



Health Economics in a World of Uneconomic Growth

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Abstract

Multiple, accelerating and interacting ecological crises are increasingly understood as constituting a major threat to human health and well-being. Unconstrained economic growth is strongly implicated in these growing crises, and it has been argued that this growth has now become “uneconomic growth”, which is a situation where the size of the economy is still expanding, but this expansion is causing more harm than benefit. This article summarises the multiple pathways by which uneconomic growth can be expected to harm human health. It describes how health care systems—especially through overuse, low value and poor quality care—can themselves drive uneconomic growth. Health economists need to understand not only the consequences of environmental impacts on health care, but also the significance of uneconomic growth, and pay closer attention to the growing body of work by heterodox economists, especially in the fields of ecological and feminist economics. This will involve paying closer heed to the existence and consequences of diminishing marginal returns to health care consumption at high levels; the central importance of inequalities and injustice in health; and the need to remedy health economists’ currently limited ability to deal effectively with low value care, overdiagnosis and overtreatment.

Key Points for Decision Makers

Accelerating ecological crises suggest that economic growth may have become “uneconomic”—whereby the harms of a growing economy outweigh its benefits.

Uneconomic growth is likely to have profound implications for human health; yet health care systems can also contribute to this phenomenon.

Health economics need to acknowledge the challenge of uneconomic growth, and revisit some of its key techniques and assumptions in response.

1 Economic Growth and Uneconomic Growth

“With our bottomless appetite for unchecked and unequal economic growth, humanity has become a weapon of mass extinction”.

So said Antonio Guterres, United Nations Secretary General, at the COP 15 UN Biodiversity Conference in Montreal [1]. Recent assessments show that humanity has now transgressed six of nine “planetary boundaries”, pushing us outside a safe ecological operating space [2]; while accelerating climate change is pushing us into “uncharted territory” [3]. Yet the recent New Delhi G20 Leaders’ Declaration was more concerned that “cascading crises have posed challenges to long-term growth”, which remains “...below its long-run average” [4]. Our leaders appear to be as committed to economic growth as ever, yet no longer seem to be fully confident of its dependability or even its desirability. This *Current Opinion* explores what it might mean if we have passed the point at which economic growth does more harm than good; it asks what this would mean for health and health care; and explains why health economists should care—and what we might do about it.

Concerns about the consequences of unfettered economic growth date back to the nineteenth century [5], and have been explored analytically since the 1970s [6]. Growth has long been associated with declining absolute poverty in most

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regions of the world, and for many is regarded as a prerequisite for continuing technological innovation. Yet the wealth of the world's very richest people has consistently grown much faster than that of average people for many decades [7] (Table 13.1 p.686); and even though global between-country income inequality has fallen since 1980, within-country income inequality has consistently risen [8]. An increasing range of voices now question whether growth is, in fact, continuing to make lives better for many around the world. In many high-income nations the long trend of improving life expectancy and health began to stall after 2012 [9]. In the USA, life expectancy actually went into reverse prior to the COVID-19 pandemic, driven in part—but not exclusively—by that nation's opioid crisis, with adverse mortality trends now seen both in midlife and older Americans [10]. There is good evidence now that these health trends are being caused by the particular economic design—austerity and neoliberalism—that was widely implemented after 2010 [11].

Crucially, the worsening multidimensional ecological crises humanity now face (climate change, biodiversity loss, plastics and chemical pollution, etc.) all increasingly impact negatively on human health and all are tightly related to past and present economic growth [12, 13].

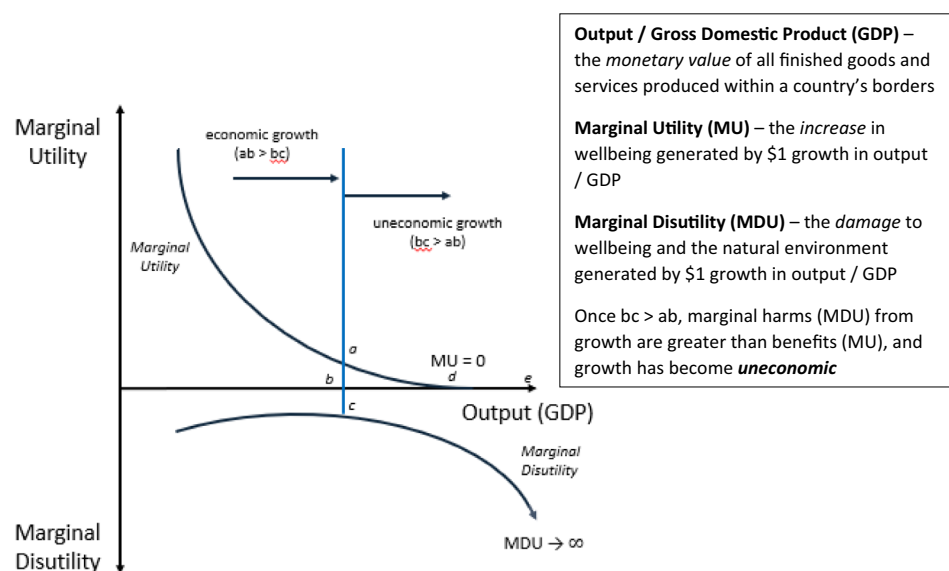
The ecological economist Herman Daly provided a powerful framework with which to consider this problem (Fig. 1) [14]. In the early period of economic growth, increasing production and consumption yielded large *marginal utility* to society (MU)—better nutrition, housing, education, etc. These benefits were partly offset by negative consequences (*disutility*, MDU)—for example, the polluted, overcrowded slums of the early industrial revolution. Better technologies and policies reduced the disutility of growth; yet the law of diminishing returns meant that the gains from further growth—marginal utility—steadily fell over time as basic

needs were satisfied. More recently, the marginal disutility of growth has steadily increased—its environmental and social harms have grown rapidly, even as the marginal utility of growth continues to fall. According to Daly, once the marginal disutility of growth exceeds its marginal utility, economic growth becomes “uneconomic” growth—the economy is still expanding in size, but, in doing so, is causing more harm than good.

Our key measure of economic growth—Gross Domestic Product (GDP)—aggregates the monetary value of goods and services traded on the market for a price. It thus includes the dollar value of coal mined and burned, but does not account for the harms this causes through biodiversity loss, particulate matter air pollution or greenhouse gas emissions. But GDP does count as positive “value” the costs of dealing with these harms: thus, spending on medication and hospital admissions for respiratory disease caused by air pollution increases GDP, as do the costs of rebuilding a town destroyed by climate change-induced bushfire or flooding. Economists have termed these costs “defensive expenditures” or “failure demand”—the costs of responding to the avoidable damage and harm caused by the current economic system, which perversely “grow” the monetary value of GDP [15].

It is one thing to point out the theoretical possibility that economic growth might become uneconomic; it is clearly quite another to determine empirically whether this point has been reached. Starting with Preston's work, which showed that the greatest gains in life expectancy were made by increases of the GDP of the poorest nations [16], repeated efforts with many different indices and measures show similar results. Higher GDP in poor nations drives rapid improvements in most measurable facets of human well-being; but above a certain GDP or income threshold,

Fig. 1 Economic and uneconomic growth [14]. Reproduced with permission of Herman Daly/St. John's University



growth brings much more limited improvements for wealthier nations [17, 18]. Yet demonstrating that economic growth has now become *uneconomic* growth requires a stronger demonstration of active harm (not just slow or no improvement). Much focus has understandably been paid to the environmental harms of economic growth; however, health and health care can provide potentially important windows onto the human impacts of uneconomic growth.

2 How Uneconomic Growth Harms Health

If economic growth had indeed given way to uneconomic growth, deteriorating health outcomes—such as faltering or falling life expectancy—would be one of the most important negative impacts we might expect to encounter. Indeed, the current and future health consequences of the environmental pollution and anthropogenic climate change driven by humanity’s economic growth pulse are increasingly well understood. Globally, pollution is responsible for some nine million (one in six) deaths per year [19]. Climate change impacts on health are increasingly visible, from the health effects of extreme weather events to increasing transmission risks of vector-borne pathogens [20]. Recent catastrophic flooding in Pakistan vividly illustrates the cascading health impacts of climate change: food shortages, infectious disease outbreaks, and destruction of health infrastructure, all on a massive scale [21]. But these environmental harms are by no means the only transmission mechanisms through which economic growth causes “uneconomic” harms to human health. Current patterns of production and consumption drive large parts of the burden of non-communicable diseases in high- and low-income countries alike. This includes the role of agriculture, industrial food production and marketing in driving the global syndemic of obesity, diabetes, cardiovascular disease and cancer [22]; and the well understood harms of alcohol, tobacco, gambling and other legal but addictive products. Meanwhile, the experience of the COVID-19 pandemic has raised awareness of the future risks of zoonotic spillovers, driven by the increasing encroachment of human land use into previously isolated reservoirs of animal pathogens [23]. These and many other “commercial determinants of health” [24], along with the very structure of employment, incomes and the wider economy [25], directly drive poor health outcomes and generate avoidable failure demand for health care. Yet the ability of nations and communities to chart a path out of this “consumptagenic” system of harmful overconsumption and production involves confronting powerful and wealthy interests whose patterns of ownership and influence transcend national borders [25–27].

3 Health Care and Uneconomic Growth

While uneconomic growth would clearly be expected to have a harmful impact on human health, is it possible that health care might itself contribute to the phenomenon of uneconomic growth? Could expansion of the very industry which seeks to treat and care for illness—which accounts for some 10 % of global GDP—also be a part of the processes undermining human wellbeing which are at play in “uneconomic” growth? This may be a particularly pertinent question given that health care expenditure and resource use has typically grown faster than the rest of the economy in recent decades [28].

Like every sector of the modern economy, health care has an environmental footprint, and makes a measurable contribution to various aspects of the unfolding ecological crisis. Estimates suggest that health care contributes between 4 % and 6 % of global greenhouse gas emissions [29], and has various other direct environmental impacts, especially plastics and pharmaceutical pollution [30]. Yet health care might also contribute to uneconomic growth by more direct routes than its ecological footprint. A growing health care sector might cause direct health harms through poor quality care, overuse, overdiagnosis and overtreatment—harming or subtracting value from patients even while output and expenditure appear to be increasing [30]. For example, Braithwaite et al suggest that some 10 % of care delivered in the Australian health care system (and other high-income countries) is actively harmful, and another 30 % “low value” or wasteful (not necessarily harmful, but providing little or no benefit) [31]. The prevalence of harmful adverse events remains stubbornly high worldwide: for example, over 42 million incidences of seven common adverse events were observed among 421 million hospital admissions globally [32]. Unnecessary care exposes patients to these risks of harm, but offers little or no corresponding benefit [30]. Similarly, overuse of antibiotics in both health care and agriculture causes antimicrobial resistance, which results in less demand for further human and animal health care. There is growing recognition that wasteful and/or harmful health care is an ethical failure, not just as a grave source of economic inefficiency [33].

Daly’s theory of uneconomic growth [14] explained how the earlier phases of growth brought large marginal benefits, but that diminishing returns could be expected to increasingly reduce further gains over time. While the scope and ability of modern medicine to treat disease has clearly expanded over the decades, it would not be surprising to see a similar process of diminishing marginal returns at work within health care. The most effective health care interventions are frequently also the cheapest. Classic examples of this might include vaccination for preventable infectious diseases, bed nets for malaria prevention, oral rehydration salts

for treating diarrhoea, or cataract surgery. These are also interventions with low risks of side effects or unintended negative consequences. Over time, these highly cost-effective interventions have been joined by more expensive interventions which provide smaller direct health gains (both for individuals and for smaller patient populations), but which have higher risks of unintended consequences—side effects, risks of overdiagnosis, scope for health care-acquired infections, etc. As time passes, the marginal utility of a growing health care system falls, while its marginal disutility (as per Fig. 1) increases. Within the health care sector itself, the analogous point at which $bc > ab$ (after which growth is “uneconomic”) would be the point at which the overall harms of additional health care consumption exceed their benefits. The possibility of such a situation was asserted decades ago by Ivan Illich with his concept of “counterproductivity”, which “...exists whenever the use of an institution paradoxically takes away from society those things the institution was designed to provide” [34] [C6 p.215], and also by Max-Neef when he described limiting and counterproductive “negative satisfiers” [35]. Arguably, we need to move away from policies and interventions to achieve health improvement that create negative consequences for other outcomes (e.g., ecology), and instead prioritise those ‘super policies’ which have simultaneously beneficial impacts—or ‘co-benefits’—across sectors; uncontentious examples include integrated public and active transport, or improved thermal insulation for rented housing [36].

4 Uneconomic Growth and Global Health Inequity

While the historic gains from economic growth have disproportionately flowed to today’s high-income countries, more modest gains in low- and middle-income countries (LMICs) have been partly offset by greater negative consequences. The impacts of pollution and climate change are more severe in nations with lower rather than higher incomes [19, 37]. Wildfires, floods and other climate change-related disasters carry greater health, economic and social burdens in low-income countries where almost all such losses are uninsured. They are also particularly vulnerable to increased transmission of diseases such as Dengue fever and malaria, especially in South East Asia and Africa [37]. Even in environments of deep resource scarcity, powerful commercial determinants are at work to cause harm to the health of the poor. More than one-third of the global disease burden caused by non-communicable diseases—cardiovascular disease, diabetes, cancer, and mental health—is borne by the world’s poorest billion, of whom more than 90 % reside in rural areas of Sub-Saharan Africa and South Asia [38].

Yet even while many still lack access to essential care, overdiagnosis and unnecessary treatment is widespread even in LMICs—causing harm to patients and misusing scarce resources [39, 40]. For example, the costs of malaria overdiagnosis in Sudan were estimated to be US\$86 million in one year alone [41], while substantial overdiagnosis of thyroid cancer has been observed in China and India [42, 43]. Overdiagnosis in LMICs causes grave misallocation of resources to deal with preventable disease burden, and—in a bitter irony—potentially inflicts catastrophic yet pointless out-of-pocket health care costs on those least able to afford them. Growth in global health expenditure, activity and new technological innovations have been accompanied by growth in opportunities for iatrogenic harms due to both poor quality care and overuse [30], making more comprehensive approaches to their prevention a pressing priority for global policy [44].

5 Uneconomic Growth and Ecological Health Economics?

What can health care systems—and health economists—do to prevent or mitigate the possible harms from uneconomic growth in the economy and health care systems? The growing focus within health care systems on the climate and ecological crisis will increasingly force us to confront this question. Better measurement and analysis of human health outcomes provides a crucial opportunity to determine empirically whether the potential harms of uneconomic growth are manifesting. Yet the deep ambiguities and contradictions between negative externalities, defensive expenditures, measured GDP, commercial determinants, “welfare” (encompassing the broad sweep of social outcomes) and population health raise serious questions about the ability of traditional forms of economic evaluation to provide effective guidance in this new reality. The last two to three decades have seen a growing distance between “mainstream” health economic evaluation for health technology assessment, and the application of economic tools to other aspects of health, especially at the intersection of health with the wider economy. It has typically proved difficult to deploy health economic analysis to support the development of *Health in All Policies*—WHO’s centrepiece approach to yielding synergistic health benefits from policy in other sectors [45]. Indeed, the WHO Council on the Economics of Health for All—chaired by Marianna Mazzucato and tasked with mapping out a new vision for future economies to deliver health and well-being as their primary goal—did not include a single health economist as a member [46]. Even within deeply mainstream approaches, health economics and health economists are now very far removed from macroeconomics and

wider economic policy development concerns [28]. This has been brought into the sharpest of relief by the surprisingly limited contribution of health economics to critical decision-making around the trade-offs between public health protections and wider economic impacts during the COVID-19 pandemic [47, 48].

Health economists must look to the growing heterodox economics movement to make real progress here [49–51], something we have previously been reluctant to do [52]. Most contemporary health economists sit comfortably in the mainstream of neoclassical economic thinking, with its self-defined task of studying “...human behaviour as a relationship between ends and scarce means, which have alternative uses” [53]. Yet over several decades, “heterodox” economic schools such as ecological economics, feminist economics and well-being economics have secured increasing acceptance of a quite different vision of economics and the economy. This view sees the economy (and hence economics) as humanity’s *social provisioning* system, the purpose of which is to meet society’s needs and to achieve human well-being and flourishing within biophysical sustainability constraints [50, 54, 55].

We must therefore recognise that that the proper purpose of the economy is as the provisioning system by which to meet human needs; and that the proper goal of economic policy is to support and promote human well-being and prosperity [50]. Similarly, the proper goals of health care systems are to provide healing, promote health, and alleviate suffering with care and dignity; growth and profits are—at most—second-order goals only. Proper recognition must be given to the presence of diminishing marginal returns in health care, and to the central importance of inequalities; in high-income nations and LMICS alike, the greatest unrealised benefits of health care still lie in improving universal access to cost-effective primary health care. A significantly more concerted effort to measure the harms of low-quality care, overuse and overdiagnosis is urgently required [40]. The relative weakness of economic evaluation and Health Technology Assessment (HTA) in supporting disinvestment from lower value care, and their capture in the service of driving the adoption of new technologies has long been pointed out [54–56, 58]. In a world of accelerating climate impacts and ecological constraints, the science and craft of economic evaluation will have no choice but to become far more focused on managing real resources, driving disinvestment from low-value services, and improving health outcomes through improving equity; and will need to leave its current comfort zone of facilitating the entry of growth-dependent, additive technologies. An expanded vision for health economics is required to better conceptualise, control and regulate the commercial determinants of the syndemics of chronic illness, and the

polluting systems of production, consumption and disposal that damage the health of humans and ecosystems alike. Health economists are not strangers to problems of incommensurability of values and the need for multicriteria evaluation; ecological economists have shown just how important it is to allow for ‘value pluralism’ in evaluating complex interrelationships within and between human and natural systems [59, 60].

We are currently limited by the population health datasets, which conflate health needs with health care supply and demand. For example, the Global Burden of Disease studies are partly based on measures of health care use. This carries risks of being inflated by the ‘medical-industrial complex’, and deflated by a lack of access to services for many populations. If we are to move towards systematically understanding the balance of economic and uneconomic health care provision, we need data on the capacity of populations to benefit from health care (i.e., health needs) rather than a confused picture of health based on health care supply and demand. We also need data that move beyond narrow health outcomes to include all of the consequences and opportunity costs of current provisioning and future options. In essence, there is a glaring need for a global health needs assessment and a global assessment of the current state of economic and uneconomic health care provision.

Health economics possess many relevant and powerful tools to work effectively in this new world, and work is beginning on ways to address the health-health care-environment nexus. Twenty-first century health economics should integrate systematic measurement of both value and of harms (or disutility) across a wide range of outcomes (including ecology, iatrogenic health harms and social harms), and devote more effort into identifying counterproductive or low value areas of health care for priority disinvestment. In doing so, it can facilitate a new conversation about the optimal forms and levels of health care provision to achieve human well-being and ecological survival—and provide leadership to leave behind old habits that no longer serve these goals.

Declarations

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