THE EMERGING MARKETS SYMPOSIUM

GREEN TEMPLETON COLLEGE | UNIVERSITY OF OXFORD

PUTTING PEOPLE FIRST

HUMAN DEVELOPMENT IN MILLENNIAL ECONOMIES

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ACKNOWLEDGEMENTS

This monograph has had many midwives. None is in any way responsible for errors of omission, commission, exposition or interpretation. But all of them, in ways large and small, deserve credit for such merits as it has. Accordingly, we are immensely grateful to the following.

- The C&C Alpha Corporation without whose financial support the EMS could not have existed.
- Successive Principals of Green Templeton College: Sir David Watson, Professor Denise Lievesley and Sir Michael Dixon for their guidance, patience and wisdom.
- Former Prime Minister of Pakistan and Chairman of the EMS Steering Committee, H. E. Shaukat Aziz, for his tireless commitment to and leadership of the EMS enterprise.
- Former Dean of Templeton College, Pro-Vice-Chancellor of the University of Oxford and co-founder of the EMS, Michael Earl, for his enthusiasm, inspiration and wise advice.
- Members of the EMS Steering Committee: Sir George Alleyne, Rodrigo Botero, Peter Bourne, Tsung Mei Cheng, Saul Estrin, Alexandre Kalache, Serra Kirdar, Pedro Malan, Sania Nishtar, Robert Picciotto, K. Srinath Reddy, Ngaire Woods and Shengman Zhang for their personal and collective commitment and judgement.
- The 234 participants in nine EMS symposia who shaped the findings, conclusions and recommendations that form the backbone of this monograph.
- The staff of Green Templeton College, notably Ruth Loseby and Yoland Johnson, whose largely invisible yet indispensable organising skills, unfailing good humour and calmness under pressure ensured the EMS symposia stayed on the rails, no matter what.
- Ruth Scobie, who shepherded the process of publishing this monograph.
- The staff and management of Egrove Park (Saïd Business School, University of Oxford), who provided a superb home for EMS symposia.
- The cadres of graduate assistants from Green Templeton College who prepared analytical frameworks for and records of the symposia.
- The individuals and institutions who authorised access to the source materials cited in the text.

LIST OF ACRONYMS

AYBU	Ankara Yildirim Beyazit University
BRICS	Brazil, Russia, India, China, South Africa
CEPR	Centre for Economic Policy Research
COVID-19	SARS-CoV-2 (Coronavirus) 2019
EMDE	Emerging Markets and Developing Economies
EMS	Emerging Markets Symposium
EU	European Union
G7	Group of Seven
G20	Group of Twenty
GDP	Gross Domestic Product
GNP	Gross National Product
HD	Human Development
HDI	Human Development Index
HIC	High Income Country
ICOR	Incremental Capital/Output Ratio
IMF	International Monetary Fund
LIC	Low Income Country
LSE	London School of Economics
MERS	Middle East Respiratory Syndrome
MEs	Millennial Economies
MPI	Multi Poverty Index
NCD	Non-Communicable Diseases
NEET	Not in Education, Employment or Training
NOx	Nitrous Oxide
NRS	National Resilience Strategy
OADR	Old Age Dependency Ratio
OECD	Organisation for Economic Cooperation and Development
OMPHI	Oxford Maternal and Perinatal Health Institute
PHEICC	Public Health Emergency of International Concern
PMTCT	Prevention of Mother to Child Transmission
POADR	Prospective Old Age Dependency Ratio
SARS	Severe Acute Respiratory Syndrome
SO2	Sulphur Dioxide
TFR	Total Fertility Rate
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WTO	World Trade Organisation

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FOREWORD

SIR MICHAEL DIXON

In 2008, as Green Templeton College was formed from the previously separate Green and Templeton colleges, a new academic initiative was established to run a series of symposia on human development in a subset of emerging markets described as 'Millennial Economies'. Over the next decade nine events badged the Emerging Markets Symposia (EMS) were held at Templeton College's erstwhile home, Egrove Park, with generous financial backing from the C&C Alpha Group.

The more than 230 participants in the EMS, many of whom travelled from far afield, returned repeatedly. This was due in most part to the unique opportunities for candid and challenging exchanges in a secure environment between leading figures from governments, multilateral organisations, business, civil society and academia.

The theme of human development in emerging economies is complex and potentially inexhaustible, and the symposium series might have continued indefinitely. However, in 2018 the EMS Steering Committee decided that it would be useful to take stock and synthesise the outputs of the symposia, so a summary publication was planned.

In 2020 these plans, like everything else, were disrupted by the COVID-19 pandemic. Although a draft of the summary document was complete, it needed to be updated to quantify, analyse and incorporate the implications and initial consequences of the pandemic. The key messages are that the physical integrity and future prosperity of the twenty Millennial Economies featured in the EMS will hinge on enhanced economic and environmental resilience; that enhanced resilience will hinge on human development; and that economic and social development strategies in these economies must, accordingly, be modified.

These messages are also relevant to advanced, developing and other emerging economies. But that does not diminish their urgency in Millennial Economies, which are more differentiated now than when the EMS was created. Many of these economies, by virtue of their economic capabilities and geopolitical influence, could demonstrate global leadership in shaping resilient economic, social and human development strategies in the peculiarly challenging environment of this decade.

I should like to acknowledge the expert leadership of the EMS Steering Group by HE Shaukat Aziz, and the authors for compiling this excellent digest of the nine EMS.

Michael Dixon
Principal, Green Templeton College
April 2023

PREFACE

The original objective of this publication was to interpret the outcomes of nine symposia at Green Templeton College, Oxford, on human development in emerging economies. The symposia focused on a cohort of 20 Millennial economies (so-called because the cohort came into being just before and just after the Millennium). The cohort included Argentina, Brazil, Chile, China, Colombia, Egypt, India, Indonesia, Jordan, Malaysia, Mexico, Pakistan, Peru, the Philippines, Poland, Russia, South Africa, Thailand, Tunisia and Turkey.

As a book-length draft of what is now a monograph neared completion in early 2020, it became increasingly clear that the COVID-19 pandemic announced by WHO on 11 March 2020 would have serious repercussions for Millennial economies. It also became clear that: (i) the impact of the pandemic would almost certainly affect its findings and conclusions; (ii) the work could not be completed in the absence of much more knowledge of the pandemic's magnitudes, trajectories and consequences; (iii) there was no knowledge about when relevant data on the pandemic might become available; (iv) maintaining the original publication schedule would mean the analysis would be quickly outdated; and (v) publication would have to be delayed. As it turned out that was just as well.

First, because the short- and long-term consequences of the pandemic in Millennial economies were substantial (although less than initially feared). Second, because the enforced delay allowed time to recognise the virtues of brevity, which is why the planned book became a monograph. Third, because although its treatment of economic and social development in Millennial economies between 1980 and 2010 and its interpretation of policies and interventions that vastly reduced poverty while exacerbating inequity and inequality are largely unchanged, there are important differences between the partial draft of June 2019 and this final version.

The differences include:

- A revised assessment of the great recession (2007-09)
- A modified interpretation of why welfare and well-being in Millenial and advanced economies partially converged in the first decade of the new century and diverged in the next.
- An analysis of the impact of COVID-19 on Millenial economies.

The monograph has five parts. Part 1 is an introduction. Part 2 considers definitional and conceptual questions: what are emerging markets/Millennial economies; what were the conceptual underpinnings and specific objectives of the symposia; what do we mean by human welfare/well-being, human capital accumulation/formation and human development? Part 3 describes age-specific and generic determinants of human development in Millennial economies over the human life course. Part 4 is a historical (1945–2022) perspective on economic and social change in Millennial economies, which (i) explores issues of convergence, divergence, resilience and human development and (ii) assesses the socioeconomic impact of COVID-19. Part 5 explores issues of social and economic resilience in Millennial economies through c.2030.

Ian Scott
Executive Director
Emerging Markets Symposium
Green Templeton College, Oxford

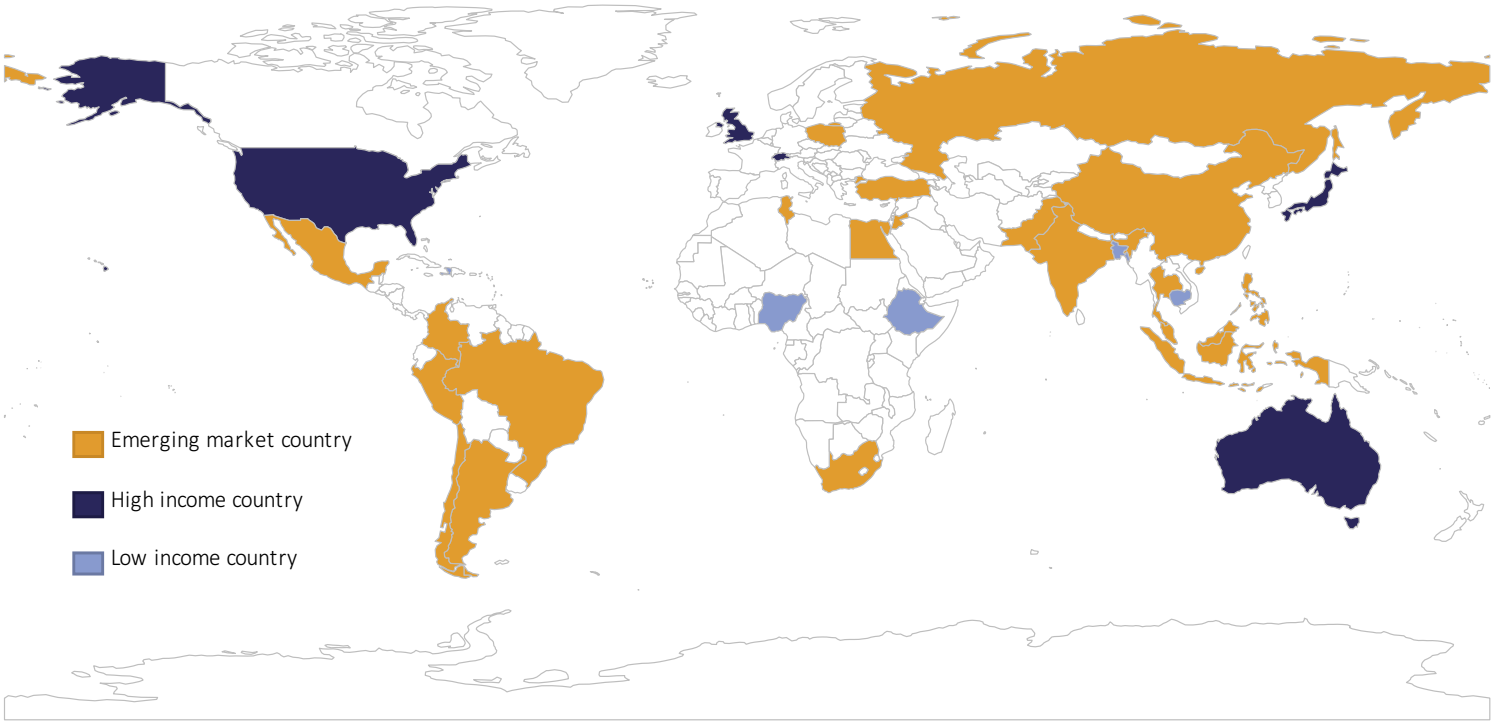


Figure 1: Millennial economies in the world
Source: EMS (2017)

SYNOPSIS

This monograph explores five linked propositions. First, that sustainable economic growth, social coherence and political stability in Millennial economies are partially predicated on human capital formation/accumulation and human welfare/well-being (aka 'human development'). Second, that public, private and civic initiatives to promote human development in these economies must balance national economic interests with principles of human equality and equity. Third, that the speed, scope and sustainability of human development are governed by political feasibility. Fourth, that the comparative advantages and disadvantages of economic and social systems are strongly influenced by cumulative and circular causation. Fifth, that seemingly immutable socioeconomic problems that cannot be resolved, can be attenuated.

These propositions were severely tested in 2019–21 when, in Millennial and other economies, the COVID-19 pandemic caused widespread economic and human damage. The damage included lost lives, jobs and earnings; disrupted education, health and social care; increased social and economic inequality and inequity within Millennial economies and between Millennial and advanced economies; and the partial unravelling of socioeconomic progress made in Millennial economies since c.1980.

The pandemic was many things. It was a harbinger of geo-environmental, geo-economic and geopolitical threats to Millennial and other economies in the global contexts of international mistrust, resurgent autocracies, enfeebled democracies, weak bureaucracies and partially redundant architectures of international collaboration. It was a 'canary in a coalmine' warning that most Millennial economies had limited capabilities to anticipate and manage economic, social, political, environmental and medical threats to peace and prosperity. It was a reminder that post-COVID reconstruction would compete for resources with the pursuit of long-term growth, social coherence and stability in Millennial economies. And it was a powerful message that development strategies in Millennial economies must incorporate *national resilience strategies* focused on sound macroeconomic management, environmental conservation, adaptation and mitigation and coordinated social interventions in health and education.

This monograph blends our retrospective view of the outcomes of the 2009–18 series of EMS symposia with our assessment of the implications of the COVID-19 pandemic. Accordingly, readers may wish to read it in conjunction with reports on nine symposia on emerging market economies published by Green Templeton College, Oxford between 2010 and 2018 (see References).

Table 1

Real GDP in Millennial economies ($million in 2017 prices)

	2007	2018	2019	2007/18 Change	2018/19
Argentina	16,769	23,018	21,826	37%	-5%
Brazil	11,527	14,522	14,593	26%	0%
Chile	18,105	23,286	23,252	29%	0%
China	7,817	13,819	14,128	77%	2%
Colombia	10,036	13,782	14,057	37%	2%
Egypt	7,413	12,278	12,059	66%	-2%
India	3,622	6,579	6,711	82%	2%
Indonesia	5,392	11,247	11,595	109%	3%
Jordan	7,958	10,844	1,789	36%	-1%
Malaysia	18,299	24,924	25,735	36%	3%
Mexico	16,249	19,200	18,736	18%	-2%
Morocco	5,459	7,752	7,923	42%	2%
Pakistan	3,776	4,957	5,026	31%	1%
Peru	8,302	12,158	12,236	46%	3%
Philippines	5,020	8,229	6,448	64%	3%
Poland	19,368	30,522	31,985	58%	3%
South Africa	12,991	12,671	12,536	-2%	-1%
Thailand	11,842	16,928	17,115	43%	1%
Tunisia	10,596	11,044	11,980	4%	0%
Turkey	17,354	27,500	26,947	58%	1%

Source: Our World in Data, 2020.

Note: Although GDP per capita is an inadequate and incomplete metric of social and economic development, it is used here as a reliable measure of changes in economic output over time

PART 1: INTRODUCTION

In 2006–07, *emerging economies,* also known as *emerging markets,* had been enjoying a good run. They were increasingly viewed as global economic players. Their collective performance evoked excitement that globalisation and the end of the Cold War offered the prospect of relatively rapid 'convergence' of living standards in emerging and advanced economies. Rapid growth in emerging economies was seen by advanced economies as positive for the world as a whole. The efforts of emerging economies to end poverty, many of them in China and India, were embraced as shared goals by the United Nations and other multilateral organisations. And emerging economies were increasingly seen as intellectually and even financially capable of propelling their own development.

In 2007–08, scholars at Templeton College, Oxford[1] considered the futures of what they would later call the Millennial cohort of emerging economies[2] against the background of: (i) profound upheavals triggered by the global financial crisis of 2007–08; (ii) a perception that, in a glow of pre-recession optimism, the multilateral system had largely abandoned emerging economies; and (iii) speculation about what would replace the Multilateral Development Goals (MDGs). The scholars concluded that:

- The cohort was politically, economically and culturally diverse.
- Over the previous 20 years, sustained growth, job creation, rising incomes and public and private investments in healthcare, education, housing, infrastructure, sanitation, nutrition and social services had lifted more than a billion people in emerging economies out of poverty.
- In 2000, the cohort accounted for almost half the world's population and 40% of its economy. As its geo-economic and political weights increased, it accounted for even larger shares of global population and GDP by 2020.

Many observers assumed that the effects of initial advantages and disadvantages, circular cumulative causation (see Box 1),[3] and resilience to endogenous and exogenous shocks that had allowed high-performing emerging economies to form a recognisable cohort, would continue indefinitely. Others[4] argued that the torrid pace of globalisation was politically unsustainable (political concerns in advanced economies came later). A chorus of economists warned policymakers about the clear and increasingly present dangers of 'middle-income traps'.[5] (See Box 2.) Experts cautioned that unaddressed domestic and foreign issues could prevent Millennial economies from emulating the emerging economies of the 1950s, 60s and 70s.[6] And more than a few analysts wondered if, when and how their living standards and those of advanced economies would eventually converge.

Box 1: Cumulative circular causation

The notion of stable equilibrium is normally a false analogy to choose when constructing a theory to explain the changes in a social system. What is wrong with the stable equilibrium assumption as applied to social reality is the very idea that a social process follows a direction – though it might move towards it in a circuitous way – towards a position which, in some sense or other, can be described as a state of equilibrium between forces. Behind this idea is another and still more basic assumption, namely that a change will regularly call forth a reaction in the system in the form of changes which on the whole go in the opposite direction to the first change. The idea I want to expound is that, on the contrary, in the normal case there is no such tendency towards automatic self-stabilisation in the social system. The system is by itself not moving towards any sort of balance between forces but is constantly on the move away from such a situation. In the normal case, a change does not call forth countervailing changes but, instead, supporting changes, which move the system in the same direction as the first change but much further. Because of such circular causation, a social process tends to become cumulative and often gathers speed at an accelerating rate.

Gunnar Myrdal (1957)

1 Before the merger in 2008 of Templeton College and Green College (the first college merger in the history of the University of Oxford).

2 So-called because it came into being around the time of the Millennium in 2000.

3 Models of circular and cumulative causation offer powerful explanations of why cities, regions, businesses and civic organisations retain and build on initial advantages and why erstwhile winners that fail to adapt to changing conditions may become losers. See Myrdal (1944, 1953, 1957), Kaldor (1966, 1967, 1972), Berger (2009).

4 For example, Rodrik (2011).

5 See *Economist* (Feb 2022).

6 The post-war cohort (c.1945–70) included Finland, Greece, Hong Kong, Singapore, South Korea, Spain and Taiwan.

THE EMERGING MARKETS SYMPOSIA

In light of these concerns and conjectures, the Templeton scholars hypothesised that:

'Without diversified and accelerated human development, Millennial economies will fail to sustain economic growth, social coherence and political stability, escape middle-income traps or converge with advanced economies.'

They suggested their hypothesis should be considered by authorities from governments, businesses and civil societies (including academia) in emerging and advanced economies. Seeking financial support, they turned to the C&C Alpha Group, a London-based holding company, which very generously funded a ten-year series of multidisciplinary symposia managed by the newly created Emerging Markets Symposium (EMS) at Green Templeton College, Oxford.

At the time of the first symposium (December 2009), the shock of the world financial crisis was still raw. G7 leaders[7] had reached out to other large economies[8] and the EU to establish the 'G20 leaders' process'. Recognising that emerging economies were systemically significant, its leaders agreed that the G7 should engage with emerging economies to help rescue the global economy.

The G20 London Summit in May 2009 marked the apogee of solidarity. The slow (and, in most cases socio-economically regressive) recovery changed political sentiments towards globalisation. Those sentiments were exploited by populist parties on both sides of the Atlantic (with the notable exception of Canada). As the decade of the 'noughties' ended and the EMS series started, emerging economies faced a hostile global geopolitical setting, growing concerns over climate change and ecosystem breakdown, species destruction and, in some cases, intensifying and potentially destabilising human development challenges at home.

7 Canada, France, Germany, Italy, Japan, United Kingdom, United States.

8 Nine of them (Argentina, Brazil, China, India, Indonesia, Mexico, Russia, South Africa, Turkey) in the Millennial cohort.

CONCLUSIONS

This monograph's core conclusions are as follows.

- Economic and social development in Millennial economies since c.1980, particularly in the first decade of the 21st century, were distinguished by:
  - the unprecedented speed and scale of economic, social, cultural, demographic and spatial change;
  - the development of national, corporate, communal and individual capacities, capabilities and competencies;
  - the partial convergence of human well-being in advanced and Millennial economies.
- The least vulnerable Millennial economies[9] entered the 2007–09 recession later and came out of it earlier than those that were more vulnerable.[10]
- Post-recession:
  - most Millennial economies suffered from the direct and indirect consequences of declining productivity;
  - human well-being in advanced economies and vulnerable Millennial economies diverged.
- Whereas many observers see the post-war history of human welfare in *advanced* economies as long periods of improvement followed by declining expectations and pessimistic views on the future, others (e.g. Fisher, 2022)[11] point to relative optimism based on recent improvements in living conditions in Millennial economies.[12]
- The COVID-19 pandemic:
  - was a devastating event for which the world was less well prepared than it could have been;
  - revealed that although some Millennial economies coped better than others, none were unscathed;
  - served as a reminder that, in varying degrees, Millennial economies were vulnerable to future epidemic diseases and environmental and geopolitical shocks that could disrupt, destroy or damage prospects for global peace, trade and governance;
  - emphasised that growth, coherence and stability in Millennial economies would largely depend on strengthening collective and separate resilience to future shocks through human development strategies[13] that included: (i) comprehensive public health services, (ii) coordinated primary healthcare systems, (iii) primary education systems articulated with secondary and, in turn, tertiary systems in which public, private and civic sector employers play strategic and supportive roles. (See Box 3.)

9 Those less dependent on external demand and/or high exposure to foreign bank claims (see Llaudes et al., 2010).

10 Notably economies with larger bank claims that had experienced pre-crisis credit expansion.

11 Echoing Harold MacMillan's comment in 1957, at a rally in Bedford, that most Britons 'have never had it so good'.

12 Illustrating the aphorism attributed to Rufus Miles (c.1949): 'Where you stand depends on where you sit'. See Miles (1978).

13 Partly grounded in digitally supported internet-based health and education systems.

Box 2: The middle-income trap

Gill and Kharas (2015) identify a *middle-income trap* for countries that find the transition from middle-income status to advanced economy status elusive. In 2009, Malaysian Prime Minister Najib Razak announced: 'We have become a successful middle-income economy, but we cannot and will not be caught in the middle-income trap; we need to make the shift to a high-income economy, or we risk losing growth momentum in our economies, and vibrancy in our markets.' Since then, the nature and risks of the trap have been hotly debated by economists, business leaders and media pundits, and in high-level policy circles.

Reflecting evidence that GDP growth rates often slow down and that, after years of rapid growth, economies can struggle to maintain international competitiveness, make structural changes and significantly reduced poverty, the World Bank (2013) found that only 13 of 101 economies identified as 'middle-income' in 1960 had become high-income countries by 2011. Other studies have found that the thresholds at which growth tapers off range from $8,500 to $18,500 (in 2010 prices). They have also identified a variety of possible causes, including rising wage/unit labour costs, dwindling supplies of surplus labour, diminishing labour migration, falling natural population growth, declining productivity growth, failure to invest in human capital, populations that aged before they got rich, input rather than productivity-driven growth, lagging rates of technological change, and lack of private sector innovation.

Box 3: Economic resilience

More often used than rigorously defined yet increasingly relevant in an inherently fragile world, national economic resilience broadly describes the capacity to anticipate, manage, adapt to and recover from random economic shocks and unexpected events (some of which might have been foreseen). These events are invariably damaging, disruptive and destructive but may be benign (as when market forces or the discovery of natural assets increase national wealth and income potential) and are tightly linked to ecological trends, climate change, biological depletion and communicable diseases. National resilience strategies encompassing some or all of these elements are still rare; no emerging economy had such a strategy in December 2022.

Conclusions on health

The main conclusions on health are as follows.

- Having become old before they could become rich, Millennial economies must now address the consequences of declining rates of human reproduction and increasing longevity.
- Health outcomes in Millennial economies improved substantially (in some cases vastly) over four decades (1980–2020). None achieved parity with advanced economies but some pioneered world-leading medical and clinical innovations (e.g. telemedicine in India).
- Qualitative and quantitative deficits in medical/nursing/technical skills in Millennial economies were exacerbated by significant net outmigration to advanced economies.
- Public health services in Millennial economies (as in many advanced economies) were and are generally (in some cases severely) underresourced and poorly coordinated.
- The COVID-19 pandemic was represented, interpreted and treated as a global event that affected almost every nation on earth. Some observers argued that it was a *syndemic*,[14] rooted in the conflation of pathology and socio-economic deprivation and, like all syndemics, disproportionately affected developing economies, poor communities in emerging economies and the poorest communities in advanced economies. The pandemic/syndemic posed massive threats to world health, exposed underlying weaknesses in the efficacy, capacity and coordination of public health systems (including the lack of vaccine solidarity), and was a prime example of a 'wicked problem'.[15] Other threats include climate-related, ecological and disease outbreaks that must be addressed through multinational initiatives.

Conclusions on education

Most Millennial economies have had limited success in their efforts to:

- develop sufficiently robust primary education systems to anchor secondary and tertiary education strategies;
- integrate primary and secondary curricula;
- provide sound foundations for continuous productivity-enhancing learning to meet changing demands for workplace skills;
- compensate for continuous outflows of professional and technical skills to advanced economies by developing policies and strategies to encourage eventual migrant repatriation.

14 The concept was originally developed by Singer to explain relationships between HIV/AIDS, substance abuse and violence in the United States in the 1990s. Singer (1999) later defined a syndemic as a co-occurring, synergistic pandemic that interacts with and exacerbates existing non-communicable diseases and social conditions creating 'a set of closely intertwined and mutually enhancing health problems that significantly affect the overall health of a population'.

15 A 'wicked problem' is a complex issue that defies definition and resists final solutions.

Conclusions on welfare and distribution

- Initial distributions of advantages and disadvantages between and within Millennial economies were accentuated through circular and cumulative causation processes.[16]
- Income poverty in Millennial economies was closely linked to deficits in education, health, housing and related services, social inclusion, mobility and climate protection and greater inequities and inequalities than in advanced economies.
- By c.2010, some Millennial economies had managed to narrow but not close gaps in domestic income distribution and access to education, healthcare and other determinants of human welfare that separated them from advanced economies. Many of those gaps re-opened in the next decade.

16 Models of circular and cumulative causation offer powerful explanations of why cities, regions, businesses and civic organisations retain and build on initial advantages and why erstwhile winners that fail to adapt to changing conditions may become losers. See Myrdal (1944, 1953, 1957), Kaldor (1966, 1967, 1972), Berger (2009).

PART 2: CONCEPTS AND DEFINITIONS

WHAT ARE EMERGING MARKETS/ECONOMIES?

Since they were 'invented' by van Agtmael[17] in 1981, 'emerging markets/economies' have been recognised by the World Bank, IMF, UNDP, OECD, other public institutions, private banks and corporations as cohorts of between 15 and 40 countries with diverse societies and polities and some similar economic attributes.[18] (See Box 4.)

From a 'high altitude' perspective, the characteristic, but unevenly distributed, features of emerging economies in 1980–2010 included the capacities to:

- manage demographic transitions;[19]
- address economic, social, cultural, technological and spatial change;
- handle moderate to strong (in some instances, very strong) economic growth driven by domestic and foreign fixed and financial investment;
- sustain economic and social development, measured, inter alia, by moderate to sharp reductions in infant mortality, illiteracy and communicable diseases;
- create distinctive but relatively stable polities with relatively effective governance and judicial and financial systems;
- produce relatively adequate and accessible primary education systems and partially adequate but less accessible secondary and tertiary education systems;
- generate sharply stratified (from excellent to very weak) healthcare and public health services
- meet variable success in adapting to the digital economy;
- develop sufficient influence to become significant players in regional and (in some cases) global geopolitics.

From the same perspective, their generic *challenges* included: unresolved problems of national, local and corporate governance (including systemic abuses of power and authority and leadership and management of uneven quality and competence); eroding competitive advantages in trade, manufacturing and other economic activity; unresolved problems of income, education and health poverty; social inequity; cumulative environmental damage, and other direct and indirect determinants of human development.

Box 4: What *is* an emerging market?

Income isn't the only characteristic of an emerging market. Most are economies with sustained strong growth and stability that can produce higher-value-added goods and are more like advanced economies not only when it comes to income, but also in participation in global trade and financial market integration.

Duttagupta R. and Pazarbasioglu C.

17 Antoine van Agtmael was then an economist at the International Finance Corporation.

18 Berger (2009).

19 See Gertz and Kharas (2019).

Duttagupta and Pazarbasioglu (2021), having recognised the absence of any 'official' definition of emerging markets/economies, focused on three factors – systemic presence, market access and income level – as a basis for identifying 20 'emerging market economies' (see Box 4). With the exceptions of Hungary and three hydrocarbon-dependent economies (Iran, Saudi Arabia and the United Arab Emirates), their 'set' corresponds to the 'EMS cohort' defined in the Preface.

WHAT IS THE MILLENNIAL COHORT?

The Millennial cohort is a construct of convenience. Unlike institutional constructs (e.g. G7, G20) it is neither physically, organisationally nor politically *real*. Yet its demographic, economic and geopolitical reach makes it an invaluable shorthand for analysing a set of economies with enough in common to hang together, and (as when unprecedented shocks opened gaps between them in 2010–20) enough differences to hang separately. The cohort, which included the BRICS economies, remained unchanged throughout the EMS series.

Box 5: Other cohorts
Dieppe (2020) identifies five cohorts in the global economy; three include developing economies. One cohort is 'aspirational' economies (Argentina, Brazil, Indonesia, Mexico, South Africa), which are also in the Millennial cohort. The 'top' cohort contains current advanced economies and 16 'emerging markets', some of which (China, India, Malaysia, Thailand) are also in the Millennial cohort. Most economies in the 'top' cohort also stand out in measures of economic complexity developed by Hidalgo and Hausmann (2009).

WHAT IS HUMAN WELFARE/WELL-BEING?

Drawing on the work of Chenery, Macekura, Myrdal, Seers, Stiglitz, Streeten and others, the EMS initially interpreted human welfare/well-being as a function of monetary and non-monetary determinants of the quality of personal and communal life.[20] It was later influenced by work on human capability, human development and multidimensional poverty by, among others, Alkire, Anand, Nussbaum, Sen and ul Haq,[21] who argued that: welfare policies and practices should focus less on aggregates and more on individuals and communities; that (implicitly) welfare has a 'human face'; that the multiple disadvantages of poverty are interconnected; and that single indicators, notably per capita GDP, cannot capture the characteristics of multidimensional poverty, well-being or empowerment and must be understood in the context of the human life course.

The EMS endorsed the premises of the Alkire–Foster Multi Poverty Index (MPI) that human welfare must be assessed with 'measures that complement indices of income poverty', address questions of '*who* is poor' and '*how* people are poor', and emphasise health and education as foundational elements of human well-being. While parts of the EMS's discourse on human welfare necessarily relied on averages, aggregates and approximations, it respected Sen's conclusion that human welfare/well-being is measured by individual capabilities to 'promote or achieve functionings they value'.[22]

20 See Chenery (1974), Macekura (2020), Myrdal (1944, 1955, 1957), Seers (1963), Stiglitz (2017), Streeten (1995).
21 See Alkire (2014), Anand (2000), Nussbaum (2011), Sen (1989) and ul Haq (1995).
22 See Sen (1989).

WHAT IS HUMAN CAPITAL?

Recognising the lack of consistent contrasts between personal and collective human capital accumulation/formation, the EMS saw distinctions between:

- *personal human capital accumulation/formation* as the process of developing personal knowledge, skills and capabilities that allows individuals to realise their productive and creative potential throughout the human life course; and
- *corporate human capital accumulation/formation* as the process of increasing the *aggregate* stock of human capital in an economy.

WHAT IS HUMAN DEVELOPMENT?

Launching the Human Capital Project in 2018, the World Bank emphasised that human capital development is a condition of sustained growth, global competitiveness and workforce adaptability, and that 'the cost of inaction on human capital development is going up'.[23]

These findings are consistent with the following EMS conclusions.

- Human development is the nexus of human welfare/well-being and human capital accumulation/formation.
- Whereas personal welfare/well-being and human capital/formation are about individual human development, aggregate *human capital accumulation/formation* is a collective and social process.
- Human development[24] is the enhancement of *individual* [25] welfare/well-being from:
  - wages, salaries, investments, inheritances and other incomes;
  - personal benefits associated with public/private/civic investments in healthcare, education and other human services;
  - the *accumulation* of personal human capital through education and experience.
- The enhancement of corporate/collective/national human capital is the sum of accumulated personal capital.

Between 2009 and 2018, the EMS examined issues of human development through the sectoral prisms of health and healthcare, maternal and child health and nutrition, environmental health, education; and the thematic and topical prisms of gender, urbanisation, youth, ageing and migration. Each symposium had roughly 50 international invitees from emerging and advanced economies with complementary backgrounds in the public/private business/civic sectors, multilateral organisations, foundations, universities and other research institutions.[26] They came (and returned) as the EMS built a reputation for tackling 'wicked problems', the calibre of its participants,[27] the candour of its conversations,[28] the relevance of its recommendations and its capacity

Box 6: GDP
GDP represents the total monetary (or market) value of finished goods and services produced in a nation state in a year. Although it was not designed to assess welfare or well-being, it is often used by policymakers and economists as an all-encompassing measure of national economic health and well-being. It is, in fact, a surrogate.

23 Gatti (2018).

24 Human development is invariably associated with increased welfare/well-being but can also be associated with decreased welfare/well-being and human disinvestment.

25 An individual may accumulate personal capital through the acquisition of knowledge and experience and through interventions in health, nutrition, education, housing, and social care that deliver personal benefits.

26 Invitations were *ad hominem* rather than institutional and were non-transferable.

27 Almost 250 scholars and practitioners with internationally acknowledged expertise (see List of participants).

28 Candour was promoted by excluding non-participants and audio-visual recordings.

to advance them.[29] As the symposium series unfolded, scholars and practitioners – with contrasting histories, perspectives, knowledge and experience – tested, reinforced, modified or discarded initial assumptions, introduced new ideas, challenged old ones, and reached the consensus agreements in which this monograph is anchored.[30]

29 Reports on each symposium included explicit recommendations.

30 As reflected in the reports on the EMS symposia, which are listed in the References.

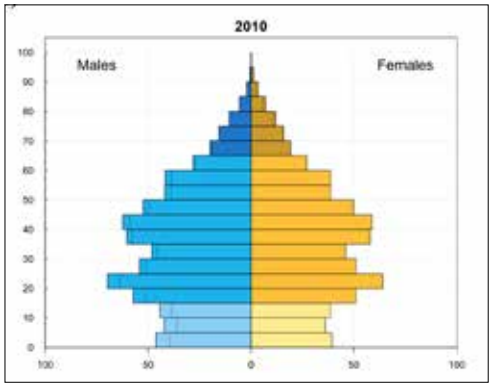
PART 3: THE NEXUS OF HUMAN DEVELOPMENT

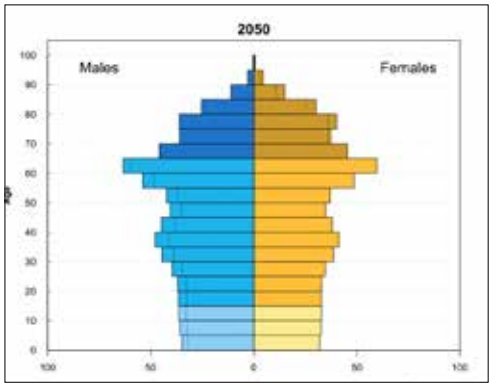
DEMOGRAPHICS

Between c.1980 and c.2020, Millennial economies, like many others, experienced extraordinary demographic changes as population growth decelerated, fertility and infant mortality declined, longevity increased, demographic transitions reflected sharp declines in total fertility ratios (TFRs), and national population profiles were transformed.[31] In 1950, almost all countries in the Millennial cohort had TFRs above five (most were above six). By 2015, only Jordan, Pakistan and the Philippines had rates above three. By 2020, fertility rates had fallen further and several countries, including China and Thailand and ten states in India, had TFRs below the net replacement rate of 2.1. The differences between China, Brazil, India, Russia and smaller countries increased as some populations continued to grow, others were stable, and a few shrank.

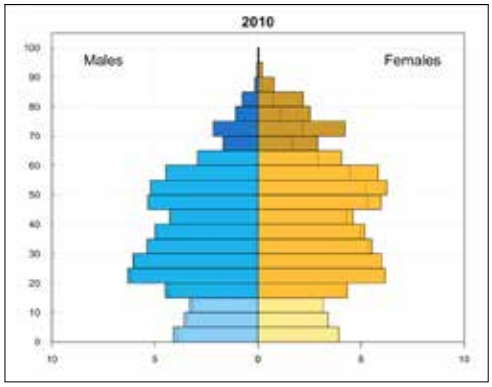
31 As recently as the 1960s, it was widely assumed that global population would increase much faster than has proved to be the case. For example, in 1968, Erlich argued that 'The world, especially the developing world, is rapidly running out of food. In fact, the battle to feed humanity is already lost, in the sense that we will not be able to prevent large-scale famines in the next decade or so.' (Ehrlich, 1968).

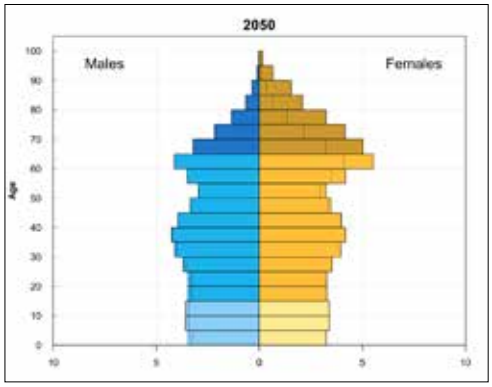
Figure 2: Age/gender profiles in Millennial economies



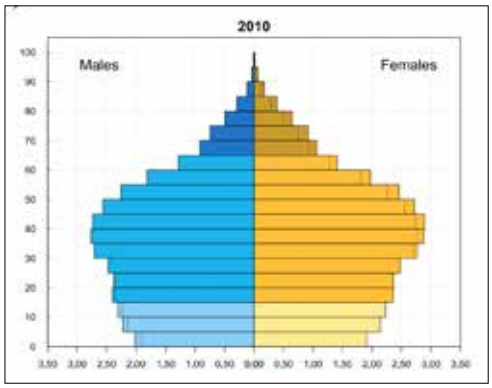


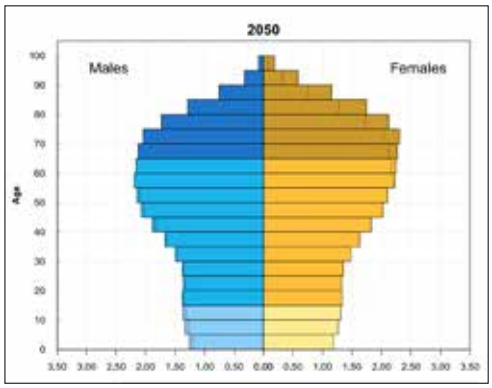
China: Ageing rapidly



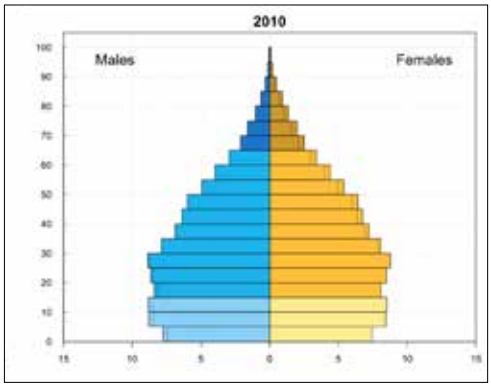


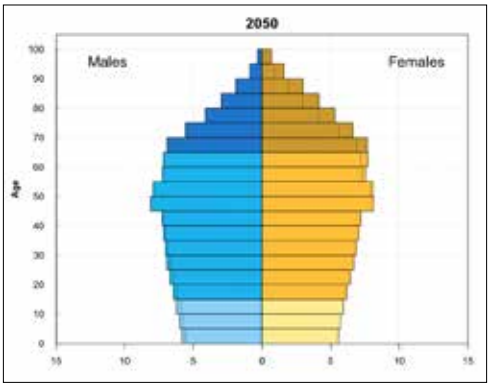
Russia: Ageing rapidly and unevenly



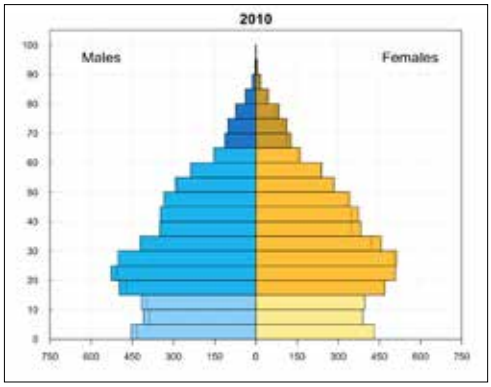


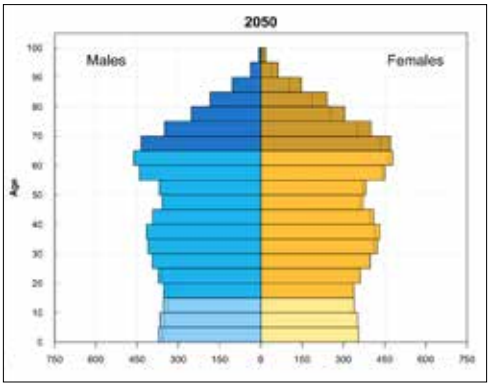
Thailand: Ageing rapidly with dense older population



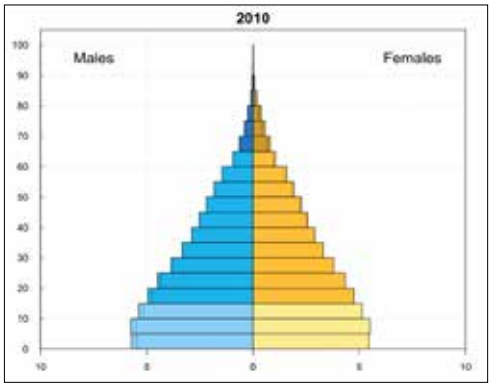


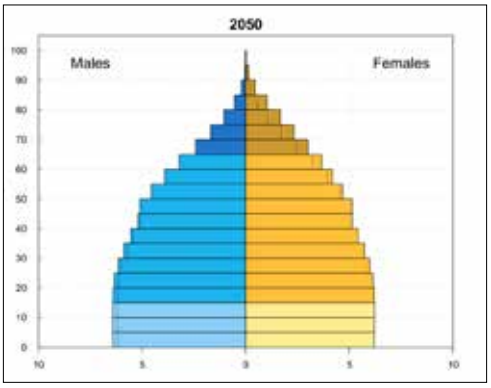
Brazil: Slower, more even ageing





Tunisia: Ageing, but with uneven cohorts





The Philippines: Very slow ageing

Population by age groups and sex (absolute numbers). Population in millions.
In EMS (2015). Source: United Nations World Population Prospects: 2012 Revision.

Since the 1950s, changes in fertility and in longevity have generated very large absolute increases in populations aged 65 and over in Millennial economies. Figure 2 shows comparative age and gender profiles for three economies where ageing has been rapid (China, Russia, Thailand) and three where it has been slower (Brazil, Tunisia, the Philippines).

There were also significant contrasts in age profiles (and in some cases, gender profiles). For example, in 2020, life expectancy was 73.5 in China and 64.4 in India; infant mortality was 17/1,000 in China versus 50/1,000 in India; maternal mortality was 38/100,000 in China versus 230/100,000 in India; mean years of schooling were 7.5 in China and 4.4 in India; and adult literacy was 94% in China compared with 74% in India. Comparisons between other Millennial economies provide further evidence of demographic contrasts grounded in economic, financial and cultural differences that were particularly significant for both younger and older age cohorts.

Before 2020, the population of young people had already peaked in many Millennial economies and, with notable exceptions (e.g. Pakistan, Jordan, Egypt), opportunities for demographic dividends had passed – even where population growth was associated with improved education. While young people accounted for declining shares of 'classically defined' working age populations, the economic and social significance of labour force growth depended on physical and cognitive capacity, health, education and labour demand.

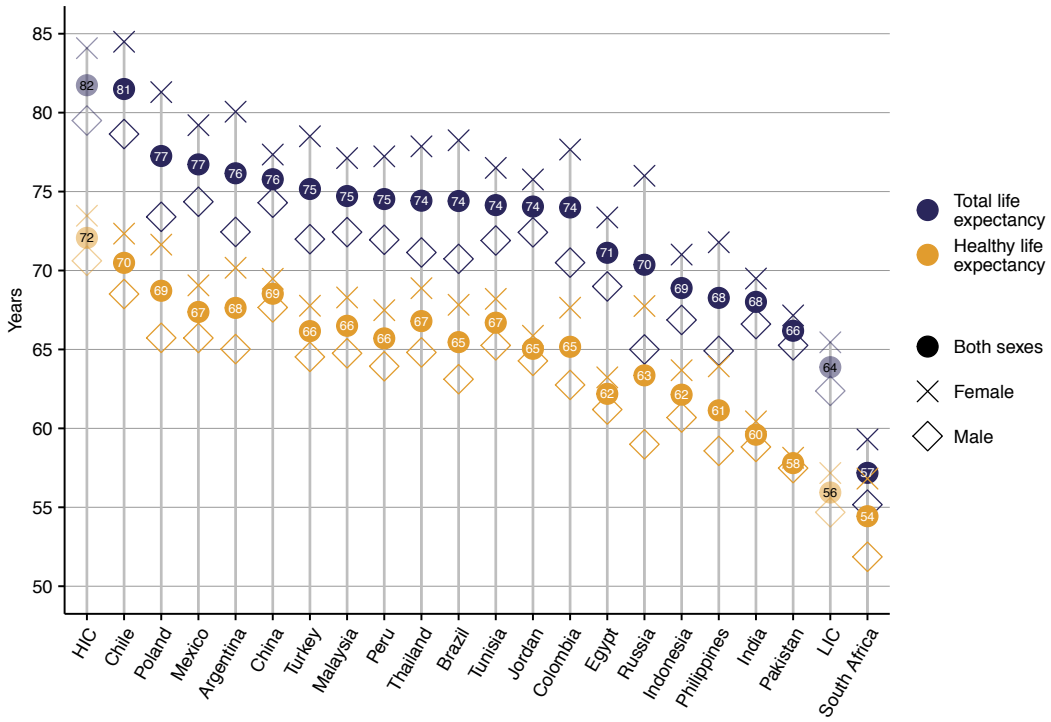


Figure 3: Total life expectancy and healthy life expectancy at birth
Total life expectancy data from 2014; healthy life expectancy data from 2015. HIC: high-income countries (sample), LIC: low-income countries (sample).
Source: EMS (2017), Analytical Framework

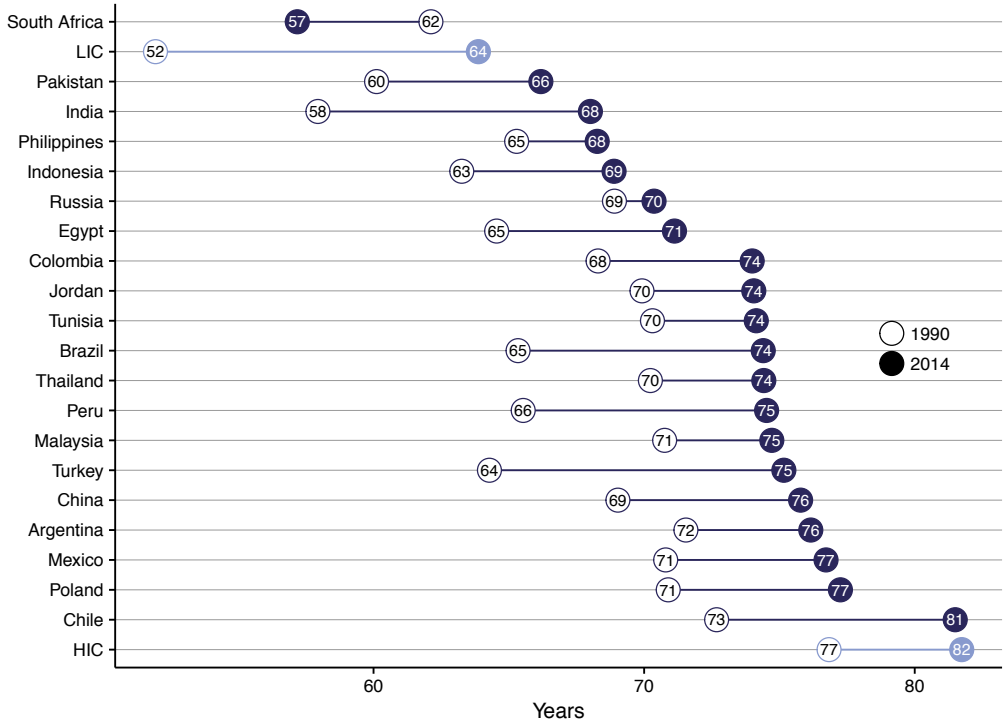


Figure 4: Life expectancy at birth, 1990 and 2014
HIC: high-income countries (sample), LIC: low-income countries (sample).
Source: EMS (2017), Analytical Framework

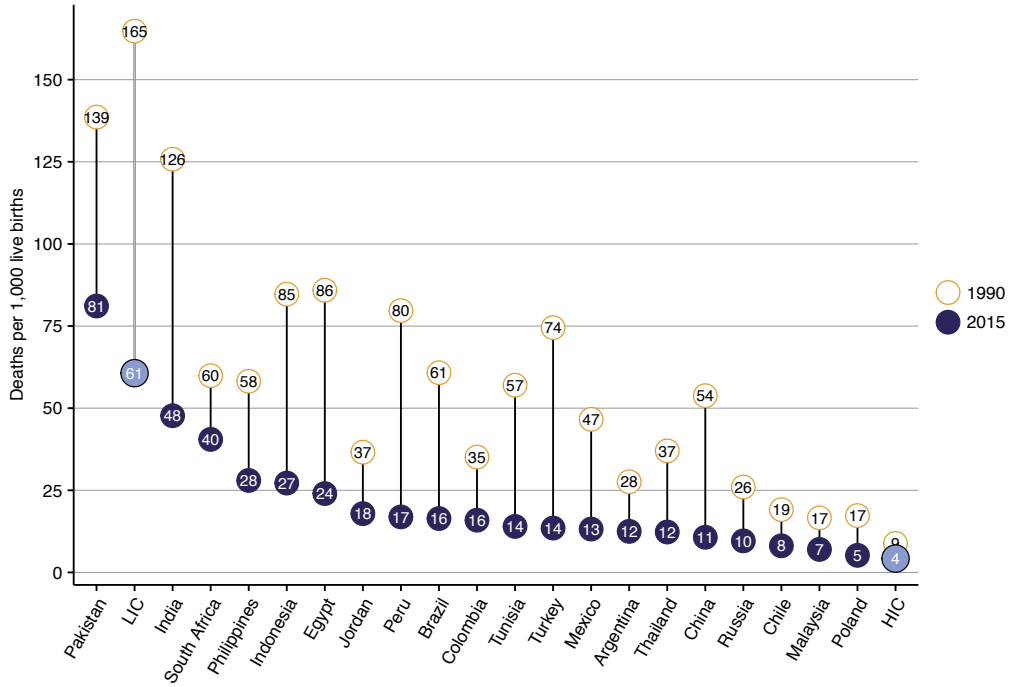


Figure 5: Mortality ratio for children under 5, 1990 and 2015
Deaths per 1,000 live births. HIC: high-income countries (sample), LIC: low-income countries (sample).
Source: EMS (2017), Analytical Framework

As the concept of youth exceeded conventional limits, Millennial economies stayed younger longer; the period between childhood and adulthood lengthened; puberty began earlier; key social transitions to adulthood were postponed (although in general, the timing of menarche levelled off at 12–15 years); other transitions were delayed until well after biological maturity; contraception became increasingly available; young people spent more years in education and training; and as their expectations changed, adult roles and responsibilities (such as family formation and employment) were deferred.

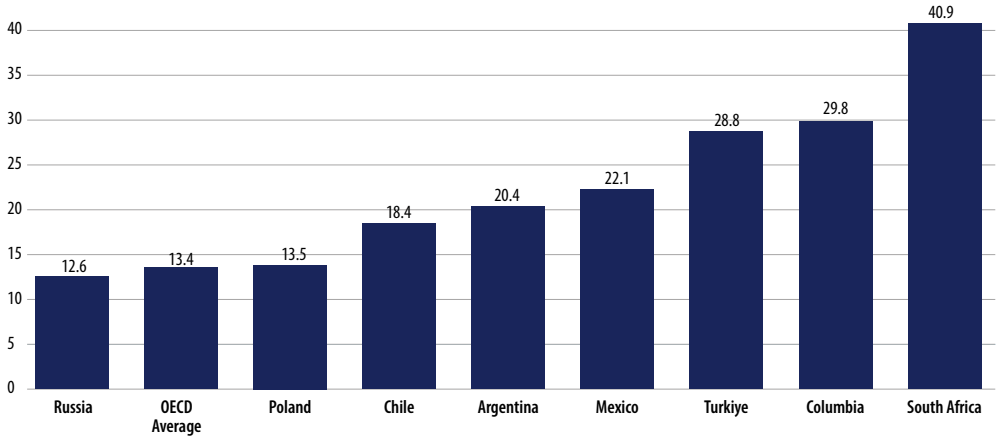


Figure 6: NEET populations in seven Millennial economies and OECD average
Source: OECD (2022)

For many teenagers and young adults in Millennial economies, the outstanding issues were not about choices of careers, occupations or jobs but about unrewarding and largely unrewarded survival in isolating, alien, mostly urban environments where very large numbers of young people were not in education, employment or training (NEET).

Figure 6 shows that in some Millennial economies – notably South Africa – NEET populations account for between a quarter and a half of the cohort population.[32] This finding demands the attention of economic and social policymakers and, not less, political leaders, because the fact that large percentages of young populations are essentially unproductive is a waste of economic resources, an obstacle to social cohesion and a potential political volcano.

It is often assumed NEET populations in Millennial and other economies are synonymous with disadvantaged backgrounds, minimal education, poor nutrition, incapacities for cognitive or physical work and, as a result, economic inactivity. However, there is evidence that: (i) some NEET populations in Millennial economies (e.g. China) are aspirational;[33] (ii) those economies have failed to educate, nurture or employ them productively; (iii) the realities of NEET life may be hard to disguise; (iv) NEET numbers were exacerbated by the recession and accentuated by the pandemic; and (v) even the most disadvantaged youth in Millennial economies could benefit from pioneering targeted interventions (e.g. special education and mentoring programmes in Brazil and India). A win–win initiative that could improve NEET life and national resilience is outlined in Part 5.

32 Elder (2015).
33 Jacobs (2010).

Until the late 20th century, population ageing (the ratio of old to young people) was not a major policy issue in Millennial economies. But as median ages rose, it became a growing challenge. Whereas Western Europe transitioned from being relatively young to relatively old in 150 years, many Millennial economies in Asia and Latin America will complete similar transitions in the 2030s. Starting in the 1950s, changes in fertility and longevity generated very large absolute increases in populations aged 65 and over in Millennial economies.The trend accelerated after 1970, quickened through the 1980s and 90s, and will continue through 2050 and beyond. By that time, most Millennial economies will have large and growing elderly populations and some (e.g. Poland, Thailand, China) will have to cope with shrinking labour forces and declining capabilities, unless they recalibrate secondary and tertiary education to match changing labour force demands and/or induce older people to postpone retirement or not to retire at all.

There were very large changes in Old Age Dependency Ratios (OADRs) in Millennial economies. In 2018, OADRs were under 0.17 – with the exceptions of Argentina and Russia (both 0.20) and Poland (0.24). Those changes contrasted with OADRs of 0.39 in Japan; 0.30–0.35 in Germany, Italy, Sweden and Greece; 0.10–0.15 (in ascending order) in South Africa, Egypt, Colombia, Peru, Mexico, Tunisia, Turkey, Brazil and China; and between 0.07 and below 0.10 (in ascending order) in Jordan, the Philippines, Pakistan, Indonesia, Malaysia and India.

By 2050, OADRs in Millennial economies in Latin America are expected to rise to between 0.39 (Peru) and 0.56 (Chile). In the Middle East and North Africa, OADRs in Turkey and Tunisia are expected to rise to 0.45 and 0.53 respectively, while increases of more than 150% are projected in Egypt and Jordan. Elsewhere, Russia and Poland are likely to rise to 0.40 and 0.62; South Africa's OADR is expected to double. In Asia, rapid increases in OADRs are expected in Malaysia (0.37) China (0.54) and Thailand (0.65), which will be similar to OADRs in Germany and Singapore. Forecasts for other Asian countries are between 0.20 and 0.29.

The shortcomings of the OADR are more pertinent in emerging than in advanced economies. Many older people in Millennial economies (particularly in Asia) lack pension income either because structured (mandatory or optional) systems do not exist or because they work in informal labour markets, do not pay taxes and have no pension rights. However, some Millennial economies (e.g. Chile, China, India) have begun to develop policies to address the financial needs of low-income workers in old age.

The Prospective Old Age Dependency Ratio (POADR), which defines prospective age as a dynamic variable that varies within age cohorts, and between Millennial and other economies, is a more suitable tool for 21st-century policymakers than the OADR. It is grounded in the here and now, is adaptable to future demographic and economic changes, is relatively equitable and – because it is also flexible – will inform rational discourse on ageing for the indefinite future. It is not perfect, mainly because it ignores differential mortality and ill health, and is very weak at determining denominators, but it is an improvement over arbitrary definitions grounded in 19th-century realities.

Box 7: Old Age Dependency Ratios

The OADR is an established metric of dependency with two major flaws. First, it assumes a fixed threshold for 'old age', notwithstanding the history and promise of changing life expectancies. Second, the concept of *chronological age* is less valuable than that of *prospective age*, (i.e. years left versus years lived).

If the age of dependency is defined as that beyond which, on average, the physical and cognitive effects of ageing hinder, and ultimately impede, the ability to work and/or lead an independent life on the same terms as the rest of the population, a plausible interpretation is that, with variations within and between Millennial economies, the age of dependency starts about 15 years below average life expectancy.

Gender profiles

Gender *inequality* in Millennial economies (as in other economies) is anchored in the belief that females are innately or circumstantially inferior to males; in discriminatory male behaviour; and (to some degree) in tacit female acceptance of that behaviour. It is by no means unique to emerging economies but is a larger and more pernicious issue there than anywhere else in the modern world. First, because public policies in most emerging economies have failed to mitigate the negative distributive consequences of rapid economic growth. Second, because the informal sector – in which large numbers of economically active women earn casual and irregular wages from unreliable and often transitory employment – continue to play major roles in these economies. Third, because traditional family structures and support systems have been disrupted by massive urbanisation.

Forms of gender discrimination vary from extreme manifestations (e.g. bride burning, female infanticide) to passive toleration of systems that deny women equal participation in reproductive decisions, equal access to education and employment, equal pay for equal work, equal rights before the law and equal political agency. It diminishes the capacity of mothers to promote the rights of daughters; makes women vulnerable to sexual slavery, trafficking and forced marriage; stunts the capacity of boys to become caring fathers; diminishes the quality of women's lives; and limits their opportunities to lead fulfilling lives in the full use of their powers.

Gender *equality* is about rights, opportunities, fair treatment and obligations, equal chances of survival for male and female foetuses and equal access to reproductive healthcare, education, credit, capital, financial autonomy, professions and occupations. In most Millennial economies, women are more likely than men to be poor and illiterate, and far more likely to be victims of violence. Conversely, women are less likely than men to have access to medical care, education, training, employment; credit, capital and property ownership; or toachieve positions of economic, social or political leadership.

Working parents throughout the world face fundamentally similar challenges in developing and sustaining careers and caring for children (and often ageing parents as well). In emerging as in advanced economies, difficulties in managing the conflicting demands of work and family are reflected in staff turnover, absenteeism and productivity. There are, however, significant contrasts between most advanced economies and most emerging economies. Whereas many high-income parents in emerging economies have ample child and elder care and household support, poor families, particularly single mothers who cannot afford childcare, are often driven to leave children to their own devices.

Extremes of wealth and poverty mean the well-off in Millennial economies generally live better than the well-off in advanced economies. They also mean the badly-off in emerging economies are generally much worse off than the badly-off in advanced economies. Government child and elder care programmes, affordable commercial childcare and elder care services and on-site childcare facilities like those that help working parents bridge the gaps between home and work in advanced economies, are generally less available in Millennial economies. And parental leave arrangements (which vary widely between advanced economies) vary much more within and between emerging economies.

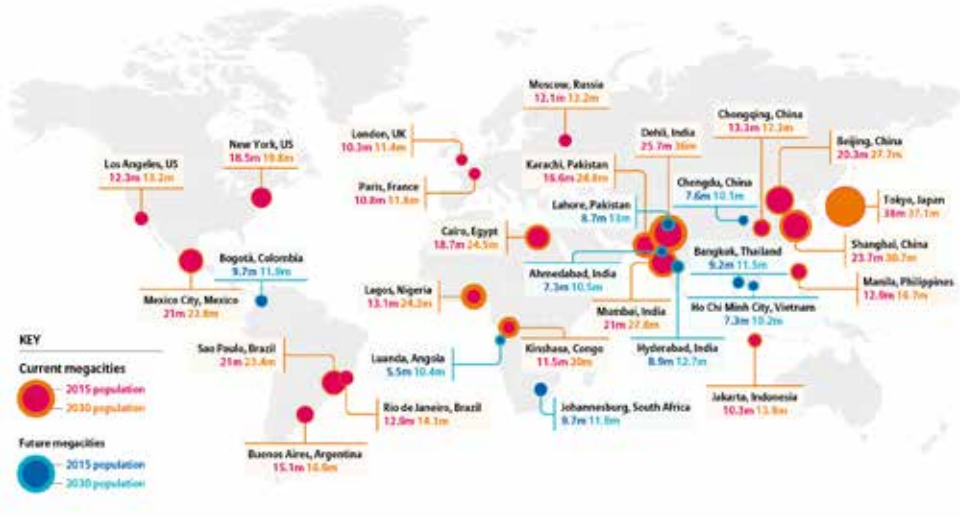
The speed of economic, social, cultural and demographic change (less so political change) in Millennial economies has been – and in most cases, is – faster than at any other time in their histories. Fertility rates (e.g. in Mexico) accelerated in the last quarter of the 20th century but declined precipitately by 2000. There were similar patterns in infant mortality and deaths from infectious diseases, and corresponding contrasts in, among other things, age profiles, dependency ratios, longevity and demand for healthcare and education.

On the move

Urbanisation

By 2020, it was evident that, whereas it had taken 150 years for European towns and cities to house 50% of national populations, many Millennial economies had achieved that in 50 years. It was also evident that: (i) without countervailing action, the trend would continue; (ii) urbanisation in Millennial economies had shifted the geographic balance of the global economy east and south as long-established cities became megacities; (iii) Asian cities (of which many people in Europe and the United States had never heard) became economic powerhouses; and (iv) Millennial economies had surprised themselves, and the world, by managing urban growth better than expected.

Urbanisation also led to spatial concentration of human and economic assets in Millennial economies. Whereas some (e.g. Brazil, Argentina, Chile) were more than 80% urbanised, others (e.g. India, Pakistan, Thailand) were half that. Urbanisation in most large Millennial economies (e.g. Brazil, China, India, Mexico, Russia) and some smaller ones (e.g. Colombia), as in large advanced economies (e.g. the United States, Canada, Australia), was also distinguished by relatively 'balanced' urban systems with dynamic secondary and third-tier cities. In contrast, most small emerging economies developed 'primate' urban systems (dominated by one city). Grappling with the consequences of explosive urbanisation, many governments in Millennial economies (and in some advanced economies) floundered in efforts to de-concentrate by promoting growth in secondary cities.[34]



Source: World Urbanization Prospects: The 2014 Revision

Figure 7: World megacities, 2015-2030. Allianz (2014)

34 Sometimes favouring secondary cities in the often forlorn hope of redressing regional economic imbalances by ignoring initial advantage and cumulative circular causation (see Myrdal 1957) and choosing 'worst first' priorities.

Although circumstances and conditions varied enormously, sharp socioeconomic contrasts in most Millennial economies were reflected in spatial segmentation between wealthy and and middle-income areas and low-income *barrios*, *favelas*, townships, slums and other areas with primitive housing, pirated infrastructure (if any), and few services (if any). There were similar contrasts in welfare and well-being that reflected income disparities, structural immobility and the spatial distribution of education, health, public services and transport links, with larger variations between urban and rural areas. As in other economies, welfare, incomes and services generally diminished from cores to peripheries.

The geographic scale of change outmatched anything the world had previously seen. Because urbanisation was compressed, accelerated and magnified by increasingly productive technologies, massive internal migration and higher net reproduction rates, many cities in Millennial economies wrote new chapters in urban history as they grew at breathless speeds to unprecedented sizes. Beijing, Buenos Aires, Cairo, Delhi, Guangzhou, Istanbul, Karachi, Kolkata, Manila, Mexico City, Moscow, Mumbai, Rio de Janeiro, Sao Paulo, Shanghai and Shenzhen became megacities with more than 10 million inhabitants. By 2015, Millennial economies had nine of the world's 12 cities with populations over 20 million. And whereas in 1980 they had accounted for a third of global real GDP (purchasing power parity, PPP), by 2018 their collective share was more than half and China was the world's second largest economy.

Migration

Debates about migration from, to and within Millennial economies are often muddled by attempts to oversimplify complex phenomena, conflate voluntary and involuntary migration, draw artificial distinctions between internal and external migration, and overlook the fact that urbanisation is driven by net urban population increase as well as internal movement.

Apart from involuntary migration caused by conflict, political repression – or other forces that create internal and external refugees in emerging economies – voluntary migration is driven by actual and perceived income and welfare differentials, economic, social, cultural and/or environmental pressures, and real, mythical or fictitious inducements.[35] Linear, stepped, circular, temporary and permanent migrations, influenced or driven by economic, social and cultural opportunities, have been dominant sources of urban population growth and selective rural depopulation in Millennial economies.[36] Cumulative and circular causation,[37] the neglect of rural services and the economies and diseconomies of agglomeration have generated growing differences in urban–rural welfare. Although cross-border movements hog the limelight and generate important remittances, Millennial economies have been transformed by internal rather than international migration.

That said, all 20 Millennial economies were net exporters of migrants in 2010–20, collectively accounting for about 84 million of the world's 258 million international migrants. Four – India (17 million), Mexico (13 million), Russia (11 million) and China (10 million) – together accounted for a fifth of all international migrants worldwide, although there were massive contrasts in numbers, directions of travel, spatial concentration, duration, and transitional and ultimate destinations.

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35 See Jacobs (2010), King et al. (2008).

36 King et al. (2008).

37 Models of circular and cumulative causation offer powerful explanations of why cities, regions, businesses and civic organisations retain and build on initial advantages and why erstwhile winners that fail to adapt to changing conditions may become losers. See Myrdal (1944, 1953, 1957), Kaldor (1966, 1967, 1972), Berger (2009).

Migrants who leave their homes in Millennial economies because their lives and livelihoods are threatened by environmental changes, are neither domestic nor international refugees. Free to move but not to stay, migrants fleeing toxic air in cities across China and India, desertification in central and western China, floods in coastal regions of south India, the consequences of drought in Cape Town and Santiago de Chile, insufferable heat in south and Southeast Asia and the prospects of sea level changes and salt-polluted water resources in Jakarta, Dhaka, Shanghai and Kolkata, leave because they have no choice.

The typical cross-border migrant was young, male, unskilled and unattached. While, in 2010–20, migrants were younger than the populations of emerging economies as a whole, the proportion of female to male migrants rose to near parity, about a third were tertiary educated; significant proportions were married or attached; and they were generally healthier than age-comparable populations in the countries they left or went to. Most emerging economy migrants left their home countries because they perceived better life chances elsewhere. Subject to the constraints of bounded rationality (imperfect information from partially trusted sources and a welter of facts, myths and contradictions, cognitive capacity and time limits), most migrants moved when they chose and had at least some idea where they were going and what awaited them.

As increasing numbers of longer-term migrants have reversed international flows, some commentators have argued that circular migration from and to emerging (and developing) economies could be a model for the future. Critics have countered that proponents gloss over the shortcomings of inadequate and inaccurate data; fail to appreciate the social implications of circular migration; have not absorbed the lessons of less-than-successful guest-worker programmes in the mid-20th century;[38] embrace flexible but asymmetrical labour markets; and mistakenly see circular migration as a panacea for migration-related problems.

Most Millennial economies were slow to create migration policies, incorporate migration in economic and social strategies, accept responsibility for migrant-nationals abroad, or establish bilateral arrangements to facilitate successful migration experiences and the eventual return of migrant-citizens to birth countries. Globalisation was associated with increasing flows of international migrants but *not* with more effective or equitable governance.

38 Guest-worker programmes were extensively used in many European countries in the 1950s and 60s. They ended when unemployment rose in the 1970s. But demands to resurrect these schemes often return when labour markets tighten and are still extensively used in, among other places, the Gulf, Singapore, Canada and Australia. (Manning, 2021).

Box 8: The first thousand days

Nutrition and care in the 1,000 days between a child's conception and second birthday are crucial because they determine the chances of survival, prospects for lifetime health and development, and long-term ability to grow, learn and contribute to economic prosperity, social cohesion and political stability.

It is far more effective to nurture the following than to depend on replacement therapy after deficits are detected: (i) cognitive development through improved nutrition in adolescent girls and young women before, during and after pregnancy; (ii) exclusive breastfeeding during the first six months of life, complementing breastmilk with nutritious, safe and appropriate food; (iii) timely uptake of PMTCT services by HIV-positive pregnant women and their babies; screening for TB and retention in care; (iv) improved hygiene and sanitation; and (v) regularly monitoring growth and development by preventing nutritional deficits.

Breastfeeding is critically important. As a baby's first vaccine, it is the first and best protection against illness, disease and death. Promotion, support and protection of exclusive breastfeeding until six months – including for HIV-positive mothers who are on treatment and virally suppressed – are high-impact public health interventions although it is a far from universal practice in most emerging economies.

LIFE CYCLE DEVELOPMENT

The fundamental determinants of human development are health and education.[39] The health and education sectors are therefore critical for Millennial economy governments seeking measurable improvements in human welfare/well-being and human capital accumulation/formation.

Other determinants of welfare/well-being[40] (i.e. personal, material and legal security; access to social justice; political liberty; freedom from hunger and ignorance; and rights of assembly, speech and movement) are constitutional. Irrespective of how they are interpreted, the constitutions of *all* Millennial (and most advanced, emerging and developing economies) include statements of rights, freedoms and liberties.[41]

As Seers pointed out 60 years ago, many development theories are grounded in the distinctive yet peculiar experiences of European and North American economies and societies in the 19th and early 20th centuries.[42] That may also be true of theories that embrace relationships between chronological age, life events, social change and human agency amid checks, balances, opportunities and constraints; life-course theories played central roles in the conceptual evolution of the EMS.

Baltes and other scholars/practitioners have argued that life-course theories focus unduly on childhood/youth and old age.[43] The EMS stuck with that tradition. Not because adulthood yields few if any developmental changes, but because early life is foundational ('The child is the father of the man)'[44] and longevity will be a major demographic force in Millennial economies in the 21st century. We therefore distinguish between *generational* factors (health and education) that affect the welfare and well-being of children, youth and/or older people, and *intergenerational* (environmental) factors that affect whole populations.

Generational factors: health

Child health

Since the early 1980s, maternal and child health and nutrition in most Millennial economies have been significantly improved by rising incomes derived from economic growth, new government policies and civil society interventions. Yet, though the incidence of undernutrition and other indicators of child poverty was higher in developing than in Millennial economies, its scale was larger in Millennial economies (particularly China and India) than anywhere else in the world.

Child health in social groups, geographic regions, and urban and rural populations in Millennial economies in the 2010s reflected contrasting economic conditions,

39 The World Bank's Human Capital Project, initiated in October 2019, is a global effort to accelerate investment in people ithat envisions a world where all children reach their full potential (see Gatti et al., 2018).

40 And (but less directly) capital accumulation/formation.

41 For example, Article 19 of the Indian constitution defines six freedoms for citizens of India: the freedom of speech and expression; freedom of assembly without arms; freedom to form associations and unions; freedom of movement throughout the territory of India; freedom to move to and reside in a place of choice; and the freedom to practise any profession.

42 Seers (1963).

43 Baltes (1987) argued that adulthood was also a developmental phase

44 Wordsworth (1802).

social priorities and healthcare options. In most of these economies, children of urban elites could access excellent healthcare; middle-class children benefited from improving living and working conditions and increasingly better access to insured healthcare; and many children in poor urban families suffered from unhealthy environments and depended on healthcare of variable quality provided by clinics and public hospitals. Access to and the quality of healthcare for children in poor rural families in emerging economies often resembled that in the world's poorest economies.

Extensive research[45] has shown that:

- poor maternal nutrition in the 1,000 days between conception and age two adversely affects foetal and infant development, infant cognition, physical development, educability and adult employability (Box 8);
- life-course outcomes in Millennial economies were shaped by the health and nutrition of mothers and pre-natal inequalities and inequities;
- children of mothers who themselves had poor starts in life had greater risks of low birth weight, stunting, early-onset diabetes and poor cognition.

The Oxford-led INTERGROWTH-21st project (see Box 9) covered eight countries, including three Millennial economies (Brazil, China, India). Challenging the outcomes of previous research, the study found that children born to healthy mothers (in Millennial as in other economies) would grow at similar rates *regardless of race and ethnicity*. It also challenged ungrounded assumptions, attitudes and behaviours about racial and ethnic differences and had fundamental implications for the quality of perinatal research and newborn care throughout the world.

Although the conclusions of INTERGROWTH-21st did not invalidate past or current metrics of physical or cognitive development (e.g. height, weight, intelligence), they meant that:

- foetal and infant health outcomes are primarily attributable to the social, economic, nutritional and physical environments of mothers before, during and after pregnancy;
- if all mothers enjoyed optimised health and nutrition throughout their lives and if their children were born in optimised conditions, *all children, everywhere, would have similar life chances*;
- optimised conditions for foetal, infant and child development in Millennial economies, would produce changes in male and female height, weight, growth and cognitive potential *within a single generation*.

Young health

It is commonly supposed that young people are generally healthier than others and carry relatively light disease burdens. Closer inspection reveals that (with sharp inter-country differences) more than a third of the adult disease burden and almost 60% of premature deaths in Millennial economies are associated with behaviours that begin in adolescence.

The major determinants of the physical and emotional well-being of adolescents and young people in Millennial economies have less to do with health and healthcare policies and practices than with social norms, standards, customs, fashions and rituals, and factors that lie outside the purviews or jurisdictions of health sectors.

Box 9: INTERGROWTH-21st

The International Fetal and Newborn Growth Consortium for the 21st Century (INTERGROWTH-21st) is a global, multidisciplinary network of more than 300 researchers and clinicians from 27 institutions in 18 countries, coordinated from the University of Oxford. It was launched in 2008 by José Villar and Stephen Kennedy to challenge the assumption that babies have inherently differently growth around the world. The project is the largest, population-based, prospective study of foetal and newborn growth and development ever conducted, involving nearly 60,000 mothers and babies. The INTERGROWTH-21st project is based at the Oxford Maternal & Perinatal Health Institute (OMPHI), Green Templeton College, University of Oxford and is supported by a generous grant from the Bill & Melinda Gates Foundation.

45 See UNICEF (2017).

In many ways, physical and neurodevelopmental changes in Millennial economies directly affect the burden of disease in childhood–adulthood transitions. They also affect risk perceptions and decisions and communications about risky behaviours.

The ways young people in Millennial economies think about the present and future are in some ways similar, in others, different, to the thoughts of peers in advanced economies. Pubertal changes affect the incidence and clinical manifestations of polycystic ovarian syndrome, eating disorders, depression, epilepsy, Type 1 diabetes and other autoimmune diseases. Chronic conditions may have reciprocal effects on adolescent development processes and causes of and responses to adolescent disabilities. Social settings that are far more differentiated in Millennial than in advanced economies may contribute to risks of substance abuse, self-harm and disruptive behaviour.

Six categories of morbidity among young people in Millennial economies – early pregnancy, infectious diseases, injuries, addictions, mental illness and malnutrition – are also associated with mortality. Many can be mortal in youth, although in such morbidities as obesity-related Type 2 diabetes, death often occurs later.

If the health of young people lacked distinguishing features; if adolescents and young adults could somehow shake off the enduring impact of the 1,000 days between conception and age two; if they could restart life at the age of ten; if pre-frontal lobes and limbic zones developed synchronously; if puberty could be magically washed away; and if adults would stop saying they know exactly what it's like (conveniently forgetting they grew up in different times), childhood–adulthood transitions would not be painless but young people might emerge with relatively unscathed minds and bodies. The journey is difficult for even the most advantaged young people in the most advantaged countries. For many young people in Millennial economies, particularly the most disadvantaged, it is invariably very much harder.

Few Millennial economies have focused attention and resources on preventive or curative care for the physical health of young people. Fewer have risen to the challenges of responding to underlying and presenting problems of mental and emotional illness. Fewer still have begun to consider whole-system approaches based on life-course perspectives on the social and environmental determinants of health, and integrated care spanning physical and mental illnesses. Because the wealth of nations reflects the health of nations, the health of young people is a critical determinant of the educability, productivity, creativity, adaptability and resilience of Millennial economy populations. Yet few Millennial economies have devoted much attention to morbidity and mortality in the 10–24 age group; established operational links between young lifestyle choices, adult health and longevity; or developed strategies to address youth health and healthcare. Some Millennial economies have made a dent in these challenges. None has identified it as a distinctive field.[46]

46 Although the situation in some advanced economies is better, there are also glaring deficiencies, in terms of specialised facilities, medical and nursing skills and applied research. See EMS (2016).

Elder health

The recent demographic, economic and urban histories of most Millennial economies are, for the most part, stories of compression and accelerated change. There are important differences but almost all Millennial economies need to: rethink attitudes to, and policies on, population ageing; recognise that older populations are far from homogenous; understand that there are distinctive problems and opportunities for the 'younger old' and 'older old'; and accept that ageing populations offer both challenges and possibilities.

Given dramatic variations in health, independence and economic and social activity among older people of the same age, chronological age does not define ageing. As Grimley Evans pointed out in 2016, ageing is best defined as 'diminishing adaptability to challenges from external or internal environments as reactions become slower, less sensitive, less accurate and less well sustained'. There is, he said, 'more to ageing than old age'.[47]

Individuals age at different rates as a function of the patterns and events of their lives, health, work-related wear and tear on minds and bodies, education, lifestyle choices, physical, cultural, social and emotional environments, and heritable and other attributes. As a result, they reach old age with variable levels of physical and mental health, energy, ambitions and prospects. The challenges hit older people (some hard, others gently) in different combinations at different chronological ages, although many people die without experiencing them.

These contrasts, originally identified in advanced economies, have increasingly important implications for ageing-related policies and strategies in Millennial economies. That means efforts to stereotype the characteristics of older people are often misleading, because biological age cohorts cannot be matched to chronological cohorts. It also means that it is helpful to focus on the conditions of healthy, productive, satisfying and active ageing processes (ideally ending in peaceful death).

Most older people in Millennial economies experience significantly poorer health and healthcare than their counterparts in advanced economies: chronic diseases set in earlier; infectious diseases hit harder; they have less access to healthcare; they die sooner. And as older populations ride rollercoasters of health and sickness and as population pyramids get increasingly top-heavy, these economies will discover that elder health and welfare will be increasingly 'wicked problems' for policymakers.

Most healthcare systems in Millennial economies offer fragmented elder healthcare with high transaction costs, perverse payment incentives, inadequate emphasis on prevention, inefficient use of high order skills, insufficient use of low- and middle-order skills, and inappropriate training for medical practitioners. These conditions give rise to far from trivial challenges associated with infectious and chronic diseases, dementia, emotional disorders, disability, medical education and attitudes towards the relative priority of healthcare for older people.

Most human deaths occur in old age and are most often caused by disease. In advanced economies, chronic diseases have displaced infectious diseases as the leading causes of death. In Millennial economies, where epidemiological and demographic transitions started later, deaths are increasingly attributable to chronic and degenerative diseases,

47 See EMS (2016).

but infectious diseases will continue to kill for as long as many people remain poor, badly housed, badly fed and badly protected from environmental hazards.

Most Millennial economies have limited capacities to develop 'womb to tomb' perspectives on human health; promote adult lifestyles that forestall health problems; create age-adapted environments; or coordinate plans and policies across jurisdictional boundaries. They are also challenged by the facts that most healthcare professionals have little or no training in elder health; that specialist geriatric services (e.g. dementia, psychiatric disorders and disabilities) are poorly coordinated with other aspects of health and healthcare; that many policies that affect elder health lie outside the purview of health policies; and that older people are particularly vulnerable to climate change. While some Millennial economies have developed innovative approaches (such as nurse-led clinics for asthma, diabetes and cardiovascular disease), there is a widespread need for better understanding of the aetiology of disease and continuity and coordination of care in resource-constrained environments.

Most advanced economies enable impaired, disabled and handicapped individuals of all ages to participate in social and economic activities on modified if not equal terms. But, consistent with the fact that ethnic, gender, racial, financial, economic, cultural, social and political inequalities are widely tolerated, Millennial economies have made less progress and, as their populations grow, physical and cognitive impairments and disabilities in older populations will grow too.

Generational factors: education

All advanced economies (including the post-war generation of emerging economies), recognise that the welfare, well-being, health and education of children and young people underpin human capital formation. Since c.2000, Millennial economies (particularly in Asia) that are trying to follow suit, have invested heavily in primary and – generally to a lesser extent – secondary education, substantially reducing numbers and proportions of children with no schooling.[48] As with health and healthcare in the 2010s, there were contrasts in access and attainment between the income groups. Some Millennial economies (e.g. Argentina, Brazil) developed policies to reduce educational inequalities including initiatives to link education, health and nutrition programmes. Others (e.g. India, Indonesia) increased access to education and gross enrolment rates in secondary as well as primary education and expected to achieve universal participation from 9 to 12 years in 2019, while Colombia aimed at compulsory upper secondary education by 2030.

Despite these advances in education in Millennial economies, young people from poorer families were severely underrepresented. In Colombia for example, school life expectancy for students from deprived backgrounds in 2016 was only six years (half that in advanced economies). Others (e.g. Indonesia) aimed at providing loans and scholarships covering tuition and maintenance costs. Other ways to enable productive transitions from school to work included vocational options in secondary schools to reduce inequality of access, conditional cash transfers and special education. But despite improvements in Brazil,[49] India[50] and other Millennial economies, progress was far from widespread.

48 The OPHI MPI includes two measures of education poverty, classifying households as deprived if no household member has completed five years in school and/or if any school-age child does not attend school in years 1–8 (OPHI, 2019).

49 The Federal Pronatec programme in Brazil.

50 The National Policy on Skill Development in India encompasses private–public partnership to develop skills and promote greater employer involvement in industrial training institutes.

Although some Millennial economies have emphasised secondary and tertiary over primary education, universal primary education is widely recognised as the basis for life, work and further education and a fundamental condition of sustainable economic growth, social cohesion and political stability. It is, however, compromised by geography, civil and military unrest, social norms including gender bias, and fiscal constraints. Its benefits are further limited by impoverished living conditions; work pressures; poor nutrition; long journeys to and from schools; parental conflict and separation; poor teaching facilities; inadequate numbers of qualified, motivated, dedicated teachers; grade repetition, segregated access; funding strategies that do not match needs; and weak links with secondary schools.

The picture is inevitably uneven. By 2020, net primary enrolment rates in most Millennial economies were close to universal, except in South Africa (below 90%) while Colombia, Indonesia and Brazil had rates just above 90% and China was close to 100%. Primary enrolment in India increased sharply (to 97%) after 2000 although gender discrepancies remained high. Gross secondary enrolment ratios remained variable, those for South Africa and China resembling the Latin American average.

Primary enrolment rates did not vary greatly by income quintile, but secondary and tertiary enrolment were strongly influenced by family income. In Brazil and Colombia, for example, the difference in net primary enrolment rates between the lowest and highest quintiles in 2013 was around 2.0%, but there was a 20% gap in secondary enrolment between the highest and lowest quintiles in Colombia and more than 40% in Brazil. The gaps were far higher in tertiary education. Whereas differences at primary level were negligible, there were comparable contrasts between urban and rural areas at secondary and tertiary levels. In some Millennial economies (Jordan, Malaysia, the Philippines) primary/secondary conversion levels and secondary enrolment rates (Brazil, Poland) were similar to those in advanced economies. Others (Argentina, Colombia, Turkey) were approaching those rates, whereas conversion and enrolment rates in China, India and Pakistan resembled those in poorer countries.

In advanced economies, recent trends towards increasingly complex manufacturing and business processes have meant that many of the occupational streams of the last century are disappearing like Antarctic glaciers. To some extent, that is also happening in Millennial economies grappling with the risks of educating young people for jobs that may disappear. And they are struggling to make *learning* skills the cornerstones of secondary education strategies. However, having managed unprecedented demographic, technological, cultural and economic change at unforeseen speeds over the last 40 years, they may have significant advantages over advanced and developing economies in fashioning coping strategies.

Well-designed apprenticeship systems that promote skills acquisition, facilitate school-to-work transitions, increase the availability of quality jobs and reduce dropouts are important priorities for Millennial economies. Apprenticeship completion rates reach about 80% in India, Argentina and Mexico. Employer enthusiasm is also crucial although, despite financial incentives, employers are often reluctant to engage with apprenticeship systems when other forms of cheap labour are available.[51]

A fundamental imperfection in tertiary – as in secondary – education in advanced and Millennial economies is the imbalance between what institutions produce and what employers want. In both, diversification has led to growing quality differentials

51 In Brazil, *Aprendiz Legal* has been successful.

between institutions; significant numbers of graduates who complete courses that yield intellectual but not economic rewards because their skills do not match jobs; and questions about the value of tertiary education, even as it becomes objectively clear that growth, mobility, cohesion and stability depend on it.

Recognising that each Millennial economy has distinct priorities, all need comprehensive strategies for tertiary education that include links with secondary education. Strategies must also ensure broad public and private sector participation in defining relative priorities, establishing sustainable institutional missions, allocating resources and managing standards.

They must also emphasise life-long learning systems; facilitate transfers between different types of tertiary institutions to accommodate changes in student preferences and aptitudes; empower regulatory accreditation bodies in public and private (including private for-profit and foreign-based) institutions; ensure that tertiary institutions remain relevant to changing needs by strengthening ties with employers; urge government and business communities to help define anticipated skill requirements; encourage continuous self-assessment and adjustment; and nurture excellence while avoiding over-concentration on elite institutions.

The social role of tertiary education in Millennial economies is no less important and potentially no less fragile than its economic role. While tertiary education is a potential enabler of social mobility, an instrument of social change and a tool of human development, its social impact has ranged from transformative to marginal. Until recently, it was widely assumed that many questions on tertiary education in Millennial economies could be answered in the light of experience in advanced economies. It is now increasingly accepted that many answers will be found within Millennial economies themselves; that some will flow from local innovations; that some will be found in other Millennial economies; and that (reversing historical patterns) ideas will also flow from emerging to advanced economies.

The growth of educated populations does not guarantee demographic dividends. In Tunisia for example, growth in the youth cohort between 1980 and 2010 was paralleled by growth in the numbers of children/young people completing primary, secondary and tertiary education. That meant recent entrants to the Tunisian labour force were better educated than earlier entrants and theoretically had better chances of finding jobs. But many did not find jobs, partly because there was an excess supply of labour and partly because their capabilities did not match demand for hard and soft skills. As a result of misalignment, the educated but unemployed population grew, emphasising the reality that as jobs become more complex, education systems must evolve to match changing labour market demands.

Intergenerational factors: health

Public health challenges and responses

Some EMS participants emphasised the importance of public health because they were convinced by Sir Michael Marmot, at the 2009 EMS symposium, that while the purpose of public health is to *prevent* disease, in most Millennial economies it is an orphan. Pointing out that almost every operational ministry or department in national and local government owns a piece of the public health action, Sir Michael argued that 'every Minister is a Minister of Health'. Most so in cities, where responsibility for public infrastructure is vested (usually with minimal national/federal control or regulation) in utility enterprises that are, in effect, the primary executors (and, in many cases, de facto creators) of environmental policy. Similarly, because air quality is largely a function of local conditions, responsibility for control normally rests with local public or private enterprises.

Other participants were influenced by Jeffrey Sachs, who told the 2017 symposium that public health was the key to disease prevention, human well-being, human capital formation and high returns on public investment. Whereas public health was 'one of the most successful disciplines of humanity', he said that it was 'largely disconnected from fiscal policies and hampered by weak links between discourse and action … and as a result, future success will depend on clear goals, specific time-bound commitments and mission-driven programmes.'

In 2012, the average share of public health and primary and secondary disease prevention in total health expenditures in OECD countries was 3.0%. But even that modest amount was much larger than in most emerging economies where (vaccination programmes apart) healthcare systems were mainly designed to diagnose and treat urgent issues and manage chronic illness. In Millennial as in other emerging economies, the major constraints to change were resistance to upsetting the status quo, and difficulties in coordinating action across systems of local, national and international governance and building effective public health institutions and services.

Acute care paradigms embedded in healthcare cultures, technologies, incentives, research and commerce have reduced morbidity and mortality across the human life course in Millennial and advanced economies. Healthcare professionals depend on patients to tell them they are sick and may treat them as passive recipients of episodic care rather than partners in monitoring potential morbidities.

Although few experts favour mass expenditure shifts from personal to public health, there are huge opportunities for growth in public health services. Even increases of 50% in public health outlays would not necessarily imply implausible increases in total health expenditures in most Millennial economies. But if they are to manage environmental and other aspects of health, they must focus more on health and less on disease, more on prevention and less on therapy, more on keeping people healthy rather than curing the sick and more on emphasising social and environmental determinants of health.

Box 10: Mission sustainable development

The (US) moonshot was a 'mission' with organisational attributes – ably described by historian Douglas Brinkley in his study American Moonshot – that were vital to its success. It had a clear goal and timeline, and a rigorous plan based on both. NASA, the US space agency, devised a three-act mission, including the single-astronaut Mercury flights, the two-astronaut Gemini flights, and the three-astronaut Apollo flights that ultimately went to the moon and back. And there was a national commitment to an integrated public–private program, ultimately involving some 20,000 private companies and 400,000 workers across the US. Finally, there was a large and realistic federal budget commitment that funded the effort from 1961 to its completion in 1969.

Jeffrey Sachs (2020)

In some advanced economies, with seemingly impregnable alliances between healthcare providers, institutions, insurance and pharmaceutical businesses, the odds against paradigm shifts are high. But in Millennial economies, the case could be strengthened by successful initiatives to combat parasitic diseases and affordable and replicable interventions (like India's National Deworming Day).[52] Shifts in favour of public health would disproportionately benefit the poor and disadvantaged.

Although the health of cities in Millennial economies is directly or indirectly affected by actions taken or not taken in almost every branch of national and local governments, few nations or cities effectively coordinate health-related policies and programmes. The consequences of weak or absent coordination include duplication, competition, inconsistency, discontinuity, low returns on health-related expenditures and a smaller impact on public health than could be achieved through coordination.

Past and present practices in public health management in advanced, emerging and developing economies suggest a belief that outcomes can be optimised by relying on autonomous jurisdictions or allowing ministries and departments with health-related responsibilities to manage their roles as though the others did not exist. Bureaucracies resist coordination because it curbs the autonomy of managers who may be happy to be *coordinator*s but are less happy to be *coordinated*.

Evidence suggests, however, that better outcomes can be achieved through public health strategies that are coordinated, prioritised and sequenced at the highest levels of federal, national and local governments. Yet few Millennial economies have taken inter-ministerial coordination of health policies and services seriously. One exception is Colombia where, in 2011, President Santos took personal charge of public health outcomes in the context of an innovative and adventurous multi-dimensional poverty programme.

Millennial economies must also recognise that trade-offs between public health, human development and economic growth must be resolved in favour of public health. Continued failures to address public health priorities will have mounting economic and social consequences, including severe effects on growth, social solidarity and trust in political arrangements. Accordingly, global action to improve environmental health (supported and/or led by advanced and Millennial economies) must be complemented by: (i) environmental health strategies designed to attenuate (and eventually eliminate) air, water and ocean pollution, soil degradation, biodiversity depletion, waste reduction and the negative environmental attributes of built environments; (ii) attitudinal, behavioural and legislative changes that embody the principles of circularity and satisficing in a framework of social justice; and (iii) sustainable balances between control, autonomy and cooperation in civil, public and private sector decision-making.

52 Conducted nationwide on 10 February each year.

In 2022, the scale, scope and cost of public health challenges in Millennial economies varied wildly. Each started with unique advantages and disadvantages and contrasting problems and priorities. Looking forward, every public health strategy in advanced and Millennial economies should be grounded in the realities that:

- Sustainable economic growth depends, inter alia, on public health services that enable children to learn and adults to work effectively and efficiently.
- Coherent societies cannot exist in the absence of minimal standards of public health that promote at least minimal distributive equity.
- Stable polities demand public health services delivered in association with primary healthcare, primary education, housing and nutrition services.

Recent studies have confirmed Sydenstricker's finding that the influenza pandemic of 1918 had vastly different effects in countries, neighbourhoods, economic groups and urban and rural areas.[53] Other studies have confirmed comparable diversity in the outcomes of the H1N1 influenza pandemic in 2009.[54] Available data suggest that, as might have been expected, the impact of the COVID-19 pandemic (2019–21) was strongly differentiated.

53 Sydenstricker (1920) challenged the common belief that the 1918 influenza outbreak had affected 'the rich and the poor alike'. Using data from 112,317 participants in a 1918 US national survey, he found that morbidity and mortality from the flu had been higher among the poor than among the rich.

54 Garten et al. (2009).

THE COVID STORY

Box 11: Lancet Commission Report on COVID-19

As of 31 May 2022, there were 6·9 million reported deaths and 17·2 million estimated deaths from COVID-19, as reported by the Institute for Health Metrics and Evaluation (IHME). This staggering death toll is both a profound tragedy and a massive global failure at multiple levels. Too many governments have failed to adhere to basic norms of institutional rationality and transparency, too many people – often influenced by misinformation – have disrespected and protested against basic public health precautions, and the world's major powers have failed to collaborate to control the pandemic.

Sachs et al. (2022)

In November 2019, news of a novel disease in Wuhan, China travelled faster than the 'shot heard round the world' in 1775.[55] As economies grappled with unforeseen challenges, erstwhile enemies half-heartedly told each other, 'We're all in this together.' Three years later, a weary world declared 'victory', knowing that variants of COVID-19 might live indefinitely; knowing the outbreak, whether *pandemic* or *syndemic,*[56] was an overwhelming global health emergency; knowing other disease outbreaks were inevitable; sensing the pandemic could be the precursor of future epidemiological and environmental (particularly climate-related) disasters; and acknowledging collective unwillingness to respond to common global threats. What the world did not know was how to assess the immediate ramifications and long-term implications of COVID-19. More than two years would pass before answers began to emerge, and another year elapsed before the *Lancet* could publish an assessment of its causes and consequences (Sachs et al., 2022) (see Box 11).

Despite initial wobbles, a rapid consensus on the dangers of COVID-19 prompted an unprecedented collaborative search for a vaccine and – because pandemics cannot be managed without hard data – the launch of multiple initiatives to collect and share information on COVID cases, hospitalisations, deaths and longer-term outcomes.

The search for vaccines was much faster and far more productive than the hunt for reliable data, largely because WHO and other agencies and institutions, seeking to meet global demand for reliable data, are obliged to depend on member states.

COVID-19 became a Public Health Emergency of International Concern (PHEIC) in January 2020. And as cases, hospitalisations and deaths increased rapidly in advanced economies, inaccurate reporting (ranging from mildly inaccurate to wildly inaccurate) confirmed its spread in emerging economies. By December 2020, reported global deaths had risen to 1.8 million (although other estimates suggested at least 3.0 million or 1.2 million more than officially reported). The next year, variants spread, bringing new threats, more cases, higher rates of infection and more deaths in Millennial economies.

Bearing in mind data imperfections, Figure 8 reflects the magnitudes of the pandemic in Millennial economies and high- and low-income comparators. Many observers initially assumed that COVID-19 would mimic previous outbreaks (SARS, MERS, Ebola), but it quickly proved more dangerous.[57] By September 2022, COVID-19 had officially accounted for more than 7.0 million deaths worldwide and remained a mortal threat, even as more and more countries declared the COVID crisis 'over'.

The direct and indirect impacts of the pandemic on health in cohort countries was in some ways similar – in kind and degree – to its impacts in advanced economies; in other ways, distinctive.

55 This refers to the opening shot of the battles of Lexington and Concord on 19 April 1775, which sparked the American Revolutionary War.

56 Singer (2000) defined a syndemic as 'a co-occurring, synergistic pandemic that interacts with and exacerbates existing non-communicable diseases and social conditions.'

57 Before the outbreak was contained in 2003, there were more than 8,000 cases of severe acute respiratory syndrome (SARS) in more than two dozen countries in North America, South America, Europe, and Asia. All cases of Middle East Respiratory Syndrome (MERS) were linked to the Arabian Peninsula; the first case was in Jordan in April 2012 and the disease spread to Korea in 2015. In 2014, a single case of Ebola in Guinea spread to neighbouring countries with devastating impacts.

Figure 8: COVID-19 cases in selected Millennial economies
Source: Our World in Data (2022)

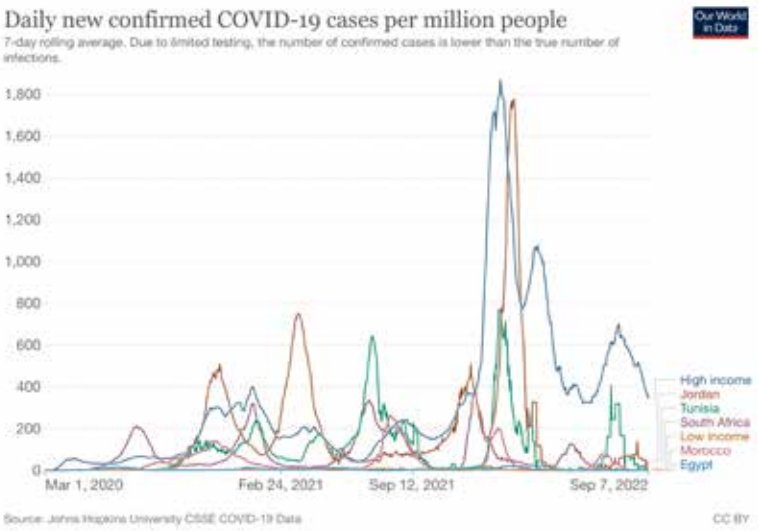

Figure 8A

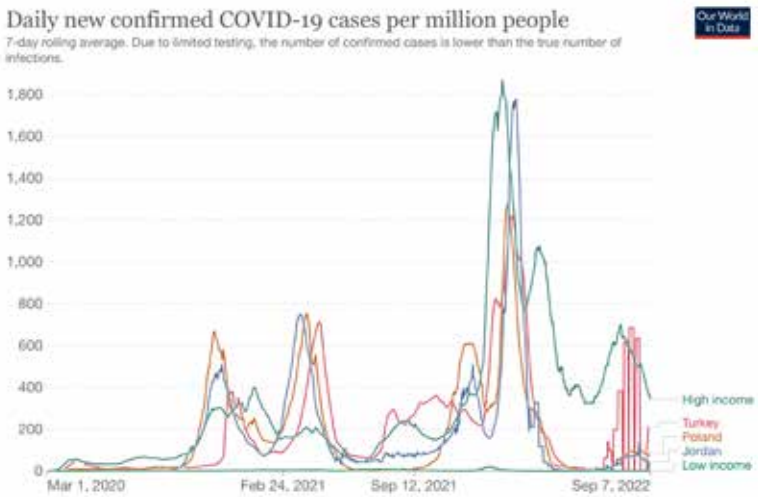

Figure 8B

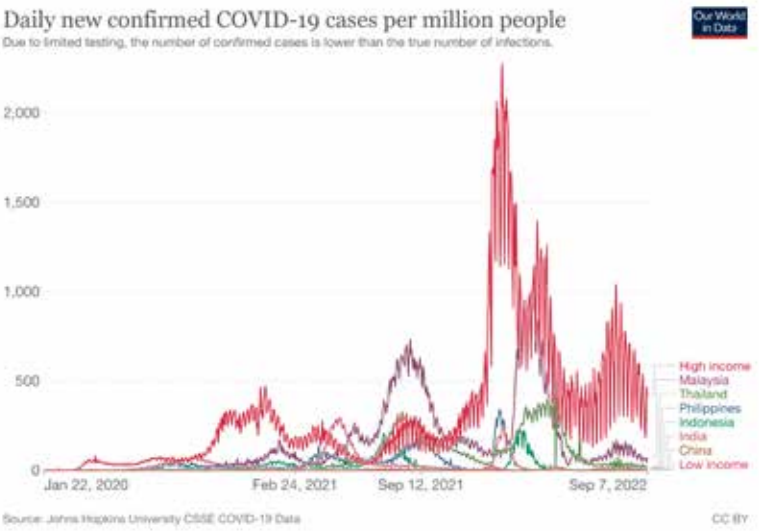

Figure 8C

By November 2020, it was clear that the impact of COVID-19 cases and deaths differed markedly across countries, regions and cities. In China for example, 83% of confirmed cases were in Hubei province. In Italy, the prosperous province of Lombardy had 47% of all cases, Santiago accounted for 70% of all cases in Chile, Sao Paulo for 25% of all cases in Brazil, Maharashtra for 21% of confirmed cases in India and Moscow for 24% of confirmed cases in Russia.

In some advanced economies, COVID-19-related mortality rates were also spatially concentrated (e.g. in the United States, there were 9.3 deaths per 100,000 inhabitants in Vermont versus 184 in New Jersey). In Italy, Calabria was the least affected region with 5.5 deaths per 100,000 inhabitants versus 171 in Lombardy. In Brazil, Minas Gerais had 41.8 deaths versus 120 in Distrito General.

Box 12: Historians' perspectives

Future historians may view the pandemic as a precursor to an endless and potentially fatal inability to recognise that global pandemics could be the least of our worries. As Wade Martins (2002) pointed out, modern historians, unlike their predecessors, no longer assume the world's trajectory of 'progress' is onwards and upwards and understand that the worst may be yet to come.

Few Millennial economies, or regions or cities within them, were well equipped to manage pandemics. Most downplayed risks; ignored crisis management plans, unlike Asian countries (e.g. South Korea) that had learned from SARS; lacked essential equipment (e.g. masks); had underinvested in hospitals after the financial crisis of 2007–08; and/or neglected contingency planning. COVID-19 was (and is) an equal opportunity medical scourge that respects no boundaries but provides insight into national capabilities for managing emergencies. Considerable heterogeneity in crisis responses highlighted their diverse economic status, the quality of political leadership and administrative capabilities, and public health capacities.

There was similar variety in response capacity among advanced economies where, despite much higher levels of resourcing and skills, outcomes were not always superior to the best of those in emerging economies. The huge disparities in morbidities and mortalities attributable to COVID-19 reflected the effectiveness of contingency planning, the distribution of pre-existing health conditions, differing vulnerabilities according to ethnicity and social justice, installed and improvised public health and healthcare capabilities, the speed with which the virus was identified, how fast governments reacted, the strength of cooperation between the public, private and civic sectors, willing or enforced compliance with national directives and leadership effectiveness. Moreover, it was magnified by legacies of pre-existing epidemics of socially patterned chronic diseases and pervasive inequalities in the impact of non-communicable diseases (NCDs) and social determinants of health.

Horton (2020) described COVID-19 as a 'co-occurring, synergistic pandemic that interacts with and exacerbates existing NCDs, living, working and other environmental conditions and access to healthcare and education'. He continued: 'As the world approaches 1 million deaths from COVID-19, we must confront the fact that we are taking a far too narrow approach to managing this outbreak of a new coronavirus. We have viewed the cause of this crisis as an infectious disease. All our interventions have focused on cutting lines of viral transmission, thereby controlling the spread of the pathogen. The "science" that has guided governments has been driven mostly by epidemic modellers and infectious disease specialists, who understandably frame the present health emergency in centuries-old terms of plague. But what we have learned so far tells us the story of COVID-19 is not so simple.'

Horton was not the first commentator to stress the importance of socio-economic determinants of health. He was, however, among the first thought leaders to point out that 'Two categories of disease are interacting within specific populations – infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and an array of

non-communicable diseases (NCDs). These conditions are clustering within social groups according to patterns of inequality deeply embedded in our societies. The aggregation of these diseases on a background of social and economic disparity exacerbates the adverse effects of each separate disease. COVID-19 is not a pandemic. It is a syndemic. The syndemic nature of the threat we face means that a more nuanced approach is needed if we are to protect the health of our communities.'

Horton's argument echoed comments by Sir Michael Marmot (at an EMS symposium in 2011), which emphasised the determinant roles of socio-economic factors in explaining the incidence and prevalence of infectious and non-infectious diseases across population groups in emerging and in other economies.[58] This insight suggests that stratified (or 'vertical') distinctions are complemented by spatial (or 'horizontal') patterns of morbidities and highlights the plight of disadvantaged neighbourhoods with low incomes, poor housing and inadequate services.

Intergenerational factors: the golden egg

Environmental degradation, habitat destruction and resource depletion in Millennial economies are collateral consequences of historic growth that consumed natural resources and ecosystem support mechanisms at rates that, if continued, would exhaust them.

That does not mean that past relationships between economies and environments offer blueprints for the future. Future demand for energy, for example, will not increase *pari passu* with economic growth, because technologies will change, production and distribution systems will become more efficient, and lessons of experience will be absorbed. With that in mind, observers may recall Santayana's dictum that 'Those who cannot remember the past are condemned to repeat it'[59] and Haines' conclusion that 'We have mortgaged the future to sustain our current level of health and development.'[60]

The critical, and exceedingly difficult, question for emerging economies is *how* to reconcile the urgent need to spread and increase prosperity while diminishing and eventually eliminating environmental threats that, left unchallenged, will undermine growth, decrease welfare, force migration and shorten lives. There will be an overwhelming but potentially fatal temptation to focus on the short term and, ignoring Aesop's warning, to kill the goose that lays golden environmental eggs.[61] Because natural systems – air, water, oceans, land, biodiversity, climate – are not confined within national boundaries, growth-driven threats to natural and built environments are universal. But the need for radical changes in priorities and behaviours and the risks of financial, social and economic disruption are disproportionately greater in Millennial economies than in others. The nature of environmental damage in emerging economies in general, and Millennial economies in particular, is essentially similar to environmental damage in advanced economies. But the scale has been larger, the rate of growth faster and the distributional effects much more disproportionate.[62]

58 See EMS (2011).

59 Santayana (1905).

60 Sir Andy Haines, Chairman of the Rockefeller Foundation-Lancet Commission on Planetary Health, reported in *Business Insider*, July 17, 2013.

61 Aesop, 'Much wants more and loses all', *Aesop's Fables*.

62 See EMS (2017).

Box 13: Rockefeller Foundation–Lancet Commission report: key messages

The concept of planetary health is based on the understanding that human health and human civilisation depend on flourishing natural systems and the wise stewardship of those natural systems. However, natural systems are being degraded to an extent unprecedented in human history.

Environmental threats to human health and human civilisation will be characterised by surprise and uncertainty. Our societies face clear and potent dangers that require urgent and transformative actions to protect present and future generations.

The present systems of governance and organisation of human knowledge are inadequate to address the threats to planetary health. We call for improved governance to aid the integration of social, economic, and environmental policies and for the creation, synthesis, and application of interdisciplinary knowledge to strengthen planetary health.

Solutions lie within reach and should be based on the redefinition of prosperity to focus on the enhancement of quality of life and delivery of improved health for all, together with respect for the integrity of natural systems. This endeavour will necessitate that societies address the drivers of environmental change by promoting sustainable and equitable patterns of consumption, reducing population growth, and harnessing the power of technology for change.

Whitmee et al. (2015)

Air

While some environmental determinants of human development in Millennial economies have age-specific (and less commonly, gender-specific) effects, many are generic. The widespread chronic health implications of the blankets of polluted air that hang over intermontane cities in the Americas (Bogotá, Medellin, Mexico City, Puebla) and China (Chongqing, Sichuan) are startling symbols of the devastating impact of air pollution on human health and productivity in Millennial economies.

Forty-seven of the world's 50 most air-polluted cities – at or near sea level – are in China, India and Pakistan, where toxic by-products of primary, secondary and tertiary industries generate visible threats to life. National and urban governments in Millennial economies, where cities account for 70% of greenhouse gas emissions, are well aware of the desperate need to reduce them. In the 1970s, Brazil, China and Colombia began to address bus, truck and commercial vehicle emissions through traffic control, infrastructure improvements and low-carbon transit systems.

Whereas most advanced economies have reduced or outlawed coal-fired energy, progress towards clean(er) energy and industry in Millennial economies has been slow; regulations are ignored; enforcement is often ineffective; and governments – in two minds about awkward trades-off – have largely relied on unsuccessful efforts to reduce urban emissions to sustain food output, rather than direct action to control deforestation and methane production and other rural-based ailments.

It may be suggested that air pollution has been eclipsed as a global environmental priority by climate change. But that ignores compelling evidence that integrating 'air pollution improvements in climate policies could make them up to 50% more effective'.[63] It also ignores the fact that since 1980, air quality in cities and – more than is often supposed – rural areas has deteriorated worldwide. Both urban and rural air pollution is worse in emerging economies than anywhere else. Partly because the world's megacities (except London, Los Angeles, New York, Paris and Tokyo) are mostly in emerging economies; partly because problems of rural air quality and pollution are associated with the destruction of soils and desertification; and partly because there have been substantial increases in SO_2 and NOx emissions. Emerging economies have also suffered increases in premature deaths linked to urban air pollution (particulates and ground-level ozone) and high burdens of disease arising from exposure to hazardous chemicals from vehicles and industry concentrated in urban areas.

63 See Clean Air Fund (2021).

In comparison with advanced economies, built environments in emerging economies have poorer housing and infrastructure, larger transmission and distribution leakages and losses, less efficient transport, fossil-fuelled electric power, more untreated solid and liquid waste, and highly inefficient combustion from vehicles and industry. As a result, their cities are generally more polluted and have poorer drainage and weaker environment education programmes than cities in advanced economies.

Environmental conditions in Millennial economies have driven migration in the past, and predictable changes mean their importance will increase in the future. But the far from hidden costs of poverty-alleviating growth in these economies include environmental damage, wasteful uses of natural capital, neglect of the social costs of resource depletion and failures to reinvest in sustainability. Poor governance, increasing social injustices, particularly to indigenous peoples, women and girls, and general disregard for oppression, all add to migratory pressures. Yet the link between migration and environmental degradation is arguably not the most important consequence of environmental change.

Water

The pollution and toxification of freshwater and ocean water are greater in emerging than in advanced economies. This is partly a function of behavioural norms: where else to bathe or wash clothes; why should cows not defecate in rivers; what is wrong with dumping solid wastes and plastic bottles in oceans; and why not dispose of dead bodies in holy rivers? Waste management infrastructure and services are often weakly regulated. Many emerging economies have high levels of groundwater pollution and depletion; growing populations are living in river basins where drought and poor water allocation arrangements create severe water stress; the quality of surface water is deteriorating; nutrient loads and risks of eutrophication are increasing; relatively large rural and urban populations lack access to safe water because urban populations are growing faster than water service connections; and volumes of untreated wastewater are rising.

Biological diversity

Pressures to increase returns on capital and expand economic activities in the context of weak environmental protection in most Millennial economies have exploited natural resources and depleted biodiversity. The impacts on the welfare and livelihoods of the rural poor, particularly those most reliant on natural nurturing, are disproportionate. Because biodiversity is geographically uneven, and Millennial economies enjoy both species richness and endemism, some of these economies (most notably Brazil) have globally significant custodial obligations. Moreover, continued biodiversity losses from climate change, land use pressures and forest shrinkage mean that Millennial economies face simultaneous and intensifying internal pressures to prioritise growth. They also face larger and increasing external pressures than advanced economies, with greater long-term implications, to slow large-scale biodiversity losses. For some, such as Brazil and Indonesia, where endemism is very high, this constraint is politically insufferable. Biodiversity attracts rich pickings from tourism, but as rich habitats dwindle so does tourism income.

Soil

Limited access to education, extension services and productivity-enhancing techniques; the abusive use of pesticides, herbicides and fertilisers; and weak regulation of farming practices in Millennial economies mean that many of their vast areas of agricultural and livestock farmland yield comparatively poor returns with faster rates of soil depletion and degradation (and multiple knock-on effects). Rising economic pressures raise the spectre of further deforestation, soil exhaustion and severe consequences for food production, nutrition and health in Millennial economies and, in effect, the rest of the world. Soils also harbour vast amounts of carbon. And soil degradation impoverishes agricultural production and generates carbon-based emissions, leading, in a perverse turn, to incremental soil damage.

Climate

Increasing emissions and growing atmospheric concentrations of greenhouse gases (especially energy-related CO_2 and livestock-linked methane) mean the impact of climate change will be greater in Millennial than in advanced economies although not necessarily greater than in poorly resourced developing economies. Some advanced economies (notably Japan and the Netherlands) are vulnerable to rises in sea level. But while world attention is increasingly focused on coastal erosion, coastal flooding and population displacement in poor developing economies (e.g. Bangladesh, Myanmar), many emerging economies, particularly in east and south Asia (e.g. China, Indonesia, Malaysia, Thailand, Pakistan, the Philippines) are also at risk of coastal inundation.

Other Millennial economies (in Latin America and Asia) are threatened by predicted increases in the frequency and severity of extreme weather events. The threats from hurricanes, cyclones and intense rainfall include river flooding, soil erosion and mudslide damage to housing, urban infrastructure, irrigation systems and dams. Given their geographic locations, parts of many Millennial economies (e.g. in Brazil, Chile, China, Egypt, South Africa) are exposed to rising temperatures, high insolation, drought and desertification. It is increasingly common for temperatures to exceed 50°C, making physical labour unbearable, especially in humid conditions.

Climate change and human activities have greatly increased the range and intensity of desertification and land degradation in arid, semi-arid and sub-humid drylands in some Millennial economies (e.g. Chile, China, South Africa), and damaged ecosystems are likely to be damaged further as human pressures and climate changes limit resilience and adaptation. The destruction of littorals, the drying of wetlands and the sedimentation of lakes, reservoirs and estuaries all add considerably to the costs of repair and future development. If wealth creation is a goal, playing fast and loose with nature is a fool's errand.

PART 4: HISTORICAL PERSPECTIVES

THE INTERWAR YEARS

History is replete with 'might-have-beens'. The British historian E. H. Carr described the period between 1919 and 1939 as 'the twenty years' crisis', highlighting continuity in the issues that faced Europe between the wars.[64] The drivers of conflict in the First World War – above all, the role of Germany in Europe – were not finally resolved until the Allied victory in 1945.

After the First World War, the leading powers chose to recreate the pre-war world and took the low road, which within two decades led to division, delusion and destruction on old and new battlefields. After the Second World War, the chosen road led winners (and losers) to brave new worlds as the architecture of the peaceable kingdom of 1945 was shaped by the 'Carthaginian Peace' of Versailles (1919) and the thinking of Wilson, Keynes, Beveridge and like-minded others.

The most accepted narratives on the perceived injustices of the interwar years draw on intellectual developments in North Atlantic societies. The Treaty of Versailles was linked with the rise of fascism (and the associated attributes of nativism, nationalism and close links between states and large businesses), particularly in continental Europe. Perhaps because of its proximity to the Bolshevik Revolution and the end of the First World War, we see little commentary on deep political changes triggered by the post-war influenza pandemic, although infection and mortality rates in Atlantic societies were far larger than those experienced under COVID-19. The lack of political fallout could reflect any number of factors, but lower expectations from much smaller and less intrusive states, and much lower levels of urbanisation and media saturation than exist today, must have played a part.

Corresponding intellectual currents in our Millennial cohort, distributed as it is across Latin America, Asia and peripheral Europe, are less often discussed in the English-language media. Fascism, Bolshevism and resistance to (de facto or de jure) colonisation were pervasive intellectual currents in the first half of the period while, in the following 50 years, activist states, at least ostensibly, were dedicated to shared objectives, economic growth and human development.

Some horizontal and vertical comparisons provide context. According to the authoritative Maddison dataset,[65] the influenza epidemic after the First World War was associated with a sharp decline in real per capita income for two years, followed by a strong and sustained recovery over the remainder of the decade. Britain's experience was more sombre, with sustained per capita growth only returning after Britain left the gold standard in 1931. In 1929, on the eve of the Great Depression, per capita income in

64 Carr (1939).

65 See Bolt and van Zanden (2020).

the United States ($6,614 in Maddison 1990 dollars) was approximately equal to that of China in 2009. The Depression dealt a savage blow to US living standards which did not recover to 1929 levels for a decade.

The expansion of state economic power, pioneered by Soviet Russia and mimicked by the fascist powers, was later absorbed by the Anglo-Saxon world. The response to the Great Depression marked a great expansion in the economic role of the state, under Roosevelt in the United States and under the intellectual leadership of Keynes in Britain.[66] However, global engagement in trade and finance was largely distrusted in the interwar period as an unwarranted restraint on domestic policy.

Rodrik has forcefully argued that the revival of global integration designed by White and Keynes at Bretton Woods was carefully crafted to preserve national economic sovereignty (which is why it was cautious about liberalising capital account transactions).[67] It is easy to forget today that most Western European economies maintained capital controls into the 1980s. Rodrik dates the intellectual and ideological rise of what he calls 'hyper-globalisation' to the 1990s. This happens to coincide with the collapse of the Soviet Union and the end of the Cold War, but it is for future historians to explore the links between the two. It is probable that the victory of the United States in the Cold War provided impetus to both China and India to pursue deeper global integration.

THE POST-WAR ERA

In the quarter century after the Second World War, many countries embraced values embedded in multilateral institutions, larger states, distributive justice, trade agreements, universal rights, decolonisation, and global economic and political cooperation. So much so that some people in advanced economies (who choose to overlook the Cold War, nuclear proliferation, conflicts in the Middle East and Southeast Asia and widespread deprivation in Africa, Latin America, Asia and Europe) view it nostalgically and perhaps perversely, as a 'golden age'.

Some historians might see the post-war period as a bell curve with a long upslope, a recent tipping point and an ongoing descent towards a dystopian future. Other commentators (e.g. Fisher, 2022), argue that: (i) whereas substantive improvements in the quality of life are incremental, crises are sudden; (ii) memories are selective (those who wax nostalgic about the 1990s forget East African famines and genocides in Bosnia and Rwanda); (iii) the feeling that the world is getting worse is not universal – many people in today's emerging and developing economies are better off than ever before and the mood of prevailing pessimism in advanced economies contrasts with moods of relative optimism in many emerging (and some developing) economies.[68]

Between 1980 and 2010, the Millennial cohort raised incomes, reduced poverty (in some cases, massively), created burgeoning middle classes, achieved conditional convergence within the cohort and with advanced economies, yet failed to match the transformational changes achieved by the post-war cohort. Baldwin has pointed out that developments in telecommunications and transportation technologies were critically important in

66 A somewhat different dynamic was at work when the pre-First World War liberal order gradually gave way to protection in the 1930s, to be resurrected under Anglo-American leadership at Bretton Woods.

67 Rodrik (2017). Delegates from 44 nations attended a conference in Bretton Woods, New Hampshire, in July 1944, to devise a new international monetary system.

68 'Where you stand depends on where you sit'. See Miles (1978).

enabling the fragmentation of production and services that facilitated the success of the Millennial cohort.[69] This 'unipolar moment' had a chequered history. On the positive side, the success of fledgling Indian information technology firms in addressing the 'Y2K' challenge in the late 1990s laid the foundation for a new model for service delivery that exploited labour cost arbitrage and dramatically lower telecommunications costs and time-zone differences. Less positively, a decade of capital account liberalisation triggered the East Asian crisis of the late 1990s as well as the linked failure of the long-term capital management (LTCM) hedge fund in the United States. These episodes revealed unexpected links between financial markets in emerging economies and vulnerability in the United States and prompted the G7 to invite other large economies to create the G20 at ministerial level in 1999.[70]

The creation of the World Trade Organisation (WTO) in 1995 very quickly produced a backlash in advanced economies against further negotiated liberalisation (represented by protests in Seattle against the launch of a new trade round) even as deeper integration – associated with the rise of China as a trading and manufacturing hub – proceeded relentlessly until the financial crisis of 2007–08. That advance was actively reinforced by US support for China's entry into the WTO in 2001. The attacks on the World Trade Center in 2001 and the subsequent 'war on terror' prosecuted by the George W. Bush administration in Iraq and Afghanistan, though seemingly pivotal at the time, did remarkably little to slow the momentum of global integration, and indeed were associated with an almighty boom in emerging economies, led by China.

Had it not been for timely and decisive interventions, coordinated by the United States and supported by multilateral institutions, the damaging consequences of the 2007–08 recession would have been even more damaging. Nonetheless, the recession crystallised dissatisfaction with long-standing economic and social trends that were most acute in the United States.[71]

The G7's policy response to a recession provoked by a financial crash was many things, but it was not a new beginning. In hindsight, many aspects of the recession are debatable but there is little doubt that the primary instinct of global decision makers was to try to put Humpty Dumpty together again as fast as possible. Australian Prime Minister Kevin Rudd noted that 'the crash called into question the prevailing neoliberal economic orthodoxy of the past 30 years – the orthodoxy that has underpinned the national and global regulatory frameworks that have so spectacularly failed to prevent the economic mayhem which has been visited upon us.'[72]

While the economic effects of the crisis were global, it originated in the financial markets of the United States and northern Europe. The metrics were failed banks, collapsed corporations, destroyed businesses, shattered confidence, and lost savings, houses, jobs and dreams. For Millennial economies the consequences of the recession resembled those that rocked the North Atlantic community. Many (e.g. Argentina, Russia, Mexico, Poland) had a rough time adjusting to downturns in world trade, the collapse of some commodity markets, and disruption and uncertainty in financial markets. They were also buffeted by more intense competition in manufacturing and services as advanced economies scrabbled to adjust to weakened demand amid increasingly frantic efforts to manage labour markets.

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69 Baldwin (2012).

70 These meetings were upgraded to the Leaders' level in 2008.

71 Foremost among them, stagnating real wages for adult white males and rising wealth and income inequality.

72 Rudd (2009).

Economic convergence occurs when income gaps narrow as relative growth rates change. Divergence occurs when income gaps widen as relative growth rates change. That was what happened in 2013 when, prompted by a dip in investor confidence in emerging economies, growth rates (in emerging and advanced economies) diverged, bringing more than a decade of emerging-market optimism (notably in the BRICS) to an end.

By the end of the noughties, the development of new and enhanced national capabilities meant that superficial differences between some Millennial and some advanced economies had diminished to the point that a dispassionate observer, revisiting Bogotá, or Bangkok in 2010 after a long absence, was struck by many signs and symbols of change. Thanks to improved education, new technologies and (partially satisfied) demands for probity, solutions to 'wicked problems' that had recently depended on foreign assistance, were being resolved without it.

The capabilities of government, business and civil society were nonetheless stretched by the need to address complex challenges on accelerated schedules with limited resources and (still relatively) weak institutions. In 2008, the wonder was not so much that Millennial economies had *not* become advanced economies but that (in narrow GDP terms) they had done as well as they had. Allowing for these distinctions, human development outcomes were functions of the interplay between demographic, macroeconomic, environmental, health and education trends and policies.

THE 2010S: BROKEN GLASS

The decade of the Emerging Markets symposia was marked by changes in the global order with important implications for Millennial economies. Some were eventually eclipsed by the COVID-19 pandemic which, in hindsight, can be seen as a 'canary in a coalmine' reminder that continued failure to invest in human capital: (i) increases the risks of creating perpetual poverty traps for disadvantaged populations; and (ii) exacerbates the vulnerability of Millennial and other economies to global shocks.

The disruptions of the 2010s included demographic transitions (population ageing, declining reproduction rates, urbanisation, international migration); geopolitical transitions (creation of the G20, collapse of the Washington Consensus); geo-economic transitions (tensions over the future roles of states, the growing power of the global east and the global south); technological transitions (digitisation); social transitions (increasing global inequality, polarised societies and weakening social contracts); environmental transitions (global warming, climate change, water, air and soil pollution, water shortages and surpluses, the gradual destruction of the biosphere, relentless insistence on using short-term criteria in environmental decision-making); and domestic (e.g. China, Colombia, Tunisia) and international (e.g. Russia) conflicts.

The magnitudes and implications of these disruptions varied but were generally unwelcomed by a manifestly unprepared world. Some (e.g. armed conflicts) were geographically concentrated; some (e.g. drought, coastal flooding, extreme weather events) were widespread but not universal; others had immediate effects (e.g. tidal surges) or gradual effects (e.g. global warming). Few were truly global, although the decade was preceded by a (global) recession and followed by a pandemic that struck the global economy after a broad-based slowdown in productivity growth.[73]

It is one thing to dwell on the fact that, by 2022, no Millennial economy had become an advanced economy. It is another to say that, although economic progress in most emerging economies slowed after c.2010 (in some cases markedly), many of them (with some backsliding) had made astonishing progress since c.1980. Most obviously, because China and a handful of other emerging economies achieved remarkable results through economic growth and social intervention. Less obviously, troughs in human well-being, particularly those associated with the financial crisis of 2007–08, and the COVID-19 pandemic/syndemic of 2019–22, may eventually be seen as devastating yet transitory events.

2019–22: THE PANDEMIC

The COVID-19 pandemic exposed four global realities. (i) The crisis crept up on the world like a thief in the night. (ii) Although science has come a very long way since the Black Death killed up to 200 million people between 1346 and 1353, the world was initially overwhelmed by the speed and scale of the COVID-19 pandemic.[74] (iii) Faced with potential cataclysm, the world's scientific community put rivalries aside and collaborated in a search for a vaccine. (iv) The rapid production of vaccines was both a triumph of medical research *and* a partial template for global cooperation.[75]

COVID-19 economies

As news emerged from Wuhan in December 2019, the world began a protracted struggle with the epidemiological mysteries and economic implications of COVID-19. In the following months, as global output shrank, many advanced economies restricted freedom of movement to minimise infections, expanded public sector spending, made efforts to support private enterprises and launched central bank asset purchase programmes. Some Millennial economies, with fewer and weaker tools (than, for example, direct budget financing or temporary freezes on loan repayments), also responded to unprecedented economic threats with varying degrees of success.

Despite the paucity of verifiable facts at the time, commentaries on medical and non-medical aspects of COVID-19, began to emerge in the first months of 2020. With hindsight, initial estimates of the nature and magnitudes of the pandemic's impact) were inaccurate although COVID-induced recessions and job losses (with the partial exceptions of tertiary-educated younger workers became widespread. Recognising that 'market volatility' would 'test the ability of policymakers to navigate a shifting landscape,

73 Dieppe (2020) offers insights on events and trends in 164 advanced, emerging and developing economies which emphasise that the economic impact of the subsequent pandemic was exacerbated by a broad-based decline in productivity in the 2010s, noting 'a near universal slowing of capital accumulation and markedly lower rates of total factor productivity in countries at widely different stages of economic development'.

74 The Black Death, a bubonic plague pandemic in Western Eurasia and North Africa, was the most fatal pandemic in human history

75 Much as the Paris Accord (2015), despite disappointingly halting implementation, was a testament to effective scientific collaboration and the art of political consensus.

manage their policy trade-offs, and achieve a durable recovery',[76] the IMF anticipated that recovery would be uneven.

A year later Noy et al.[77] argued that economic risks in some emerging and developing economies were higher than might have been expected and, using the UN's disaster risk modelling framework,[78] concluded that the economic risks of COVID-19 were 'mostly determined by exposure, vulnerability, and resilience … almost completely decoupled from the (hazard) infection risks, and had distinctive spatial distributions.

Although employment levels began to recover in many advanced economies, they persisted in emerging economies as the effects of COVID bit harder. Labour force participation fell. Health costs rose. Demand for fiscal support increased. Falling household and business incomes were reflected in rising loan defaults and reduced fiscal revenues. Private and public sector debt in many Millennial economies increased. Banking sectors were weakened by rising risks, misallocated loans and misjudged distinctions between insolvencies and short-term liquidity issues. Most experienced currency depreciation and reversed capital flows.[79]

In October 2020 the IMF concluded that the COVID-19 pandemic would have a larger and more damaging effect on global and (for the most part) national economic growth than previous pandemics.[80] It also concluded that the pandemic would have even larger distributive consequences, including unravelling some of the progress made by Millennial economies since the global financial crisis.

In different degrees, these changes reflected 'virtuous' and 'vicious' circles of growth, human welfare/well-being, and human capital accumulation/formation in Millennial economies. These changes are encapsulated in the composite Human Development Index (HDI) – the mean years of schooling, life expectancy at birth and GNP per capita.[81]

Figure 9 shows dispersed outcomes for the HDI, ranging from scores above 0.8 in Poland, Chile and Argentina to 0.7 or less in Egypt, India, Indonesia, the Philippines and Pakistan. Except in India, these results also pointed to widening gulfs between the cohort's most and least successful economies, which did not seem to be linked to distinctive political systems, regimes, institutions or forms of government. There were smaller differences in the allocative priorities of market based and command economies than some observers might have expected.[82]

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76 Duttagupta and Pazarbasioglu (2021). See Gopinath (2021).

77 Noy et al. (2020).

78 A disaster is defined as 'a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity leading to human, material, economic and environmental impacts. The effects may be immediate and localised but may also be widespread and lasting.'

79 Bizuneh and Geremew (2021) write: 'The Covid-19 pandemic has had a global economic impact. The reduction in economic growth for many countries has come as a result of reduced labor supply, higher production cost, higher temporary inflation, and reduced social consumption (Wren-Lewis, 2020). The subsequent stringent lockdown measures implemented by many governments to protect susceptible populations has further amplified the contraction in economic activity. The reduction in economic activity has severely damaged government budgets throughout the world causing an increase in debt because of swelling budget deficit resulting from plummeting tax revenues and increasing expenditures.'

80 Cugat and Narita (2020).

81 The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living. The HDI, developed by Mahbub ul Haq at UNDP is the geometric mean of normalised indices for each of the three dimensions (ul Haq, 1995).

82 That is, autocratic or non-participatory political systems as opposed to democratic or participatory systems.

Figure 9: Human Development Index for Millennial economies, 2021–22

Rank in 2021	Change in rank since 2015	Millennial economy	Composite score 2021	Average score 2010-21
34	▼(1)	Poland	0.876	▲ 0.37%
42	▲(1)	Chile	0.855	▲ 0.46%
47	▼(4)	Argentina	0.842	▲ 0.09%
48	▲(6)	Turkey	0.838	▲ 1.03%
52	▼(2)	Russia	0.822	▲ 0.29%
62	▲(1)	Malaysia	0.803	▲ 0.39%
79	▲(19)	China	0.768	▲ 0.97%
84	▲(1)	Peru	0.762	▲ 0.45%
86	▼(8)	Mexico	0.758	▲ 0.15%
87	▲(1)	Brazil	0.754	▲ 0.38%
88	▼(1)	Colombia	0.752	▲ 0.32%
97	▲(13)	Egypt	0.731	▲ 0.73%
97	▲(1)	Tunisia	0.731	▲ 0.14%
102	▲(2)	Jordan	0.720	▼ 0.06%
109	▼(4)	South Africa	0.713	▲ 0.50%
114	▲(3)	Indonesia	0.705	▲ 0.55%
116	—	Philippines	0.699	▲ 0.33%
123	▲(3)	Morocco	0.683	▲ 1.14%
132	▼(1)	India	0.633	▲ 0.88%
161	▼(2)	Pakistan	0.544	▲ 0.68%

COVID-19 societies

Driven by cumulative circular causation, the adverse consequences of the pandemic were broadly consistent with the disposition of comparative advantages and disadvantages within Millennial economies and between Millennial economies and others. This meant that, as would have been expected, advanced economies fared better than Millennial economies, Millennial economies fared better than other emerging economies, and emerging economies fared better than developing economies. But it also meant wide dispersions and surprisingly strong and weak performances within each cohort, which might not have been expected.

Working populations

The effects of rising pandemic-related unemployment and underemployment in Millennial economies were accentuated by widespread failures by employers to prioritise workplace safety and (when and if they became available) access to vaccines, thereby exacerbating existing inequalities. In early 2020, the IMF estimated the preponderance of informal employment in some Millennial economies could mean that very large numbers of informal sector workers would lose at least half their earnings in the first month of the pandemic.

Whereas advanced economies saw significant growth in remote working, the lower availability, accessibility and affordability of digital technologies and infrastructures and cultural factors in the sectoral structures of Millennial economies meant that working from home was, and is, uncommon. However, there is growing evidence that economies with large proportions of non-manual labour have led to semi-permanent shifts.

Female populations

Although the overall death toll of COVID-19 was and is higher among men than women, the livelihoods of female workers were disproportionately affected. Worldwide, women comprise 70% of frontline health and social workers. The World Bank estimated that half the contributions to healthcare (approximately $1·5 trillion annually) were by women in underpaid or unpaid work.

Many women in emerging economies also faced enormously increased demands on their time and energies, as, for example, when uncertainties about school openings presented intolerable choices between work and childcare. These shifts were reflected in declining shares of women in the workforce (e.g. in Latin America, the share fell from 51·4% in 2019 to 46·9% in 2020). Existing gender inequalities in terms of labour, income, personal safety, education and food security intensified over the course of the pandemic, with important local, regional and national variations and disparities.

Student populations

Very large numbers of children in Millennial economies were seriously affected by threats to their immediate and long-term well-being from interrupted in-person schooling, the loss of learning opportunities and the absence of school meals. Children under 18 were even more seriously affected than those in hard-hit advanced economies. In India, for example, the shutdown of primary schools for nearly a full academic year, coupled with family financial stress, could, in due course, raise drop-out rates, particularly for girls – with multiple long-term consequences. School midday meals play an important role in child nutrition in India and these too were interrupted. State agencies and civil society organisations scrambled to fill the breach but the full extent of what has come to be called 'scarring' by the pandemic will only become clear with time.

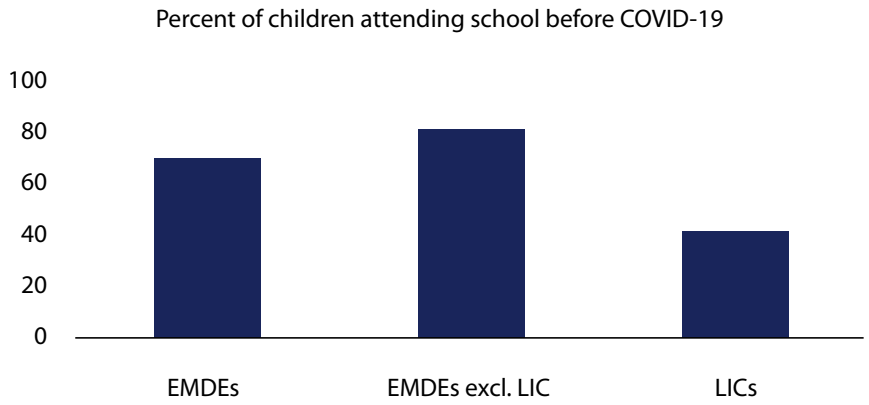

Figure 10: Percentage of children attending school before COVID-19

EMDEs = emerging market and developing economies; LICs = low-income countries.

Source: World Bank (2022)

Almost 200 countries closed schools during the pandemic, affecting more than 1·5 billion children and young people and posing enormous long-term and unrecoverable costs to them, their parents, and to household and national economies. School closures had devastating effects on learning, mental health, socioemotional outcomes and lifetime earning potential, such as education backsliding, increasing drop-out rates, abuse and neglect.

In-person schooling was deprioritised in some Millennial economies even as other non-essential or less-essential community and economic activities continued. School closures also affected child safety and increased exposure to abuse. Lack of economic support at home and the lack of protection normally afforded by schools put girls at increased risk of mental health problems, violence, child marriage, pregnancy, female genital mutilation and HIV infection, with limited or no access to services. In 2021,11·2 million girls and young women globally were at risk of not returning to school.

Box 14: COVID-19 and education

In March [2022], we will mark two years of COVID-19-related disruptions to global education. Quite simply, we are looking at a nearly insurmountable scale of loss to children's schooling. While the disruptions to learning must end, just reopening schools is not enough. Students need intensive support to recover lost education. Schools must also go beyond places of learning to rebuild children's mental and physical health, social development and nutrition.

Robert Jenkins
UNICEF Chief of Education
January 2022

School closures also affected children's physical health, food security and nutritional status. UNESCO estimates that in September 2021, nearly 370 million children across 50 countries or an average of four in ten (in some cases up to nine in ten) were affected, with 39 billion meals missed worldwide. The absence of structured routines and peer interactions also disrupted children's lives, amplified the anxieties of isolation and disease, and led to losses of physical, intellectual and social engagement and motivation.

The World Bank has estimated that the global COVID-19 generation could lose $10 trillion in life earnings; that lost learning could increase learning poverty levels to 63% (driving countries even further away from achieving learning poverty goals); and that in South Asia alone, the cost of school closures was between $622 billion and $880 billion. For 2020, the IMF estimated learning losses from school closures at 20–25% of the school year in advanced economies and twice that in emerging and developing economies.

Distributive equity

Both the IMF and the World Bank concluded that income inequality had increased since the 2000s, reflecting severe job and income losses among low-skilled workers, low-income households, informal sector workers, and women. At the World Bank, Adarov noted that 'The increase in within-country inequality caused by the pandemic may become entrenched as pandemic-induced disruptions to education and the disproportionate adverse effects on low-income households may worsen intergenerational mobility. High inflation and surging public debt levels may hamper countries' ability to support vulnerable groups and facilitate recovery and sustainable growth.'[83]

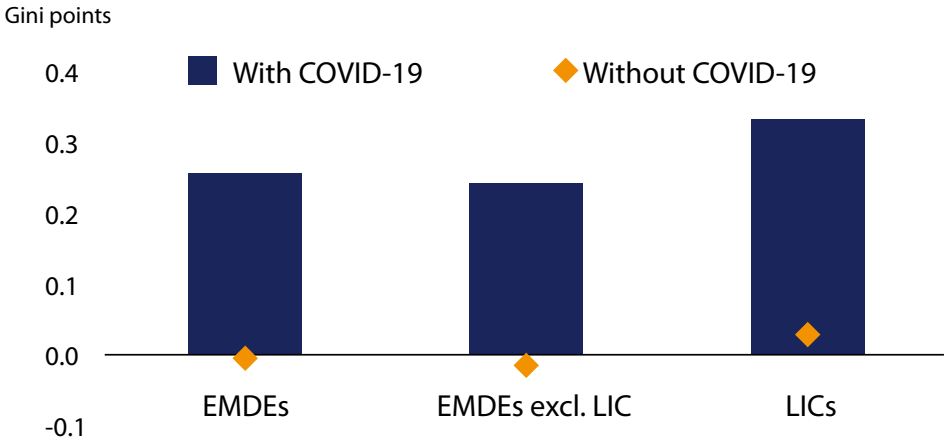

Figure 11: Change in within-country income inequality in EMDEs, 2019–20
Source: World Bank (2022); Adarov (2022)

83 Adarov (2022).

Figure 12: Change in global between-country income inequality

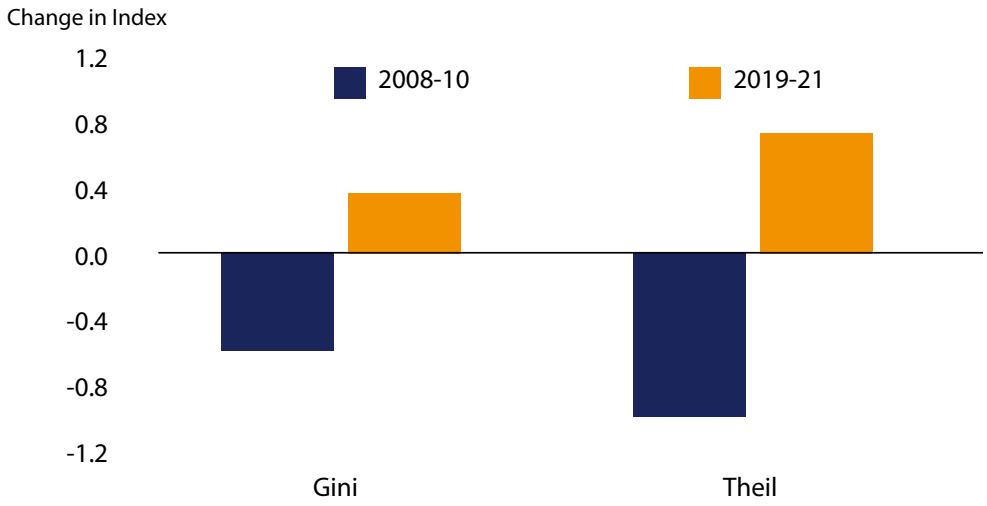

Figure 12 shows annualised changes in the between-country Gini and Theil indices in 2008–10 and 2019–21. The calculations are based on a strongly balanced panel of 176 countries. The Gini index is on a scale of 0–100. The Theil generalised entropy (GE) index and the Gini index are computed using GDP per capita, purchasing power parity-adjusted (constant 2017 international dollars), based on the World Bank's World Development Indicators and growth estimates.

Source: World Bank (2022); Adarov (2022)

Pre-existing inequities and inequalities in distributions of income, wealth, healthcare, education, nutrition, housing and other social determinants of health in Millennial economies were exacerbated by the pandemic. Contributing factors included severe job and income losses in low-income populations, entrenched distributive patterns, weak labour organisations, persistently high levels of economically inactive youth, rising inflation and, in many emerging economies, dominant informal sectors.

The IMF calculated that COVID-19 had a much larger effect than past pandemics on income distribution within Millennial economies and between Millennial and other economies, so much so that many of the gains achieved between c.2000 and c.2020 were pared back or reversed. The IMF estimated the average Gini coefficient for emerging economies and developing economies (a larger universe than Millennial economies) in 2021 was 42.7, which was similar to the figure for 2008. The IMF also found that inequality between countries attributable to the pandemic had increased, thereby jeopardising progress made since c.2000. These changes were reflected in the reversal of Gini and Theil indices based on real per capita GDP.

PART 5: HUMAN RESILIENCE AND THE HOLY GRAIL

In September 2022, most observers believed that: (i) the COVID-19 pandemic was probably not over; (ii) even if it *were* over, there would be other epidemic crises; (iii) there was a clear and present danger in ignoring lessons learned during the pandemic. Above all were the lessons that, for Millennial and other economies, *national resilience* is the holy grail,[84] the key to national resilience is *human resilience* and that, as hypothesized in Part 1[85], the key to human resilience is *human development*.

GLOBAL CONTEXT

Challenges for human development in Millennial economies in the 2020s will be framed by: (i) geo-economic and geopolitical changes in roles and relationships between Millennial economies and between Millennial, advanced and developing economies; (ii) the evolving global roles of China, India and Russia; and (iii) the political and economic roles of other Millennial economies (e.g. Brazil, Colombia, Indonesia, Mexico, South Africa).

The main changes will include: the rising economic power and comparative advantages of India (including a favourable age profile and demonstrated scientific, technological, innovation and leadership capabilities); the consequences of Russia's economic and foreign policies; and, above all, the growing economic and geopolitical ascendancy of China.

Commentators on China struggle to reconcile its status as a Millennial economy *and* a 'great power'. They emphasise that, having invested 43% of GDP in the second half of the 2010s, China has continued to accumulate capital and retain a relatively favourable ICOR.[86] They observe that China's continued progress could be crimped by diminishing returns to capital, fewer internal migrants and declining total factor productivity (partly attributable to stalled structural reform in state enterprises).[87] They note that employment patterns in China contrast with those in advanced economies with fewer workers in construction but more in manufacturing and agriculture.[88] They recognise that: China's adult population in 2020 had an average of 9.9 years schooling compared with 11.5 years in advanced economies; its stock of human capital reflects past impoverishment; and that future economic growth will be prejudiced by declining reproduction rates, reflecting costs of investment in human capital and historically restrictive population policies.

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84 The Cambridge Dictionary defines a holy grail as 'something that people want and are looking for but that is extremely difficult to find or get'.

85 See Part 1, p.16

86 Rajah and Leng (2022).

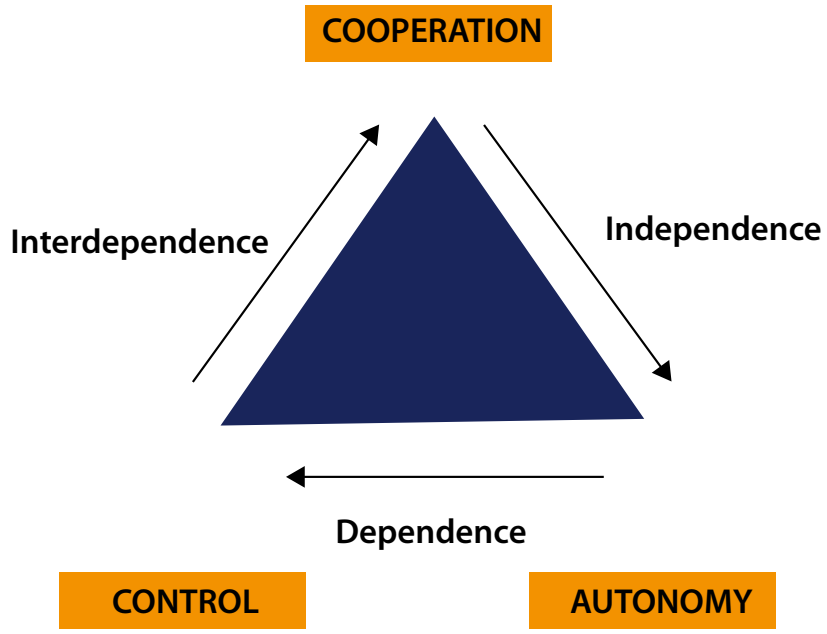
87 Brandt et al. (2020).

88 See *Economist* (Oct 15, 2022), Przeworski and Limongi (1993), Frieden (2020).

In varying degrees, Millennial economies will also be affected by other global events and trends including competition from developing economies with significant comparative advantages (primary resources, increasingly skilled and relatively cheap labour); disruptions in global energy markets in the wake of potentially dramatic changes in gas and oil markets; uncertainties about the future of the post-Brexit European Union; increasingly chaotic and largely unregulated intercontinental migration; the multiple consequences of climate change and diminishing biological diversity; public health crises (including future variants of SARS-COVID-19); the consequences of rising longevity; the persistence of NEET populations; global financial instability and debt; the reconciliation of international social, cultural, economic and political differences in the context of globally divergent values; and fragile commitments to multilateral institutions and international law. Those issues have global reaches, and can be neither attenuated nor resolved without global cooperation.

The triadic framework (Figure 13) recognises cooperation as a constituent element of public, private, civic, global, regional, national and local organisations at all times and in all places.[89] The other constituent elements are control and autonomy.[90]

Figure 13: Triadic framework



89 See Keidel (2010).

90 Including nation states (not always thought of as 'organisations', although they are). Also, mission specific and specialised regional, international, multinational and multilateral agencies and institutions.

On a global level, cooperation facilitates flows of goods, services, ideas, innovations, financial resources and social and political discourse,[91] some of which are mediated or regulated by institutions that appear to be steady states, although none is immutable[92]. International cooperation is predicated on: (i) mutual interdependence (e.g. between nation states); (ii) the partial (mandatory or voluntary) surrender of degrees of bilateral or multilateral control and autonomy in exchange for the benefits of cooperation; and (iii) mutual trust as a condition of bilateral interdependence (between nation states) or multilateral interdependence (often mediated by international organisations).[93]

As post-war dreams of global collaboration anchored in 'universal values'[94] faded in the 1950s, the positive post-war *zeitgeist* gradually gave way to pervasive mistrust and pessimism that coloured international relations in the second half of the century. But breaks in the clouds revealed what Churchill described as 'sunlit uplands'[95] (Box 15) where bilateral and multilateral cooperation facilitated technological adaptation and adoption, the diffusion of best practices, scientific collaboration, the creation and dissemination of a vast and growing corpus of knowledge and understanding of economic, social and human development, and the proliferation of print and online publications by academic and other knowledge institutions. The expansion of personal travel and accumulated insight created unprecedented growth in the stock and flow of data, information and knowledge of human development issues, options and outcomes.

DOMESTIC CONTEXT

Cooperation is a domestic as well as a global enabler of human development in Millennial economies but the dynamics are different. Whereas global cooperation features fluid interactions between control, autonomy and cooperation, domestic cooperation is governed by national, federal or other unitary authorities that define (and change) its purpose, nature and modalities. Limits to authority are reflected in the difficulties experienced by national governments that seek to impose or propose cooperative arrangements for planning and delivering public and personal health, social care, education, housing and infrastructure and other services that affect human welfare, well-being and development. One of many examples is that effective collaboration between sectoral and administrative jurisdictions to facilitate seamless delivery of public health and personal health services has generally proved elusive[96] Considering that such constraints have proved insurmountable in many advanced economies it is not surprising they have been more insurmountable in Millennial economies. The challenge thus remains but must be pursued because the prize justifies the effort.

Box 15: Sunlit uplands
Some positive trends and events:

- *The creation and evolution of what became the European Union.*
- *Although the 2015 Paris Agreement on Climate Change turned out to be only a partial breakthrough in the struggle to contain global warming at less than 1.5% above pre-industrial levels, it was a promising example of global willingness to act collaboratively in the face of a set of existential threats.*
- *Global cooperation made it possible to quickly produce effective vaccines for COVID-19 and confirmed that the world was capable of collective action in the face of another existential threat.*
- *The challenge for the future may be to recreate the (temporary) zeitgeists of 2015 and 2021.*

91 Hugely augmented by the internet and social media.

92 The impermanence of nation states and internal jurisdictional boundaries is self-evident. Likewise, the relatively short lifespans of corporate and small businesses and civic organisations.

93 See Keidel (2010).

94 Embodied in the architecture of the United Nations and other multilateral institutions.

95 Churchill used the phrase in his 'finest hour' speech in June 1940: 'If we can stand up to him [Hitler], all Europe may be freed and the life of the world may move forward into broad, sunlit uplands.'

96 See Vargas et al. (2016).

ROADS TO RESILIENCE

The future prosperity, even survival, of nation states ultimately hinges on their resilience, which is to say their capacity to anticipate, manage and adapt to natural and unnatural shocks. To manage challenges and threats to and constraints on human development, Millennial economies must: (i) foster sustainable economic growth through harmonised macroeconomic and environmental strategies; and (ii) promote human development as a condition of sustainable and equitable growth (Box 16).

Macroeconomic strategies

The first challenge for Millennial economies will be to pursue job and income creating growth by:

- reversing diminished productivity, creativity and capability trends of the 2010s/early 20s;
- redressing the 'scarring' effects of the pandemic on investment, employment and financial systems and rectifying damage (in some cases exacerbated by the Ukraine conflict), including the depletion of human capital by mortality and morbidity;
- rebuilding fiscal, external and macro-financial buffers for managing future crises;
- repairing the effects of weakened supply and value chains, trade imbalances, historically high levels of private debt with variable interest rates (the effects of which could be exacerbated by tightening debt conditions and depreciating currencies in advanced economies), rising inflation and exchange rate instability;
- explaining to and consulting with the public and specific interest groups on economic and social priorities and constraints, guided by the proposition that national resilience is ultimately human resilience;
- repairing the erosion of trust that underpins conventional economic behaviour and state interventions.

Environmental strategies

The second (and parallel) priority will be to address the panoply of environmental issues summarised in Part 3 including: (i) global *processes* of warming, insolation, eutrification, and air, water and soil pollution; and (ii) global *consequences* of desertification, unsurvivable temperatures, more frequent and more intense storms, hurricanes and typhoons, increased rainfall, faster polar and glacial melting, rising sea levels, declining water quality and availability, wind-driven tidal (including neap) surges and fluvial and coastal inundation.

The future impacts of these environmental processes on human development in Millennial economies will have huge variations. Water scarcity will be a dominant issue in Chile and South Africa; intense insolation and unsurvivable high temperatures will threaten life in western China and parts of India; fluvial flooding will inundate much of Pakistan; powerful hurricanes will threaten Mexico; coastal flooding will become more severe in Thailand and Malaysia. And because many of these phenomena will be attributable to or exacerbated by the effects of climate change, Millennial economies will have strong vested interests in the development, efficiency and effectiveness of national and international organisations mandated to support the efforts of nation states to manage, attenuate and adapt to them.

Box 16: Human adaptability and resilience

Masten and Obradovic (2006) made the following points.

- In the midst of pandemics, terrorism, natural disasters and other catastrophes, even the best surveillance, equipment, communication systems, antiviral supplies, military and emergency services count for little in the absence of commensurate attention to human behaviour.
- The burgeoning research on human resilience, which began with a focus on children and families in the middle of the 20th century, offers important principles and guidelines for planning and recovery. The adaptive systems for positive human adaptation and development, legacies of biological and cultural evolution, must be considered and enjoined to promote resilience.
- Resilience is invariably rooted in individual actions supported by larger systems that are unlikely to be available during unfolding catastrophes when communication, transportation, manufacturing, and other systems are often disrupted or destroyed (Longstaff and Yang, 2008).
- Effective preparation for and responses to the looming threats of the 21st century require a new level of integration of knowledge of resilience across interdependent systems and across scales. Knowledge from research on human resilience from the developmental and behavioural sciences must be integrated with knowledge about resilience from research on many other components of the complex interacting systems in which human life is embedded. Mobilisation to prepare, respond and recover effectively from major disasters requires a full-scale collaborative and multidisciplinary agenda to integrate ways of understanding and changing the dynamics of resilience from molecules, microbes, and microchips to cities, societies, economies, electronic communities and ecosystems.

Box 17: Disasters

Over the past few decades it has become accepted that disasters occur at the intersection of a natural hazard and people's vulnerabilities, i.e. the organisation of society, with implications for the activities undertaken under the denominator of disaster management. That is, if disasters are inevitable, measures could only be directed at preparing people for a possible disaster to come (i.e. disaster preparedness) and assist them once a disaster had hit (i.e. disaster response). Approaching disasters as an intersection between nature and humankind on the other hand implies targeting underlying factors equally, including enduring vulnerability and people's capacities. Following this trend, resilience thinking currently tops the agenda of disaster risk reduction, and yet the challenge in the coming period is to overcome the teething troubles of this approach. Indeed, resilience has the potential to become the next battleground for on-going debates on the purpose of humanitarian aid; i.e. whether it should be provided solely on the basis of identified needs, linked with development objectives, as part of broader coherence/whole of government agendas for wider change, or simply be a means of preserving the status quo – what Walker and Maxwell (2009) label as the '3 Cs': compassion, containment and change.

De Milliano et al. (2015)

Box 18: Human and economic development

Stewart et al. (2018) argue that: (i) human development (HD) is the central objective of human activity; (ii) economic growth is a potentially critical instrument for advancing it; (iii) achievements in HD can make critical contributions to economic growth; and (iv) there are distinct causal chains from economic growth to HD as resources are allocated to activities contributing to HD; and from HD to economic growth, indicating that, in addition to being an end in itself, HD helps increase national income.

Their analysis suggests that the strength of the chain linking growth to HD is greater, the higher the allocation of GNP to social sectors (and, within them, social priorities); the more equally income is allocated; and the more efficient the function linking household consumption (which is likely to be affected by complementarities among different inputs, the female share of household income and female participation in household decision-making) to HD outcomes. The chain linking HD to economic growth is likely to be stronger the greater the investment ratio, the more efficient the economic policies and the stronger the prevailing institutions.

While a voluminous literature confirms the importance of all these elements, their own investigations found that, besides the impact of HD on economic growth, social sector expenditure was significant in the first chain and that female secondary enrolment in education (as a proxy for female control over income and decision-making) and investment share, were significant in the second. Contrary to their expectations, they found the Gini coefficient was not significant in either chain, although the signs were negatively associated. They also found correlations between HD variables that reflected synergisms (e.g. between education and nutrition).

In the current decade, symbiotic climate change and the loss of biological diversity will have critical impacts on human development. Because ecosystem destruction accelerates climate change (and human vulnerability) by undermining the natural regulation of greenhouse gas emissions, it is impossible to address one without tackling the other. Ecosystems-based approaches that work with, rather than against, nature must therefore be integral parts of adaptation and mitigation efforts.

As noted in Part 3, climate change has begun to play a role in triggering international migrations. That role will increase as temperatures rise and insolation, desertification, rainfall, fluvial and coastal flooding, water scarcity and eutrophication create more hostile and disease prone environments for households and businesses; disturb and restrict education; interrupt global supply chains; and exacerbate social and economic inequality. As also discussed in Part 3, climate change has already had severe impacts on chronic and infectious diseases in Millennial economies.

Box 19: The true believer

It is the true believer's ability to 'shut his eyes and stop his ears' to facts that do not deserve to be either seen or heard which is the source of his unequalled fortitude and consistency. He cannot be frightened by danger nor disheartened by obstacles nor baffled by contradictions because he denies their existence.

Hoffer (1951)

Within the lifetimes of the Millennial generation, current patterns of economic growth may pose existential choices (particularly in marginalised populations) between the end of the world as they know it and the end of the world.[97] Meanwhile, every day brings fresh evidence that, in Hoffer's words (Box 19), the enemy is the 'true believer' who argues that climate change is a myth, and that the loss of biological diversity is a conspiracy (and epidemiological disasters can be cured with injected bleach). The greatest challenge to those who believe they may know some of the answers will be to persuade those who know fewer (or none) that, if they hurry, it may just not be too late to wake up before the Doomsday Clock runs its course.[98]

97 The Millennial generation includes people born around the turn of the 20th/21st centuries.

98 The Doomsday Clock defines the likelihood of global man-made catastrophes (in the collective opinion of members of the *Bulletin of the Atomic Scientists*).

SOCIAL INTERVENTIONS IN HUMAN DEVELOPMENT

Human development in Millennial economies is a function of environmentally sustainable growth and targeted interventions in health, education and other social sectors. In Part 3 we concluded that health and education are fundamental conditions of sustainable growth, lynchpins of coherent societies and foundations of durable polities. While both help determine the quality of life, health is a condition of life itself[99] and, because malnourished, unhealthy children cannot learn efficiently,[100] an enabling condition of education. The EMS implicitly agreed that, in most Millennial economies, healthcare merits a higher allocative priority than education.

Health and healthcare issues and options vary enormously between Millennial economies in terms of morbidities, healthcare systems, the relative emphasis on personal and public health and recent experience of the COVID-19 pandemic, including the extent to which efforts were made to coordinate or integrate personal and public healthcare – and with what success. In Millennial and other economies, health outcomes are partly determined by the extent to which populations play significant roles in managing their own well-being; partly by social factors;[101] partly by access to and the adequacy of personal healthcare; and partly by the availability, quality and affordability of public healthcare infrastructure, training and technology.

In what are now advanced economies, the critical importance of public health was increasingly acknowledged in the 19th and 20th centuries. Yet in most Millennial economies it has been a perpetual bridesmaid. The asymmetrical status of public health and clinical care was graphically underscored during the COVID-19 pandemic when, in most Millennial (and many other) economies, weak planning, budgeting and coordination marred the effectiveness of public health initiatives and personal healthcare services.

The pandemic also underscored widespread weaknesses in social interventions on behalf of three age-defined population cohorts, each of which, as discussed in Part 3, have specific health issues:

- early life (EL) populations (0–3 years), who depend on parental/other adult care and have well-known health risks;
- young populations (11–24) not in employment, education or training (NEET) who cannot find or retain paid jobs, and have distinctive and largely neglected health risks;
- physically and/or cognitively dependent end-of-life (EOL) populations (65 plus) with multiple health risks.

Box 20: The seven ages of man

At first the infant,
Mewling and puking in the nurse's arms;
And then the whining school-boy, with his satchel
And shining morning face, creeping like snail
Unwillingly to school. And then the lover,
Sighing like furnace, with a woeful ballad
Made to his mistress' eyebrow. Then a soldier,
Full of strange oaths, and bearded like the pard,
Jealous in honour, sudden and quick in quarrel,
Seeking the bubble reputation
Even in the cannon's mouth. And then the justice,
In fair round belly with good capon lin'd,
With eyes severe and beard of formal cut,
Full of wise saws and modern instances;
And so he plays his part. The sixth age shifts
Into the lean and slipper'd pantaloon,
With spectacles on nose and pouch on side;
His youthful hose, well sav'd, a world too wide
For his shrunk shank; and his big manly voice,
Turning again toward childish treble, pipes
And whistles in his sound. Last scene of all,
That ends this strange eventful history,
Is second childishness and mere oblivion;
Sans teeth, sans eyes, sans taste, sans everything.
William Shakespeare, *As You Like It* **(1599)**

99 Whereas the Biostatical Theory of Health (BST) posits that a person is healthy if and only if all natural organs function normally given a statistically normal environment (Boorse, 1997), the Holistic Theory of Health (HTH) posits that a person is healthy if and only if (given standard circumstances) he/she has the ability to *attain his/her vital goals* (Nordenfelt, 2007).

100 Malnourished children living in poor housing may be exposed to all manner of communicable and non-communicable diseases, among other disadvantages, and therefore cannot learn efficiently or effectively.

101 *Economist* (Feb 2022).

Some attributes of these cohorts may be more pronounced in Millennial than in developing or advanced economy populations: (i) EL populations are relatively smaller in Millennial than developing economies (particularly in sub-Saharan Africa), although generally larger than in advanced economies; (ii) NEET populations are proportionately larger in Millennial than in advanced economies but may be proportionately smaller than in some developing economies; (iii) levels of real and disguised underemployment in Millennial economies are generally higher than in advanced economies and generally lower than in developing economies; (iv) EOL populations with relatively lower mortality and longer life expectancies are larger in Millennial than in developing economies.

Addressing the relative priority of early childhood investments and the foundational priority of maternal and infant healthcare at the 2014 EMS symposium, Nobel laureate James Heckman emphasised that intelligence and social skills are set at an early age; that early investment produces the greatest returns in human capital; that national advantage[102] will come from helping the disadvantaged; and that quality economic returns come from quality investments in early childhood development (see Box 21).

It is currently impossible to know whether returns on investment in NEET populations correspond to returns on investments in early childhood in Millennial economies. Studies by UNFPA (2010) and ILO (2022) are inconclusive on this point but there is evidence that some Millennial economies (e.g. China, India) are more likely than advanced economies to adopt innovative approaches to human capital development. Moreover, the growing literature on frugal innovation refers to numerous innovative healthcare initiatives in Millennial economies and suggests that the pace of invention, adaptation and adoption processes will accelerate.[103]

Box 21: Investing in early life

The highest rate of return in early childhood development comes from investing as early as possible, from birth through age five, in disadvantaged families. Starting at age three or four is too little too late, as it fails to recognize that skills beget skills in a complementary and dynamic way. Efforts should focus on the first years for the greatest efficiency and effectiveness. The best investment is in quality early childhood development from birth to five for disadvantaged children and their families.

James J. Heckman, 7 December 2012

The emotive economic, social, philosophical and religious issues associated with end-of-life care for the most elderly were deliberately excluded from the EMS agenda, not because they were unimportant but because their scope and complexity would have demanded resources not available to the EMS.[104]

Broad generalities about the pivotal importance of personal and public healthcare and the needs of EL, NEET and EOL populations in Millennial economies mask contrasting capabilities, policies and systems reflected in responses to and outcomes of the COVID pandemic.[105] But they do not disguise the realities that (i) the pandemic exposed urgent needs to strengthen public health delivery systems in Millennial economies and that (ii) Millennial[106] (and advanced) economies that had absorbed lessons from previous pandemics generally outperformed others.[107]

102 Although Heckman's term was 'American' advantage, the broader reference ('national') is appropriate.

103 See Bhatti et al. (2018), Hindocha et al. (2021), Prime et al. (2017), Radjou and Prabhu (2015).

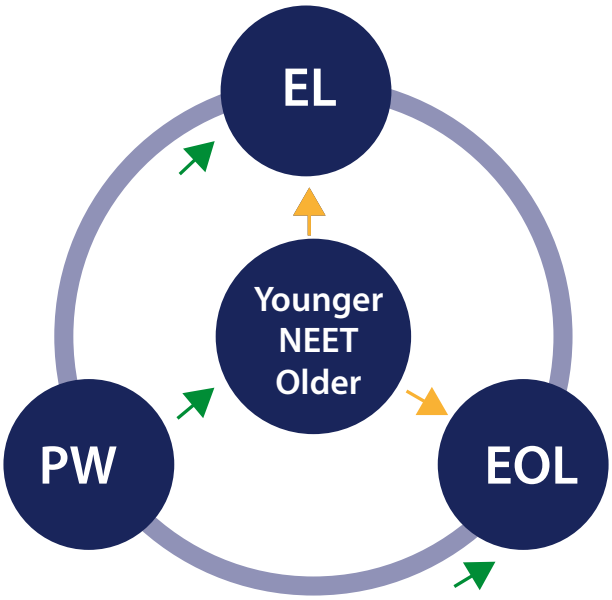
104 Primarily because the topic would encroach on participants' comfort zones and partly because it required a more exhausting treatment than the EMS could offer. It was nonetheless an elephant in the room, particularly in the symposium on Ageing (2015). There was, however, broad agreement that the implications of rising longevity and expanding medical capabilities would have to be addressed by future generations.

105 See Schanz (2019).

106 Notably in Southeast Asia.

107 Notably SARS and MERS. See Feitelson et al. (2022).

Figure 14: Hypothetical Opportunities for Social Support



From \ To	Post-Work	Early Life	End-of-Life	NEET (Younger/ Older)
Post Work				
Early Life				
End-of-Life				
NEET				

Box 22: Barefoot doctors

The barefoot doctor programme was a low-cost strategy that achieved high health outcomes … Today, many low- and middle-income nations are trying to build strong primary care systems that provide health promotion, disease prevention, accurate diagnosis, effective treatment, timely referral, and management of noncommunicable diseases – such as hypertension, diabetes, even some cancers and mental health problems. Unfortunately, lack of highly trained staff is a major bottleneck in building such systems.

My idea of a 21st-century barefoot doctor is someone with two to three years of training post-junior high school, who will be enabled with artificial intelligence and big-data-assisted decision support. Apps or web-based tools will use data analytics to prompt the doctors to ask the right questions, supply the likelihood of various diagnoses, and recommend treatment. It's an algorithm decision tree, but supported by big-data analysis.

Twenty-first-century barefoot doctors will be most suitable in areas that are remote and rural and have older people left behind in the global wave of migration to cities. These doctors will need to be respected as the foundation of the healthcare system. They will also need to earn a decent income – although income alone is not what will keep them in their jobs. If 21st-century barefoot doctors become a reality, it could transform today's treatment-centric healthcare systems into systems that keep people healthy – and at scale.

Chi-Man (Winnie) Yip (2018)

The experience of some Millennial economies (e.g. China, India) suggests that efficient and effective healthcare embraces aspects of both personal and public healthcare agencies.[108] As pointed out in Box 22, those experiments, having been abandoned in China in the 1970s, have been adapted and adopted in other Millennial (and some advanced and developing) economies, with (it must be said) variable but sufficient success to encourage other innovations in integrated healthcare.

Versions of the framework in Figure 14 could be used to consider a variety of hypothetical social interventions at different stages of the human life course. This version illustrates opportunities to address some of the healthcare/social care needs of EL, NEET and EOL cohorts by drawing on the potential capabilities of (younger and older) NEET and post-work cohorts.[109]

Existing research on integrated healthcare based on the experience of advanced economies[110] yields some potentially relevant lessons for Millennial economies but in this sphere, as in others, many organisational and practice innovations originate in Millennial economies.

There is a lively debate between advocates and opponents of integrated care strategies on how to manage organisational, educational and financial constraints and cultural differences between the sectors. Although there is no universal template, current evidence suggests that improved integration promises substantial benefits to patients and wider populations.

As the EMS series unfolded between 2009 and 2018, pre-existing cracks between the most and least successful Millennial economies deepened to the point at which they could not be dismissed as aberrations. It became increasingly obvious that some of the brightest prospects of the noughties had faltered under endogenous and exogenous pressures, with the result that Millennial economies covered a more diverse spectrum at the end of the decade than at the beginning. By 2020, (i) the cohort was less coherent; (ii) it was difficult to speak about its weakest and strongest members in the same breath; and (iii) its economies faced potentially contrasting futures.

108 'Fifty years ago, during the Cultural Revolution in China, a cadre of 'barefoot doctors' – some 1.5 million peasants who received intensive three-to-six-month training in anatomy, bacteriology, birth control, maternal and infant care, and other topics – were dispatched to provide basic healthcare for their rural communities. Even in the midst of the revolution's social upheaval, this low-tech medical corps (named for the fact that many worked in their own rice paddy fields when they weren't tending to their *neighbours) was highly successful, significantly reducing infectious disease and boosting life expectancy.*' Harvard Public Health (2018).

109 The latent capabilities of those cohorts could also power social interventions in other fields (e.g. developing and deploying new capabilities to address infrastructure construction and maintenance, mimicking Roosevelt's initiatives in the late 1930s).

110 Pettigrew et al. (2021).

HUMAN DEVELOPMENT REDUX

The future viability (and, conceivably, long-term existence) of most nations – including Millennial, other emerging, developing and many advanced economies – largely depends on whether the world is able and willing to recognise and implement two fundamental lessons derived from the COVID-19 experience. One, as suggested earlier, is that few if any of its most vexing and seemingly intractable (or 'wicked') problems can be mitigated or resolved without effective international cooperation. The other is that the future prosperity and even survival of nation states hinges on their resilience, which is to say their capacity to anticipate, manage and adapt to natural and unnatural shocks.

The pandemic demonstrated that, in the face of shared, potentially overwhelming threats, every nation on the planet must create, refine and implement national resilience strategies to improve their chances of surviving natural, unnatural, domestic or exotic shocks[111] associated with, inter alia, climate change, diminishing biological diversity, geo-economic events and geopolitical instability. In December 2022, only two Millennial economies (Poland and Turkey) had produced strategies that shared the unifying purpose of preparing nation states to deal with known and unknown threats and surprises (Box 23).

Box 23: National resilience strategies
In December 2022, countries with national resilience strategies included Australia, Canada, Czechia, Denmark, Estonia, Finland, France, Hungary, Iceland, Ireland, Israel, Japan, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, the UK and the United States.

The road to resilience, like the road to hell, is paved with good intentions. But good intentions cannot negate shocks like the 2007–08 crash, the near-global decline in productivity after 2010, the COVID-19 pandemic and the near-collapse of a rules-based consensus that was in bad shape in 2008 and worse shape in 2022.

Prospects for Millennial economies have long been linked to institutions, laws and regulations that foster domestic and foreign investment and productivity, sufficient economic diversity to avoid excessive import dependency, and policies and processes that attenuate the impact of external and domestic shocks. Not long after the financial crisis of 2007–08, Abiad et al. (2012) found that about 60% of improved performances by Millennial economies in the noughties could be attributed to sound policies and the other 40% to less frequent, intense and damaging shocks than had occurred in preceding decades.

As Millennial economies grapple with formidable and perhaps existential challenges, they must focus on the reality that national emphases on human development are both right and smart.

They are *right* because governments have ethical obligations to manage national economies in the collective interests of whole populations and to enable communities to acquire hard and soft workplace skills on which future productivity will depend. They are *smart* because there are umbilical links between human development and human capital in the form of: (i) propensities to save, invest, take entrepreneurial risks, manage human resources and meet changing demands for workplace skills and techniques in the contexts of turbulent international (and, in many cases domestic) environments; (ii) growing demands for military and public safety expenditures; (iii) demand for investments in renewable energy; (iv) environmental protection, mitigation and adaptation; and (v) the long-term effects of the financial shock of 2007–08, the extended shock of declining productivity in 2010–20 and the pandemic shock of 2019–21.

111 See Shakespeare (1603).

In the current decade, all Millennial economies (with statist, market-based and mixed systems) will face insistent pressures on public expenditures with slow returns on investment. But health and education, unlike most sectors, deliver benefits by improving the quality of life *and* accumulating economic benefits through human capital formation. Moreover, there is ample evidence that underinvestment in health and/or education generates long-run costs in the form of less-fulfilled able-bodied, skilled and adaptable workers.

The not-so-good news is that even if, in the rest of this decade, the world contrives (or is lucky enough) to avoid major existential shocks, solutions to global issues will depend on the elusive goals of global cooperation and the progressive creation of more resilient economies. The good news is that the Doomsday Clock is still ticking.

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