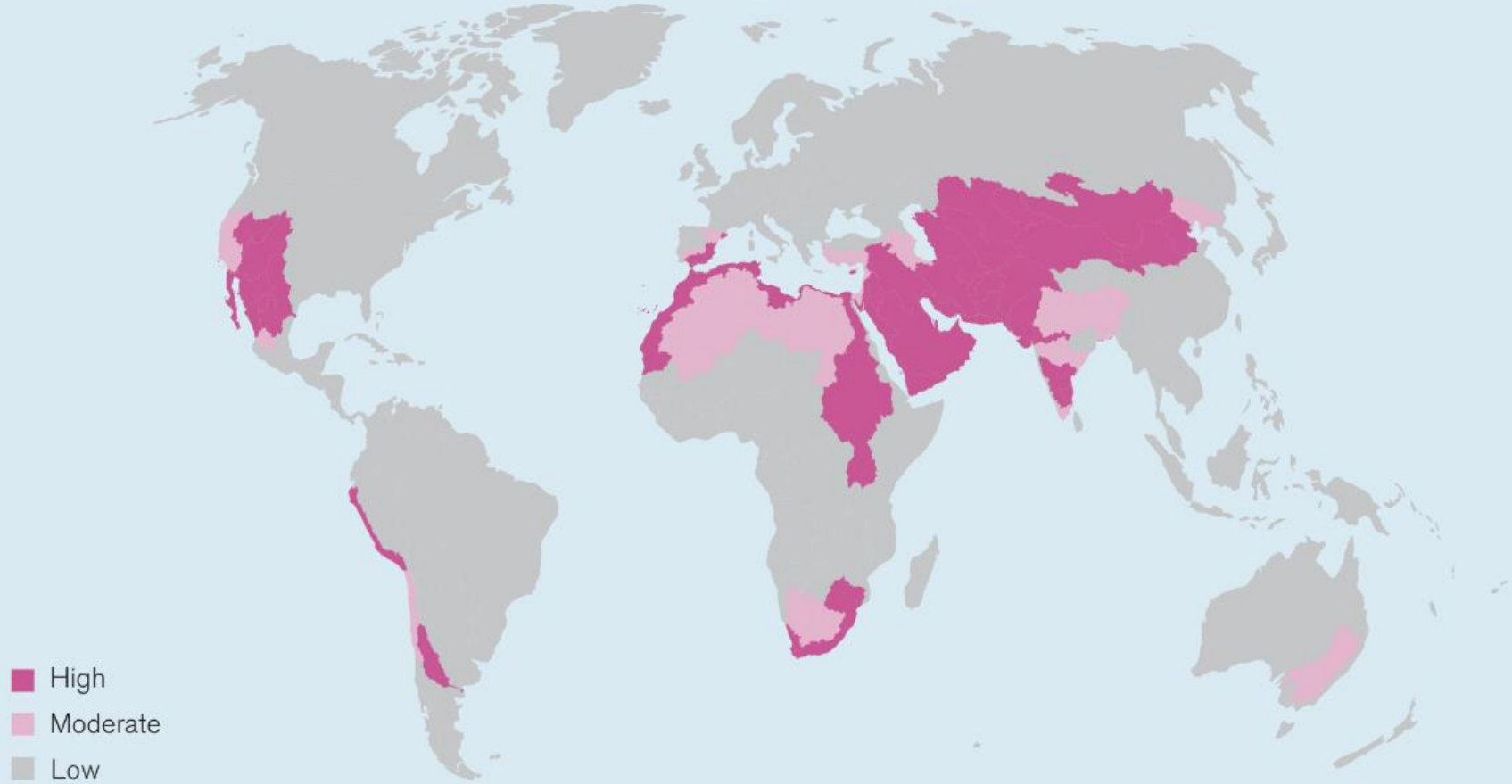


Figure 9 – Global Trends in Armed Conflict[111]

Figure 4.6: Global distribution of physical water scarcity



Source: FAO (2011).

COUNTRIES AT HIGH RISK OF STATE FAILURE		
Rank	2008	2030
1	Burundi	Somalia
2	Yemen	Burundi
3	Somalia	Yemen
4	Afghanistan	Uganda
5	Uganda	Afghanistan
6	Malawi	Malawi
7	Dem. Rep. of Congo	Dem. Rep. of Congo
8	Kenya	Kenya
9	Haiti	Nigeria
10	Ethiopia	Niger
11	Bangladesh	Pakistan
12	Pakistan	Chad
13	Nigeria	Haiti
14	Niger	Ethiopia
15	Chad	Bangladesh

Source: Sandia National Laboratories.