sanity, humanity and science

real-world economics review

Please click here to support this journal and the WEA

Subscribers: **25,111** **subscribe** RWER Blog ISSN 1755-9472

A journal of the World Economics Association (WEA) 14,468 members, **join**

Sister open access journals*: Economic Thought* and *WEA Commentaries*

back issues

Issue no. 110

April 2025

real-world economics review, issue no. 110
subscribe for free

The 2024 Nobel Prize for Economics: An example of how conventional economics misrepresents reality

Ted Trainer
[University of New South Wales, Australia]

Introduction

The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2024 (economists like to refer to this as a straight Nobel Prize – it isn't) was awarded to Daron Acemoglu, Simon Johnson and James Robinson.[1] According to the press release the prize was awarded for helping "us understand differences in prosperity between nations".[2] Acemoglu and Robinson (2013) are in particular well known for their best-selling book *Why Nations Fail* – why some poor nations prosper while others fail and remain poor. The basic theme is that development depends primarily on whether national institutions have "inclusive" or "extractivist" institutions. The award provoked quite a lot of critical comment. The *Financial Times,* for example, published a piece entitled "The Nobel for Econsplaining".[3]

The argument in the following article goes further. While the factors discussed by Acemoglu and Robinson are significant, they are not the main factors that determine whether or not nations develop or remain poor. The main causes are to be found in the exploitative nature of the global economy, in the taken-for-granted market system and concept of "development", and the action taken to keep these in place. These factors are foundational in capitalist economic theory and practice and give the impression that no other conception or approach to development exists. Their negative consequences for development are sketched and an alternative vision and approach is outlined. The case shows the ideological nature of conventional economic theory, and how it generates highly challengeable interpretations and justifications.

The explanation given in *Why Nations Fail* is to do with the extent to which nations have political, legal, social etc. institutions that facilitate and encourage (conventional) development. As already noted, two basic types of national developmental systems are distinguished. The first labelled "Inclusive" is characterised by institutions which provide rewards and security for innovation and investment, such

1 For critique of the economics prize visit: https://economicsociology.org/2024/10/12/the-economics-nobel-prize-what-is-it-good-for/

2 Visit: https://www.nobelprize.org/prizes/economic-sciences/2024/press-release/. For a more detailed account of the reasons for the award see: https://www.nobelprize.org/uploads/2024/10/advanced-economicsciencesprize2024.pdf.

3 Visit: https://www.ft.com/content/1e2584d6-65ef-46de-bfb2-28811be65600. See also: https://www.ipsnews.net/2024/10/another-nobel-anglocentric-neoliberal-institutional-economics/ and: https://reddytoread.com/2024/10/16/why-nobelists-fail/ and https://jacobin.com/2015/10/robinson-acemoglu-inclusive-extractive-poverty-wealth/.

as patent protection, legal systems for settling disputes, and freedom for investment. (2013: 76) The second is labelled "Extractive" because institutions are designed to extract income and wealth from one subset of society to benefit a different subset. The book's thesis is that "The ability of economic institutions to harness the potential of inclusive markets, encourage technological innovation, invest in people, and mobilize the talents and skills of a large number of individuals is critical for economic growth. Explaining why so many economic institutions fail to meet these simple objectives is the central theme of this book." (2013: 81) "World inequality today exists because during the nineteenth and twentieth centuries some nations were able to take advantage of the Industrial Revolution and the technologies and methods of organization that it brought while others were unable to do so." (2013: 271)

Space is given to arguing against alternative theories. For instance "... It is not geography, culture, or the ignorance of its citizens or politicians that keep the Congo poor, but its extractive economic institutions. These are still in place after all these centuries because political power continues to be narrowly concentrated in the hands of an elite who have little incentive to enforce secure property rights for the people, to provide the basic public services that would improve the quality of life, or to encourage economic progress. Rather, their interests are to extract income and sustain their power. (2013: 90-91)

This thesis is illustrated at length, through 540 pages, via a great deal of evidence and many case studies, much of it delving into extensive detail on the history of many nations. It is clear and well written, with extensive referencing, remarkably well informed, and easily understood by the lay person.

What then is the problem? It is not that the book agues what seems to be an intuitively obvious finding, hardly remarkable or groundbreaking, let alone worthy of a Nobel prize. The problem is **that it makes no reference at all to the overwhelmingly important reasons "why nations fail", why billions remain "poor" and live in inexcusably appalling conditions.** It dwells on some of the relevant factors but not the main ones, and it gets their causal significance wrong.

Consider these statements.

> "The great differences in world inequality are evident to everyone ... Understanding why these differences exist and what causes them is our focus in this book." (2013: 41)
>
> **"**The most common reason why nations fail today is because they have extractive institutions." (2013: 368.)
>
> "Extractive economic and political institutions, ..., are always at the root of this failure ... In all these cases the basis of these institutions is an elite who design economic institutions in order to enrich themselves and perpetuate their power at the expense of the vast majority of people in society. (2013: 399)
>
> This theory explains "... the main contours of economic and political development around the world since the Neolithic Revolution." (2013: 429)

These statements make clear that a causal mechanism is being identified, and that it is located within poor countries. In the many cases discussed it is quite true that conditions are not conducive to development etc. But the explanation stops there and is therefore highly misleading. **There is no reference to why those mechanisms are there, who maintains them and who are the ultimate**

and major beneficiaries of them. The main reason why at least half the world's people are poor is because the global economic system has established "extractive" institutions and keeps them in place, in order to siphon trillions of dollars of resource wealth out of poor countries every year. It is the global system which prevents them from escaping this fate. Conventional economic theory and practitioners endorse, legitimise and promote this system. This book is a eulogy for it. It is a Fukuyama-esque end of economic history; if only poor countries would adopt free markets and make conditions attractive to foreign investors development would thrive and poverty would be ended. It is true that there is extraction and there are extractivists, but the book fails to mention that economic theory, economists and the rich world are the main causes, protagonists and beneficiaries of extraction.

At first encounter these claims might seem to be outrageous, so it is appropriate to defend them at some length.

How (conventional) "development" works.

The book's authors do not ask what "development" means. They take it for granted as virtually all economists do that development = getting materially richer, as nations and as individuals. It is about being able to purchase more, increasing the amount of producing, selling and consuming going on, and thus it is about increasing the GDP. This is the "unidimensional" view of development whereby nations move up the slope to be like rich nations. Getting richer is assumed to improve all sorts of other things, such as health and welfare.

Conventional economists show little or no interest in thinking about what might contribute most to quality of life, let alone in measuring it, let alone prioritising developments that might improve it. They ignore the fact that except for health little or nothing that contributes to a high quality of life requires material "prosperity". Consider having adequate food, clothing and shelter, having meaning and purpose, having friends, being valued and appreciated, living in a supportive community, having worthwhile work, being secure from unemployment and poverty, not having to work hard or struggle, a sense of place, a home. These kinds of conditions can in principle be provided to all at extremely low levels of material wealth, production, industrialisation, capital investment, globalisation, IT, international trade, "living standards" and GDP. (See below.)

The basic issue is the way conventional economic theory conceives development. Because it is essentially taken to be primarily about increasing the GDP the focus must be on facilitating more productive activity. This requires investment and because a poor country has little capital it means borrowing and it means attracting foreign investment. The two main domains enabling this are exporting natural physical resources and exporting labour via plantations, mines and factories. Thus, the county must enter the global market place to sell resources, competing against many other poor counties in the same situation. Lacking the capital to set up mines etc., foreign investment must be sought. But investors want access to infrastructures such as railways and ports, so large loans have to be taken out to build these. The common result is not rapidly increasing income to repay loans but the accumulation of very large debt, which seems to be accelerating in recent years. Between 2020 and 2023 the public debt of poor African countries doubled, to 60% of GDP, and rose to almost 75% in Latin America. (UN 2024, Fig 4.)

The debt typically becomes unrepayable. At this point the IMF arranges bailout measures, "Structural Adjustment Packages, which involve granting further loans on certain conditions. These are designed to "get the economy going again" by making the economy more attractive to foreign investors, selling off profitable state-owned enterprises to them, holding down wages and social conditions, imposing savage “austerity” policies, and generally gearing the economy to the interests of the business class.

John Perkins book Confessions of an Economic Hit Man (2023) explains how his task was to persuade nations to take on loans they could never repay. Whether or not this was common practice the consequences were inevitable. There is an abundant literature documenting the damaging effects these measures have on large numbers of poorer people.

This long book makes only two brief references to the IMF, neither of them mentioning these issues. Its actions are seen as valuable, but it and other major international institutions are only criticised for having taken “an incorrect perspective”, that is for not having focused on the “inclusive” vs “extractivist” distinction. (2013: 446-467)

Local elites in poor countries are delighted with conventional development because it provides investment opportunities for them. Banks are happy because they organise the loans and get the commissions. For arranging one loan to Greece Goldman Sachs took a $600 million commission. These days imperialism does not need to send a gunboat to conquer. The Neoliberal triumph identify by Chossudovsky (2004) as enabling “... the greatest wealth transfer in history”, was carried out using computer keys.

The result is that the economies of the poor countries are trapped into providing the rich countries with cheap resources to enable lucrative profits for investors, corporations and banks, while preventing development that would do most to benefit impoverished and exploited masses. Hickel, Sullivan and Zoomkawala (2021) estimate that there is a $2.5 trillion net flow of wealth from poor to rich countries every year. In addition, they pay the cost of the environmental damage caused by the mines, logging, plantations, industrial smog, and the social damage caused by the unsafe work conditions, low wages and inadequate health care etc.

Central in the conventional development ideology that keeps all this in place is the indubitable religious commitment to the miraculous market system. Australian Foreign Minster Wong regularly worships the “rules-based international order”, the most sacred rule being let market forces determine what is produced and who gets it. But in a market system it is the demand of richer players which determines what is produced and who get it. This is why several hundred million tonnes of grain are fed to animals in rich countries every year while around 800 million people are hungry. In a market system it is much more profitable to produce grain for feedlot beef production in rich countries than to sell it to starving Sudanese. It is why cosmetics and cut flowers are produced in Guatemala for export rather than basic food and housing for impoverished peasants. It is why developers in Australia build elaborate dwellings rather than low cost housing for poor people. In a market system these are kinds of ventures that promise most profit to those with capital to invest. As Fernandes points out, the ‘rules-based order’ is a euphemism for empire. (2022.)

However, effort has to go into keeping the global economic system functioning in these ways. Sometimes intervention is required, for instance to keep compliant states to policies that suit the rich and to deal with those threatening to step out of line. Sometimes vast arms sales will suffice; how much oil would the West be getting from Saudi Arabia without these? Sometimes it is necessary to invade and get rid of a leader like Mossadegh threatening our access to oil, or to supply an ally with the weapons to keep down dissidents threatening regimes exporting resources to us. At times it is necessary to kill a Lummba or Gaddafi or Castro (unfortunately 600 attempts, many by the CIA failed there) to prevent deviation. But at other times it is necessary to be selective in support for brutal dictators such as Somoza. He boasted that he always voted with the US at the UN and had no qualms about all the foreign owned plantation land. Roosevelt's Secretary of State, Sumner Welles, once said "Somoza's a bastard!" but Roosevelt replied, "Yes, but he's our bastard." (Wikiquote 2024, Jewish Independent 2016, McAlpine 2016.) Sometimes it is necessary to invade and kill large numbers. The US has attempted "regime change" over seventy times since WW2. People in rich countries could not be enjoying their resource-intensive high "living standards" had these things not been done to secure their empire.

The book attributes the failure of states to their rule by extractivists, but what the book does not draw attention to is the fact that at least many of them are in power because the global rich put them there, or helped the Somozas and Pinochets to remain there, because they enabled "normal" economic development. The most culpable extractivists are to be found among rich world corporations, banks and IMF officials. Above all the book fails to identify who the major extractivists are now.

It is true that, as this book shows, institutions within a nation which facilitate or thwart conventional development are indeed causal factors contributing to outcomes such as state "failure" and mass poverty, but they are not the dominant causal factors. They are not, as the book's title claims, "...the origins of poverty" today. The overwhelmingly important causal factor today is the unjust and predatory global economic system that all nations are trapped in, a system which forces poor countries to enable the net flow of vast quantities of wealth to rich countries and to forego development in the interests of their people.

Thus, the book is an elaborate eulogy for capitalism. That is the right way to develop. The implicit message to poor countries throughout is that if you do economics this way you will prosper as we have. Just enable and encourage the few who own most of the capital to invest in whatever will most increase their already vast quantities of wealth, provide them with secure legal etc., conditions and incentives, and the GDP will grow. But there are few problems with this faith now, the main one being that the very last thing the planet needs is more growth. (See below.)

Thus, the book makes no reference to all to the main "...origins of poverty" today. It's not that it deliberately seeks to conceal or mislead. It's that conventional economists seem to be incapable of understanding that what they take to be economics is only capitalist economics, and what they take to be development is only capitalist development. Apparently, they cannot gasp that there might be other kinds. The book and the awarding of the prize reveal conventional economic theory to be a way of interpreting, a deeply entrenched, powerful and misleading ideology which advocates and legitimises.

One way it does this is by analysing in terms of only one factor, monetary value, meaning it fails to take into account many factors that are important in the production, consumption, exchange and distribution of goods and services, in the development of systems for carrying out these processes, and for assessing their desirability. Factors such as environmental and social damage are conveniently classified as "externalities", that is not really economic phenomena and therefore ignorable. Nor are moral and justice considerations relevant to economics, such as the psychological damage caused by unemployment and poverty or the destruction of whole towns when corporations relocate to China. If capital can't maximise profits employing people here it is alright to throw them onto the scrap heap.

Another major premise is the conviction that an economy must be based on the market system. Another is that it is in order and desirable that what ventures are developed and what is produced are best determined by what a few with capital to invest think will maximise their wealth, as distinct from what might be best for society or its eco-systems. Another is that investors are admirable, making their capital available to benefit society; the fact that they get large incomes without having to do any work is disregarded, except when ordinary people try it.

These are among the ways conventional economic theory warps thinking and deceives, making highly undesirable practices seem normal, justified and morally acceptable when in fact they legitimise "extractivism" by the rich. This book and the awarding of the "Nobel prize" provide remarkable illustrations of how taken for granted and dominant the ideology is.

The alternative: "Appropriate" development.

There is now a strong case that the global economic system has entered a terminal phase, a period of accelerating decline to a time of great troubles. (Trainer 2020.) Rich world per capita lifestyles, resource use and GDP are several times higher than all the world's people could ever rise to. It is the determination to raise them constantly and without limit that is generating all the big global problems now threatening our existence, including the climate crisis, loss of biodiversity and other environmental damage, the deprivation of billions, resource wars and crumbling social cohesion in even the richest countries. Given that the cause of this "poly-crisis" is over-production and over-consumption, the solution has to be large scale degrowth to lifestyles and systems that are far simpler in material terms than those in rich countries today.

The common response to the limits to growth argument is that the pursuit of growth and affluence can continue because better technology and tighter recycling etc. can "decouple" consumption from present resource and environmental impacts. They will allow GDP to go on rising while resource and environmental problems are solved. But there are now large scale reviews showing that this is not happening and is not remotely likely to happen. (Parrique et al. 2019a, Hickel and Kallis 2020, Haberle et al. 2019.)

The problems cannot be solved unless there is enormous degrowth to some form of The Simpler Way (TSW 2024) in which most people live in small, highly self-sufficient and self-governing cooperative communities, in control of local economies that are needs-driven not driven by profit or market forces, and happy to live in materially simple ways. The dramatic reduction this general pattern enables in resource use and ecological damage is illustrated by a study of egg supply carried out by Trainer, Malik and Lenzen (2019.) They found that the dollar and energy cost of supply via backyard pens and small cooperatives was in the region of 1% of that from the supermarket path.

Similar reductions in many other items are possible due to the smallness of scale and proximity and integration of functions. For instance nutrient loops can be closed by taking "wastes to" nearby gardens via animals and methane digesters, thereby eliminating the need for sewer systems, transport, or fertilizer production. The Dancing Rabbit Ecovillage in Missouri reports various material, energy, fuel use, etc. rates around 5-10% of the national average (Trainer 2020a). Trainer (2022) details very low cost ways achieved in homestead and ecovillage situations, including a per capita electricity use rate around 1% of the national household average. The Spanish Catalan Integral Cooperative (Trainer 2018) involves thousands in highly self-sufficient cooperatives providing an extensive range of goods and services while avoiding dependence on the market or the state. Leahy (2009) and Leahy and Goforth (Undated) discuss African movements such as Chikukwa enabling land, labour and traditional knowledge to be devoted to cooperative self-sufficient village development, contradicting futile official policies goading peasants to win export sales.

These communities typically involve high quality of life measures, (Grinde et al. 2018) and there is no need for them to involve any reduction socially-useful high-technologies, universities, medical research etc. (For the detail see TSW. 2023.) The Ecovillage, Transition Towns, Degrowth, Campesino and many other movements today are working for such a transition. Long ago Gandhi saw that the appropriate path for India was communities of this kind. It is now obvious that global resource limits prohibit conventional resource-intensive rich world "development" for all the world's people. Hence the wisdom in his saying "The rich must live more simply so that the poor pay simply live."

There is a strong case that a catastrophic breakdown of the global economy is approaching as capitalism self-destructs. (Trainer 2020b.) This is likely to eliminate any hope of a desirable transition to this alternative form of development, but The Simpler Way represents the only conception of development that makes sense now. Those who see this are not likely to be awarded a Nobel prize by the reigning economic establishment.

References

Acemoglu, D., and J .A.; Robinson, (2013), Why Nations Fail: The Origins of Power, Prosperity and Poverty. Profile. Kindle Edition.

Chossudovsky, M., (2004), The Globalisation of Poverty, London, Zed Books.

Fernandes, C., (2022), Subimperial Power, Melbourne University Press.

Grinde, B., et al., (2018), "The Quality of Life in Intentional Communities". Social Indictors Research 137(2): 625–640.

Haberle, H., et al., (2020), "A systematic review of the evidence on decoupling of GDP, resource use and GHG emissions, part II: synthesizing the insights", Environmental Research Letters, 15**.**

Hickel J. and G. Kallis, (2019), "Is Green Growth Possible?", New Political Economy, April. DOI: 10.1080/13563467.2019.1598964.

Hickel, J., Sullivan, D., and H. Zoomkawala, (2021), "Rich countries drained $152tn from the global South since 1960". Al Jazeera. May 6. https://www.aljazeera.com/opinions/2021/5/6/rich-countries-drained-152tn-from-the-global-south-since-1960.

Leahy, T., (2009), Permaculture Strategy for the South African Villages, Palmwoods, Qld., PI Productions Photography.

Leahy T. S., and M. Goforth, (Undated), Chikukwa and CELUCT: Sustainable Revolution; Permaculture in Ecovillages, Urban Farms and Communities Worldwide, North Atlantic Books, Berkeley, California.

McAlpine,S, (2016), "He Might Be a B@%#d, but He's Our B@%#d", Oct 10. Stay in the Know. https://stephenmcalpine.com/he-might-be-a-bd-but-hes-our-bd/

Jewish Independent, (2016), "Pragmatic, dirty choices", April 8, 2016, No author. https://www.jewishindependent.ca/tag/roosevelt/

Parrique, T., J. Bath, F. Briens, J. Spanenberg, (2019), "Decoupling Debunked. Evidence and arguments against green growth as a sole strategy for sustainability". A study edited by the European Environment Bureau, EEB, July, Brussels, Belgium. https://eeb.org/library/decoupling-debunked/.

Trainer, T., (2018), "The Catalan Integral Cooperative -- The Simpler Way revolution is well underway!", FEASTA Admin, Feb.. 28https://www.feasta.org/author/admin/, and by Resilience, Jan 17. https://www.resilience.org/stories/2018-01-17/the-catalan-integral-cooperative-the-simpler-way-revolution-is-well-underway/.

Trainer,T., (2020a), Dancing Rabbit ecovillage. https://thesimplerway.info/DancingRabbit.html.

Trainer, T., (2020b), "Simpler Way transition theory", real-world economics review, issue no. 91, 96 – 112.

Trainer, T., (2022), "How Resource-Cheaply Could We Live Well?", real-world economics review, issue no. 99, 64 – 79.

TSW (2023), The Simpler Way; The Alternative Society. https://thesimplerway.info/THEALTSOCLong.htm TSW 2024.

United Nations, (2024), A World of Debt Report, https://unctad.org/system/files/official-document/osgttinf2024d1_en.pdf.

Wikiquote, (2024), Talk: Franklin D. Rooseveldt. https://en.wikiquote.org/wiki/Talk:Franklin_D._Roosevelt.

Author contact: tedtrainertsw@gmail.com

SUGGESTED CITATION:
Ted Trainer, "The 2024 Nobel Prize for Economics: An example of how conventional economics misrepresents reality", *real-world economics review*, issue no. 110, March 2025, pp. 2–9, http://www.paecon.net/PAEReview/issue110/Trainer110.

You may post and read comments on this paper at https://rwer.wordpress.com/comments-on-rwer-issue-110/

Why only innovations based on degrowth principles can stop further ecological and social destruction

Felix van Hoften[1]
[Rotterdam University of Applied Sciences and University of Amsterdam]

Rob van der Rijt[2]
[Transversal Professorship Sustainability Transitions, Breda University of Applied Sciences]

Abstract
Conventional, technological innovation in a growth-oriented economy is not the solution to the existential problems we face today but rather the cause of them. It accelerates excessive consumption, depletes the natural environment, and leads to a socio-ecological crisis of which we are yet to understand the full consequences. We need to politicize this indispensable pillar of society because, in its conventional form, innovation is driving us towards a grim future. In this article, we review which conditions for innovation are necessary to mitigate current environmental and social crises. We argue that degrowth principles must lie at the basis of these conditions; using less material and energy in a just and democratic manner to improve well- being for all. We therefore plea that degrowth principles must be adopted as the new foundation for innovation.

Keywords: *Innovation, Degrowth, Planetary boundaries, Ecological economics, Climate solutions, Biodiversity loss.*

1. Introduction

In this paper, we start from the observation that ecological degradation is accelerating worldwide (Fletcher et al., 2024; Bradshaw et al., 2021; Ripple et al., 2017; Cardoso et al., 2020; WWF, 2024) while social indicators showing little or no progress (Sachs et al., 2024). Subsequently, we argue that this degradation is fueled by a socio-economic system driven by economic growth with innovation as its catalyst. We refer to innovation as the development of new products, markets and manufacturing methods and new forms of business organization (a Schumpeterian definition in Hospers, 2005), with the purpose of fueling economic growth, hereafter called ‘conventional innovation’. Conventional innovation drives efficiency, and new types and ‘modern’ series of consumer goods, leading to increasing material extraction and consequently energy, water, and land use, which in turn causes more chemical pollution, greenhouse gas emissions and irreparable biodiversity loss. Can we innovate ourselves out of the ecological and social conundrum we face? We argue that new principles for innovation, where we use ecological economics as foundation and principles of degrowth as

[1] Original draft.

[2] Review and editing.

constructive elements, are imperative. Without that, resolving the current socio-ecological crisis will be hardly possible.

2. Conventional Innovation

Conventional innovation is firmly embedded in our society and dominates public discourse. Godin (2015) posits that it has evolved into a dominant paradigm that permeates policy and daily life. In every aspect of life we are pushed to be innovative; few professions, and even our private lives, are free from the innovation dogma (Russell & Vinsel, 2018). This is because conventional innovation, with its almost exclusively positive framing, is ideologically intertwined with our current cultural and economic paradigm (quotes from Robra et al., 2023): "1. Innovation delivers growth and prosperity for all and is thus inherently good'' (productivism) (Jonsson & Wennerlind, 2023; Macekura, 2020; Schmelzer, 2023); 2. ''Innovation is inevitable and unstoppable'' (determinism). Conventional innovation is occasionally even referred to as ''natural'' (Lösch, 2017) or ''neutral'' (Pansera, 2024).

The ubiquitousness and almost exclusive positive connotation of conventional innovation, Schumpeter saw it as the main driver of progress (1943), serves as a Gramscian construct of cultural hegemony. It has become so ingrained in our daily lives that we overlook the power structures driving the forces of conventional innovation.

3. Critique on Conventional Innovation

3.1. Critique from an Economics and Power Perspective

We argue that there is little natural or neutral about conventional innovation. Its objective is to improve return on investment, or increase wealth for vested interests (Marcuse, [1964] 2003), often subsidized by governments (Mazzucato, 2018). Profit-seeking organizations use conventional innovation as a driver for more consumption, consequently leading to economic expansion (Stuart et al., 2020), this is a variant of Marx's description M>C>M' (Marx, 1867 in Hean et al., 2003; Hickel 2020, p. 85). It could be written as M>I>C>M'[3], which is a self-reinforcing cycle.

C-level management and shareholders of big firms autocratically decide where money is invested and where it is not. Essentially, the market, and consequently capital, determines the direction of innovation and therefore society. For example: social media, a conventional innovation, was imposed on us, and with it also its dire consequences, especially for young people (Braghieri, et al., 2022).

The productivist claim that universal prosperity can be achieved through conventional innovation does not necessarily yield equitable outcomes. Rather, it often exacerbates socio-economic disparities, fuels processes like gentrification, and diminishes individual and community autonomy (Piketty 2014; Pansera, 2024). However, it is still commonly seen as a natural result of human ingenuity that should never be interrupted or guided. Amazon, Google and ASML (the world's largest supplier of the semiconductor industry based in The Netherlands) are not only put on a pedestal, they are society's examples of progress, consequently convincing politicians to give them tax benefits and subsidies that ordinary companies don't get (Hager & Baines, 2020).

[3] M stands for Money. I stands for conventional Innovation. C stands for Commodity. M' stands for increase of money (Hickel, 2020a, p.85). This is a variant of M>R>T>C>M' (in Erickson, 2022, p. 137). ''With more growth there's more capital to invest in more research, to create more technology for more growth.''

Marketers who have internalized conventional innovation fuel the accelerating rapid production cycles of new consumer goods, creating artificial desires that drive the consumption of needless commodities and offering choices that add little value (Galbraith, 1956; Schumacher, 1973), e.g. automatic nose trimmers, automatic pot stirrers or the endless 'advancements' of skin care products. Under current conditions, product lifetime is the first casualty of restless innovation permeating our economy (Jackson, 2022). Herbert Marcuse called this the manipulation of false needs by vested interests (Marcuse, [1964] 2003). These false needs, or pseudo-satisfiers (Schumacher, 1973), are the driver of overconsumption as ideology (Stuart et al., 2020) in which people are transformed into ''consuming animals'' (Paci, 1972: p. 437), through machinery of enticement (Leach, 1993). But even seemingly useful innovations like electronic vehicles, or more efficient, cheaper refrigerators can be questioned if they finally increase our global resource metabolism. The primary focus of this paper is that deterministic productivism fosters unsustainability which is why we need new principles to judge if an innovation is contributing to better ecological and social circumstances.

3.2. Critique from an Ecological Perspective

Biodiversity, or 'life', is facing a severe crisis, with ecologists warning of a potential sixth mass extinction (Kolbert, 2014). The Amazon is close to the tipping point of irreversible savannization (Feng et al., 2021), Madagascar is threatened with dangerous levels of biodiversity loss (Ralimanana et al., 2022), and worldwide, the state and trend of biodiversity in various flora and fauna is very poor (IPBES, 2019; WWF, 2024). Climate change, extraction, land-use change and chemical waste disrupt natural processes, pollute the environment and lead to serious health problems (Bellard et al., 2022; Cousins et al., 2022). Plastics are emerging as a significant issue, with plastics literally raining down on us (Fan et al., 2022; Brahney et al., 2020). Experts are even referring to our era as the "Plasticene," due to the profound impact that plastic production and consumption have on earth's systems (Rangel-Buitrago et al., 2022). More broadly, the stability and resilience of the total earth system is at risk, six out of nine planetary boundaries for a livable earth have already been transgressed (Richardson et al., 2023).

Primarily, countries in the Global North are extracting and polluting on an unprecedented scale, both directly and indirectly (across borders). Over the past four decades, approximately 60% of all global human resource extraction has occurred (EEA, 2016). The growing global economy, measured by gross domestic product (GDP), is coupled to resource and energy use (Haberl et al., 2020; Wiedman et al., 2020; Ward et al., 2016; Hickel & Kallis, 2020), and from the current 100 gigatons of material extraction, it is projected to grow to 170 gigatons by 2050, according to the Circularity Gap Report (2023), which will contribute to even more biodiversity loss (Otero et al., 2020). Industrial agriculture is a well- known driver of loss of life, but research shows that the rapidly rising demand for new consumer goods in sectors such as clothing, building materials, and digital consumer goods also leads to, directly and indirectly, biodiversity loss (Wilting et al., 2017; Kan et al., 2023). Climate change poses a significant threat to biodiversity (IPBES, 2019; Wilcock et al., 2023; Bradshaw et al., 2021), and is further driven by increased production and consumption (Burke et al., 2015). It is a mutually reinforcing cycle: climate change accelerates biodiversity loss, and biodiversity loss, in turn, exacerbates climate change (IPBES, 2019). We are facing an existential problem; without well-functioning ecological processes and a healthy biodiversity, our access to oxygen, drinking water, food, clothing, building materials, and coastal protection is at risk (IPBES, 2019). Our expanding economy leads us, and all other lifeforms into a perilous future.

3.3 Critique from a Justice Perspective

This ecological urgency generates an immediate social imperative for transformation, particularly from a justice perspective. People that have contributed least to environmental collapse and biodiversity extinction experience the most damaging consequences (Hickel et al., 2022; IPCC, 2022a). Droughts and floodings and, as a consequence, failed agricultural harvests will lead to mass migrations. The nearly 32 million displacements caused by extreme weather-related hazards in 2022 represents a 41 percent increase compared to 2008 levels (UNHCR, 2023). Already 600 million humans live outside the human climate niche (Lenton et al., 2023), most in the Global South. And new research shows that there could be a possible global GDP reduction of 19% (Kotz et al., 2024), due to ecological disruption, also effecting the poor countries the most.
The profit-seeking production apparatus, depicted in M>I>C>M', generates unsustainable forms of inequality and injustice. Wealthy countries are responsible for 74% of all material use in the last 50 years (Hickel et al., 2022), and at the national level, studies show that the highest income group within a country has a material footprint four times higher than the lowest income group (Buhl et al., 2019). Despite the scarcity of global material footprint research of the super-rich, we do know that the carbon footprint of the top 1% is thousands of times higher than the average global citizen (Barros & Wilk, 2021; Oxfam, 2024). There is no reason to believe that this is not the case on a material level, given the lifestyles of the wealthiest people on our planet. Wiedmann et al. (2020) unequivocally state that the world's most affluent individuals are responsible for the most ecological impact.

Conventional innovation is associated with justice issues, particularly as we recognize its inherent lack of neutrality. It leads to competitive advantage of Global North companies and can lead to uneven power relations (Pansera & Owen, 2018a). Pansera and Fressoli (2021) write that ''Innovation can reinforce unequal dominant positions on a market, limit the access of certain resources and social goods to specific societal sectors or quickly disrupt traditional ways of doing things.'' And this holds from a macro perspective, leading to ecological unequal exchange (Dorninger et al., 2021). The omnipresence of innovation even permeates development discourse, leaving market-driven solutions as the sole means of creating value (Pansera & Owen, 2018b).

The conventional view of innovation perpetuates imaginaries, ideas and practices that erode our ecological and social world (Pansera & Fressoli, 2021). If we do not fundamentally reconsider our expansive economic design and its biggest culprit, conventional innovation, the production engine will desiccate our primeval forests and, with them, life itself. This is also an interspecies justice issue, emphasizing the rights of non-human species. The economist, and conventional innovation proponent, Schumpeter might, with today's knowledge, have looked differently at his famous theory of creative destruction: the continuous replacement of technology and processes driven by conventional innovation (Schumpeter, 1942; Robra et al., 2023). Although he predicted the collapse of capitalism, he did not foresee that it could be through collapse of ecosystems. Creative destruction has turned into destructive creativity. His most promising student, Nicolas Georgescu-Roegen, understood this, and became a seminal figure in Ecological Economics.

4. An Ecological Economics View

Ecological economics can help us synthesizing the critiques mentioned above by offering a holistic view for the construed problems. Ecological economics argues that the human economy cannot exist without a healthy ecology. Any economist who views nature as an externality considers the economy as an externality of the larger whole, as if it doesn't exist on earth. The economy is a subsystem of our non-growing environment (Daly, 1996) as energy, matter, and biomass are the basis of all life. Nicholas Georgescu-Roegen (1971) asserted that every economic activity is rooted in physical reality.

Any attempt at redefining innovation that does not reference ecology or planetary boundaries is incomplete because it assumes that size, or what the late Herman Daly called "scale" (1991), does not exist. It is physically impossible; the magnitude of throughput, material and energy use, must fall within the Earth's planetary boundaries in the long term (Murphy, 2022). This is not a new idea, as John Stuart Mill, one of the fathers of modern economics, introduced the concept of the Steady State, an economy that does not grow, in his "Principles of Political Economy" (1849, Ch 6). When conventional growth economists refer to the real economy, Georgescu-Roegen's concept of physical reality is marginalized. Economist Thimothée Parrique (2019, p.78) puts the latter critical: "the real economy (production of goods and services) is embedded within – and therefore limited by – a real-real economy of energy and material flows." He continues: "Nature has non-negotiable market power, and humans can only use what nature supplies." Without incorporating biodiversity, planetary boundaries, and pollution into the production and innovation apparatus, we should question the realism of our economic design. The human economy is always an ecological economy.

Georgescu-Roegen argued that all economic activity leads to entropic degradation (1971, p. 279): 'The economic process is entropic, it neither creates nor consumes matter or energy, but only transforms low into high entropy,' or more colloquially: waste (Murphy, 2022; Rammelt, 2024). Even seemingly sustainable innovations have a significant ecological impact. The highly praised electric car embodies this one-dimensionality. It evidently emits less CO2 but significantly increases material extraction and plastic pollution as a significant source of micro plastics in the oceans is tire rubber dust (An et al., 2020; Reddy et al., 2020; Roychand & Pramanik, 2020). We save the climate while destroying our biodiversity. The same goes for decentralized sustainable energy generation; lower CO2, but higher material footprint (Regueiro-Ferreira & Alonso-Fernández, 2023). Besides Georgescu-Roegen, also Herman Daly stressed the importance of limiting resource use: they are the limiting factor in the economy on the long run (Daly, 1996). The goal in any economic design should be to ''maximise life'', (Daly, 1996, p.32), because biodiversity, or 'life', is inherently anti-entropic, at least locally, as it restores balance to our entropic biophysical economic system (Brillouin, 1949; Nelson, 2003; Schneider & Sagan, 2005; Schrödinger, 1944). Entropy needs to be foundational in the search of setting new principles of innovation.

Additionally, as ecological economics also acknowledges the importance of well-being and social progress (Dodds, 1997; Jackson, 2016), conventional innovations based on the growth fiction have a questionable social reputation. Overuse of social media for example, leads to depression (Keles et al., 2020) and a significant number of young people are addicted to gaming (World Health Organization, 2018), and at the macro level, the average person is less happy due to our consumption culture (Ditmarr & Kapur, 2011). "Shop till you drop" can be taken quite literally. Chatting with friendly cashiers at the supermarket is becoming scarce. Christiaan Weijts (2023) writes in a well-known Dutch paper: 'Do-it-yourself technology turns service providers into controllers.' Conventional innovation often leads to environmental or cognitive and emotional disconnect (Kronenberg et al., 2024). Which innovation withstands scrutiny in terms of planetary boundaries and well-being? Adam Smith, the *pater familias* of free market economics, argued that we would ultimately develop different definitions of progress not based on growth (in Boulding, 1973). Georgescu-Roegen, came to the ultimate conclusion of creative destruction: "if we depend on destruction to move forward, what will happen when there is nothing left to destroy?'' (in Pesch, 2018).

5. Jevons Paradox

Techno-optimists, or ecomodernists, act as if the realities described above do not exist (King, 2020). They assert that we are inventive with unparalleled creativity, ingenuity and even "power''. (Ecomodernist Manifesto, n.d.). Obviously, this is partly true. Mobile video calling with family that live in different parts of the world? Previously unimaginable, now commonplace. And that everyday commonality is the breeding ground for ecomodernists: we innovate our way out of problems because human ingenuity knows no boundaries. CO2? Electrification. Pollution? Innovation. Sustainability? Green growth. Material and energy use? Efficiency. And the latter is also true; through conventional innovation we are becoming more efficient. The irony is that improved efficiency at the margin almost always leads to more material or energy use in the aggregate (Erickson, 2022, p. 137). More efficient flying, for example, leads to increased usage (Alcott et al., 2012) or, more efficient energy production leads to more energy usage (Brockway et al., 2021). More efficient production results in freed-up resources that are reinvested (Wallenborn 2018, Polimeni et al., 2015), leading to more resource use. This is the Jevons paradox: we become more efficient at consuming more resources and energy (Alcott, 2005; Lange et al., 2021). This efficiency-overcomes-all conventional innovation paradigm is also referred to as eco-efficiency; a reduction in energy and resource use per unit produced, translating into a reduction of production cost, ultimately leading to an increase in absolute material and energy use terms (Dylick & Hockerts, 2002). Eco-efficiency is on face value a conventional innovation attempt to help us overcome our ecological problems, but has a chronic order of importance: capital accumulation first, sustainability second (Nesterova and Robra, 2022). Zooming out, Pansera & Owen (2021) articulate that innovation, often fueled by science, improves productivity and efficiency that, in turn, boost economic growth. This is not a novel insight; Illich, in "Tools for Conviviality" (1973), already articulated the dangers of uncontrolled economic expansion due to the proliferation of tools that exceed the limits of a sustainable society. Solutions frequently fail to account for the fact that improvements in efficiency are often counterbalanced by increases in consumption. This underscores the importance not only of what we purchase but also the quantity thereof (Stuart et al., 2020).

6. Degrowth Innovations

Our growth economy with conventional innovation as its catalyst exacerbates ecological and social problems. Therefore, we argue, our economies must degrow. We have to equitable downscale production and consumption to increase human well-being and enhance ecological conditions at the local and global level, in the short and long term (Schneider et al., 2010). As Mill suggested in his essay 'Nature': we need an economy in harmony with nature (Mill, 1874; Stephens, 2015). With reduced consumption and production, our emissions, material use, and pollution will decrease. The IPCC report (2022b) confirms this: degrowth is an effective way to reduce extraction, emissions, and material use with high certainty. It requires no investment or innovation; we can start tomorrow. And that brings us to the central thesis of this paper: without innovations based on degrowth principles, we will not be able stop the current socio-ecological destruction. Conventional pro- growth innovation cannot be considered innovation fit for the future. Every responsible, sustainable innovation must bring humanity one step closer to the safe space within planetary boundaries and well-being for everyone, not just the human life or the well-off in wealthy countries. Although degrowth represents a fragmented discourse, encompassing a social movement, a research field, and a utopian and political project (Martinez-Allier, 2009; Schneider et al., 2010; Kallis, 2011; Demaria et al., 2013; Parrique, 2019) its underlying principles can be synthesized[4] and should serve as the foundation for a new standard of innovation. We argue that innovations grounded in degrowth principles must meet the following four conditions:

1. Our reality is entropic, the world's throughput must reduce to levels that don't exceed the safe operating space.

[4] Based on definition commonalities of recent key papers in degrowth academia: Büchs & Koch, 2019; Cosme et al., 2017; Degrowth.info; Demaria et al., 2013; Escobar, 2015; Fitzpatrick et al., 2022; Hickel 2020; 2021; Jackson, 2009; Jungell-Michelsson & Heikkurinen, 2022; Kallis, 2011; 2018; Latouche, 2009; Martinez-Allier, 2009; Princen 2005; Research & Degrowth, 2010, p. 524; Schmelzer et al., 2022; Schneider et al., 2010; Trainer, 202 and on Parrique (2025).

2. Enhance social and economic justice for all;
3. Improve and secure well-being for all life;
4. Foster and enhance democracy.

Innovation, derived from the Latin term *innovatio*, refers to the act of introducing something new. However, novelty for its own sake is not necessarily future-proof. We define future-proof innovations as those rooted in the mentioned four essential principles '*Degrowth innovations.'* Degrowth innovations can involve technological or social advancements and practices, with the latter encompassing activities driven by the pursuit of addressing social needs, and in our thesis, ecological needs (Mulgan, 2006).

1. Degrowth innovations are not technophilic or technophobic. In our view we can rely on technological innovation for a better future, but only to return us back to the carrying capacity of our planet, and eventually, development within these limits in a steady state economy (Daly, 1991). A degrowth innovation can be a consumer product, but biodegradable and repairable. It can be used for sustainable mobility as long as it leads to more use of public transport or non-motorized vehicles (Winkler et al., 2023). Degrowth innovations in agriculture should always lead to less (CO2, methane, nitrogen) emissions and pesticide usage (Sharma et al., 2019), and a restoration of soil-, water- and air quality (Nelson & Edwards, 2020). They can be supply-side technological such as bio-building materials and bioplastics made with elephants grass, Miscanthus (Pereira Dias, et al., 2021), but also demand-side social, by changing behaviour and diets from meat to plant-based. We need furniture, but never at the expense of forests. In fact, every furniture purchase should lead to reforestation, in both The Netherlands and Malawi, via e.g. international untradeable forest bonds (Hall et al., 2017). Illich acknowledged this in his approach to convivial innovation, where preservation and enhancement of ecosystems should be of paramount importance (1973). In other words: biophilic, entropic and frugal.

2. Social and economic justice is a second principle of degrowth innovations. Citizens in the Global South should increase their access to and use of energy and materials to enhance their quality of life, while those in the Global North should reduce their consumption, maintaining a high level of well-being (Demaria et al., 2013). This thought aligns with the development/culturalist critique of e.g. Latouche (1993; 2009) and Escobar (2015) as the growth of the global social metabolism is a source of justice conflicts and exploitation (Kallis, 2018, Scheidel et al., 2020; Moore, 2017). An example of this second principle for degrowth innovation is true and fair pricing (Maxwell, 2007). True pricing for cleaning up unsustainable externalities that deteriorate the environment (e.g. heavy chemical pollution in the agro-industry or mining activities in pristine rainforests), and fair pricing for ensuring a decent living wage for all people (Kara, 2023). The Earth System Justice framework could guide how the global community can share limited ecospace for current generations (intragenerational justice), past and future generations (intergenerational justice) and non-human life (interspecies justice) (Gupta et al., 2023).

3. Research that reduce our footprint while enhancing well-being for all should be further continued. Costa Rica is a prime example (Hickel, 2020b). This country managed to have low emissions per capita, a quarter the size of the United States, with a higher average well-being, because of what sometimes is called the Amerindian ''sweet life''; or "Pura vida", with emphasis on balance and sufficiency (Powers et al., 2019), actively pursued by the Costa Rican national and local governments (Fletcher et al., 2020). Active governance of sufficiency are also seen in the movement of Fearless Cities (Fearless cities, n.d.; Saito, 2023,), where civilian life is explicitly prioritized over multinational cooperations and economic growth. A notable example is Barcelona's Superblocks initiative (Barcelona City Council, n.d.). Through greening of public spaces, limitation of car and flight traffic and reactivation of local economic fabric, they are a potential frontrunner in this movement. Secondly, not only human life should be considered in this third principle of degrowth innovations. We consider

enhancing all life to be of existential importance, overlapping with the principle of justice for non-human life, or interspecies justice (Gupta et al., 2023). An interesting example of a degrowth innovation enhancing well-being of all life, is the Zoonomic movement: the world's first organizational model that safeguards the interests of all life (Zoop, n.d.). Currently, there are 14 organizations, including commercial ones, with the predicate Zoonomy.

4.1. We advocate for more than a mere redefinition of innovation, but for a broader *modus vivendi*. As the market, and consequently capital and power, currently determine the direction of innovation and therefore society, we need to bring innovation to the macro-political sphere where citizens have direct influence of the direction of innovation and, thus, society. For instance, the impact of large language models, like ChatGPT, a conventional innovation, on our society will be enormous. Experts are claiming that it will exacerbate inequality (Romei, 2024) and ecological degradation (Saenko, 2023). The decision making trajectory of innovations should be subject to a direct democratic decision-making vehicle; citizen initiated, binding and proactive (Altman, 2010). A proposal could be to organize *eco-convivial innovation counsels*, following the example of the Citizen's convention for Climate (Giraudet et al., 2021) or the Civilian Counsel in the Netherlands (bureauburgerberaad, n.d.). This should be a direct democratic vehicle with 150 randomly selected civilians as a mirror of society, that debates and advices parliament bindingly on innovation with an entropic and biophysical boundaries foundation with a strong emphasis on frugality to save biodiversity, on civilian autonomy, inequality and power relationships, and on well-being and social and economic justice. This vehicle should also be transnational, guided by the principles of Earth System Justice: ensuring an equitable distribution of nature's benefits, rights, risks, and associated responsibilities among all people globally, within the safe and just boundaries of Earth's systems, to provide universal support for life (O'Neill et al., 2018; Gupta et al., 2023).

4.2. There is an urgency for economic democratization, not only political. Many proponents of degrowth argue that smaller, socially, cooperatively and democratic organized economic entities—particularly cooperatives and other businesses focused on the common good—are more likely to produce in an ecological and social just way without the imperative for economic growth. This is because they are not subjected to the pressures of accumulation and competition imposed by investors and shareholders (Schmelzer, 2022). Sociologist Isabelle Ferreras provides a framework for transforming larger, often publicly-traded, firms (Ferreras, 2023). She observes that these firms function as political entities, as their decisions impact a wide array of stakeholders, both human and non-human. Ferreras argues for moving beyond the exclusive political rights of capital owners in business and introduces the concept of the "bicameral firm." In this model, decision-making occurs within two chambers: a shareholders' assembly and a workers' assembly. Ferreras demonstrates that democratically governed companies tend to exhibit lower levels of absenteeism, increased sustainability, better protection against aggressive capital pressures, reduced inequality, and greater financial stability. She advocates this predistributive approach as a complement to redistributive strategies. Another variant of this idea could be the 'tricameral firm', where natural stakeholders are also represented, by e.g. the judicial system, following the rights of nature movement (Putzer et al., 2022).

7. Conclusion

This paper proposes new principles for innovation to show a pathway to a cleaner and just future. Every layer of society should embrace degrowth innovations as the solution to our socio-ecological crisis, because as Samantha Sweetwater postulated: ''The majority of what we see as creativity is currently destructive'' (Hagens, 2024). To achieve this objective, we need to decolonise our imaginary

(Latouche, 2009). Our collective imagination is captivated by the industrial and productivist forces in civilization propagandizing the ubiquitous positivity of conventional innovation. As extensively argued in this article, we are convinced that with the help of degrowth innovations we can restore ecological and social degradation in a just way. Saying goodbye to conventional innovation in a growth economy may be the biggest innovation the modern era needs. Let's deconstruct destruction and internalize creativity, imagination and a degrowth *modus vivendi* for a just pathway for all life. Because, conventional innovation leads to the extinction of many species, a world lost forever.

Declaration of external funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the authors used ChatGPT in order to improve the readability and language of the manuscript. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

Acknowledgements

For proof reading this article we would like to thank Crelis Rammelt, Assistant Professor Environmental Geography and International Development Studies at the University of Amsterdam, Frans Melissen, Professor Sustainability Transitions at the Breda University of Applied Sciences, and Harald Buitendijk, researcher and senior lecturer at the Breda University of Applied Sciences.

References

Alcott, B. (2005). Jevons' paradox. Ecological economics, 54(1), 9-21.

Alcott, B., Giampietro, M., Mayumi, K., & Polimeni, J. (2012). *The Jevons paradox and the myth of resource efficiency improvements.* Routledge.

Altman, D. (2010). *Direct democracy worldwide*. Cambridge University Press.

An Ecomodernist Manifesto. (n.d.). https://www.ecomodernism.org/ (Accessed November 18, 2024).

An, L., Liu, Q., Deng, Y., Wu, W., Gao, Y., & Ling, W. (2020). Sources of microplastic in the environment. *Microplastics in terrestrial environments: Emerging contaminants and major challenges*, 143-159.

Barcelona Superblock | Barcelona City Council. (n.d.). www.barcelona.cat. https://www.barcelona.cat/pla-superilla-barcelona/mapa/en/ - a_0_&.

Barros, B., & Wilk, R. (2021) The outsized carbon footprints of the super-rich, Sustainability: Science, Practice and Policy, 17:1, 316-322, https://doi.org/10.1080/15487733.2021.1949847.

Bellard, C., Marino, C. & Courchamp, F. Ranking threats to biodiversity and why it doesn't matter. Nature Communications, 13, 2616 (2022). https://doi.org/10.1038/s41467-022-30339-y.

Boulding, K. E. (1973). The Shadow of the Stationary State. Daedalus, 102(4), 89–101. http://www.jstor.org/stable/20024168.

Bradshaw, C. J. A., Ehrlich, P. R., Beattie, A., Ceballos, G., Crist, E., Diamond, J., Dirzo, R., Ehrlich, A. H., Harte, J., Harte, M. E., Pyke, G., Raven, P. H., Ripple, W. J., Saltré, F., Turnbull, C., Wackernagel, M., & Blumstein, D. T. (2021). Underestimating the Challenges of Avoiding a Ghastly Future. *Frontiers in Conservation Science*, *1*. https://doi.org/10.3389/fcosc.2020.615419

Braghieri, L., Ro'ee, L., & Alexey M. (2022). Social Media and Mental Health. American Economic Review, 112 (11): 3660– 93. DOI:10.1257/aer.20211218

Brahney, J., Hallerud, M., Heim, E., Hahnenberger, M., & Sukumaran, S. (2020). Plastic rain in protected areas of the United States. *Science*, *368*(6496), 1257-1260.

Brillouin, L. (1949). Life, thermodynamics, and cybernetics. *American Scientist,* 37(4), 554-568.

Brockway, P. E., Sorrell, S., Semieniuk, G., Heun, M. K., & Court, V. (2021). Energy efficiency and economy-wide rebound effects: A review of the evidence and its implications. In *Renewable and Sustainable Energy Reviews* (Vol. 141). Elsevier Ltd. https://doi.org/10.1016/j.rser.2021.110781

Büchs, M., & Koch, M. (2019). Challenges for the degrowth transition: The debate about wellbeing. Futures, 105, 155-165.

Buhl, J., Liedtke, C., Teubler, J., & Bienge, K. (2019). The Material Footprint of private households in Germany: Linking the natural resource use and socioeconomic characteristics of users from an online footprint calculator in Germany. Sustainable Production and Consumption, 20, 74–83. https://doi.org/10.1016/j.spc.2019.05.001.

Burke, P. J., Shahiduzzaman, M., & Stern, D. I. (2015). Carbon dioxide emissions in the short run: The rate and sources of economic growth matter. *Global Environmental Change*, *33*, 109–121. https://doi.org/10.1016/j.gloenvcha.2015.04.012

Cardoso, P., Barton, P. S., Birkhofer, K., Chichorro, F., Deacon, C., Fartmann, T., ... & Samways, M. J. (2020). Scientists' warning to humanity on insect extinctions. *Biological conservation*, *242*, 108426.

Circle Economy. (2023). *The circularity gap report 2023* (pp. 1-64, Rep.). Amsterdam: Circle Economy.

Cosme, I., Santos, R., & O'Neill, D. W. (2017). Assessing the degrowth discourse: A review and analysis of academic degrowth policy proposals. *Journal of Cleaner Production* (Vol. 149, pp. 321–334). Elsevier Ltd. https://doi.org/10.1016/j.jclepro.2017.02.016

Cousins, I. T., Johansson, J. H., Salter, M. E., Sha, B., & Scheringer, M. (2022). Outside the safe operating space of a new planetary boundary for per-and polyfluoroalkyl substances (PFAS). *Environmental Science & Technology,* 56(16), 11172-11179. DOI:10.1021/acs.est.2c02765

Creutzig, F., Niamir, L., Bai, X. et al. Demand-side solutions to climate change mitigation consistent with high levels of well- being. Nat. Clim. Chang. 12, 36–46 (2022). https://doi.org/10.1038/s41558-021-01219-y.

Daly, H. E. (1968). On economics as a life science. *Journal of political economy*, *76*(3), 392-406. Daly, H. E. (1997). *Beyond growth: The Economics of Sustainable Development*. Beacon Press. Daly, H. E. (1991). *Steady-State Economics: Second Edition With New Essays.* Island Press.

Degrowth.info. (n.d.). Retrieved May 10, 2024, from https://degrowth.info/degrowth.

Demaria, F., Schneider, F., Sekulova, F., & Martinez-Alier, J. (2013). What is degrowth? from an activist slogan to a social movement. *Environmental Values*, *22*(2), 191–215. https://doi.org/10.3197/096327113X13581561725194

Dittmar, H., Kapur, P. Consumerism and Well-Being in India and the UK: Identity Projection and Emotion Regulation as Underlying Psychological Processes. *Psychol Stud* 56, 71–85 (2011). https://doi.org/10.1007/s12646-011-0065-2.

Dodds, S. (1997). Towards a 'science of sustainability': Improving the way ecological economics understands human well- being. *Ecological economics*, 23(2), 95-111.

Dorninger, C., Hornborg, A., Abson, D. J., Von Wehrden, H., Schaffartzik, A., Giljum, S., ... & Wieland, H. (2021). Global patterns of ecologically unequal exchange: Implications for sustainability in the 21st century. *Ecological economics,* 179, 106824. https://doi.org/10.1016/j.ecolecon.2020.106824.

Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business strategy and the environment*, *11*(2), 130-141. doi:10.1002/bse.323

EEA (2016). Global total material use by resource type https://www.eea.europa.eu/data-and-maps/figures/global-total- material-use-by. Accessed 11 march 2024.

Erickson, J. D. (2022). *The progress illusion: reclaiming our future from the fairytale of economics.* Island Press.

Escobar, A. Degrowth, postdevelopment, and transitions: a preliminary conversation. *Sustain Sci* **10**, 451–462 (2015). https://doi.org/10.1007/s11625-015-0297-5

Fan, W., Salmond, J., Dirks, K. N., Sanz, P. C., Miskelly, G. M., & Rindelaub, J. D. (2022). Evidence and Mass Quantification of Atmospheric Microplastics in a Coastal New Zealand City. *Environmental Science & Technology,* 56(24), 17556– 17568. https://doi.org/10.1021/acs.est.2c05850.

Feng, X., Merow, C., Liu, Z. *et al.* How deregulation, drought and increasing fire impact Amazonian biodiversity. *Nature* **597**, 516–521 (2021). https://doi.org/10.1038/s41586-021-03876-7

Ferreras, I. (2023). Democratizing the Corporation: The Bicameral Firm as Real Utopia. *Politics & Society*, *51*(2), 188-

224. https://doi.org/10.1177/00323292231168708.

Fitzpatrick, N. P., Parrique, T., & Cosme, I. (2022). Exploring degrowth policy proposals: A systematic mapping with thematic synthesis*. Journal of Cleaner Production,* 365, 132764. https://doi.org/10.1016/j.jclepro.2022.132764.

Fletcher, R., Dowd-Uribe, B., & Aistara, G. A. (Eds.). (2020). *The ecolaboratory: environmental governance and economic development in Costa Rica*. University of Arizona Press.

Galbraith, John Kenneth. 1958. *The Affluent Society.* Boston: Houghton Mifflin.

Georgescu-Roegen, N. (1971). *The Entropy Law and the Economic Process. Harvard* University Press.

Giraudet, L. G., Apouey, B., Arab, H., Baeckelandt, S., Begout, P., Berghmans, N., ... & Tournus, Deliberationg on climate action: Insights from the French citizens' Convention for Climate. 2021. hal-03119539v1.

Godin, B. (2015). *Innovation Contested: The idea of innovation over the centuries.* https://doi.org/10.4324/9781315855608.

Gupta, J., Prodani, K., Bai, X., Gifford, L., Lenton, T. M., Otto, I., Pereira, L., Rammelt, C., Scholtens, J., & Tàbara, J. D. (2023). Earth system boundaries and Earth system justice: sharing the ecospace. *Environmental Politics.* https://doi.org/10.1080/09644016.2023.2234794

Haberl, H., Wiedenhofer, D., Virág, D., Kalt, G., Plank, B., Brockway, P., ... & Creutzig, F. (2020). A systematic review of the evidence on decoupling of GDP, resource use and GHG emissions, part II: synthesizing the insights. *Environmental research letters*, *15*(6), 065003.

Hagens, N. (2024, March 6). Samantha Sweetwater: "Life at the Center" (112). In The Great Simplification. https://www.thegreatsimplification.com/episode/112-samantha-sweetwater.

Hager, S. B., & Baines, J. (2020). The tax advantage of big business: how the structure of corporate taxation fuels concentration and inequality. *Politics & Society*, *48*(2), 275-305.

Hall, D., Lindsay, S., & Judd, S. (2017). Permanent forest bonds: A pioneering environmental impact bond for Aotearoa New Zealand. https://www.victoria.ac.nz/__data/assets/pdf_file/0009/1175247/WP17-01-Permanent-forest- bondsv2.pdf. Accessed on 24 July 2024.

Hean, S., Cowley, S., Forbes, A., Griffiths, P., & Maben, J. (2003). The M–C–M′ cycle and social capital. Social Science & Medicine, 56(5), 1061-1072.

Hickel, J. (2020). *Less is more: How degrowth will save the world.* Random House.

Hickel, J. (2020b). The sustainable development index: Measuring the ecological efficiency of human development in the anthropocene. Ecological economics, 167, 106331.

Hickel, J. (2021). What does degrowth mean? A few points of clarification. Globalizations, 18(7), 1105-1111.

Hickel, J., & Kallis, G. (2020). Is Green Growth Possible? New Political Economy, 25(4), 469–486. https://doi.org/10.1080/13563467.2019.1598964.

Hickel, J., Brockway, P., Kallis, G., Keyßer, L., Lenzen, M., Slameršak, A., ... & Ürge-Vorsatz, D. (2021). Urgent need for post-growth climate mitigation scenarios. Nature Energy, 6(8), 766-768. https://doi.org/10.1038/s41560-021- 00884-9.

Hickel, J., O'Neill, D., Fanning, A. L., & Zoomkawala, H. (2022). National responsibility for ecological breakdown: a fair- shares assessment of resource use, 1970–2017. The Lancet Planetary Health, 6(4), e342–e349. https://doi.org/10.1016/s2542-5196(22)00044-4.

Hospers, G. J. (2005). Joseph Schumpeter and his legacy in innovation studies. Knowledge, Technology & Policy 18, 20–

37. https://doi.org/10.1007/s12130-005-1003-1.

Illich I. (1973) *Tools for Conviviality*. New York: Harper & Row.

Ingham, S. (2016). Popular Rule in Schumpeter's Democracy. *Political Studies*, *64*(4), 1071-1087. https://doi.org/10.1111/1467-9248.12216.

IPBES (2019): *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. S. Díaz, J. Settele, E. S. Brondízio, H. T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Roy Chowdhury, Y. J. Shin, I. J. Visseren-Hamakers, K.

J. Willis, and C. N. Zayas (eds.). IPBES secretariat, Bonn, Germany.

IPCC, 2022a: *Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [H.-O. Pörtner, D.C. Roberts, M. Tignor,

E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. Cambridge University Press, Cambridge, UK and New York, NY, USA, 3056 pp., doi:10.1017/9781009325844.

PCC, 2022b*: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926

Jackson, T. (2016). *Prosperity without growth: Foundations for the economy of tomorrow*. Routledge.

Jackson, T. (2021). *Post growth: Life after Capitalism.* Polity.

Jonsson, F. A., & Wennerlind, C. (2023). *Scarcity: A History from the Origins of Capitalism to the Climate Crisis*. Harvard University Press.

Kallis, G. (2011). In defence of degrowth. Ecological economics, 70(5), 873-880. Kallis, G. (2018). *Degrowth.* Agenda Publishing.

Kan, S., Chen, B., Persson, U. M., Chen, G., Wang, Y., Li, J., Meng, J., Meng, J., Yang, L., Li, R., Du, M., & Kastner, T. (2023). Risk of intact forest landscape loss goes beyond global agricultural supply chains. One earth, 6(1), 55–65. https://doi.org/10.1016/j.oneear.2022.12.006.

Kara, S. (2023). *Cobalt red: How the blood of the Congo powers our lives.* St. Martin's Press.

Keles, B. McCrae N., & Grealish, A. (2020) A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents, International Journal of Adolescence and Youth, 25:1, 79-93, https://doi.org/10.1080/02673843.2019.1590851.

King, C. W. (2020). *The economic superorganism*. Springer Nature.

Kolbert, E. (2014). *The Sixth Extinction. An Unnatural History.* Henry Holt and Company, New York.

Kotz, M., Levermann, A., & Wenz, L. (2024). The economic commitment of climate change. *Nature*, *628*(8008), 551-557. Kronenberg, J., Andersson, E., Elmqvist, T., Łaszkiewicz, E., Xue, J., & Khmara, Y. (2024). Cities, planetary boundaries, and degrowth. *The Lancet Planetary Health,* 8(4), e234-e241.

Latouche, S. (2009). *Farewell to growth.* Polity.

Lange, S., Kern, F., Peuckert, J., & Santarius, T. (2021). The Jevons paradox unravelled: A multi-level typology of rebound effects and mechanisms. *Energy research and social science,* 74, 101982. https://doi.org/10.1016/j.erss.2021.101982.

Latouche, S. (2009). *Farewell to growth.* Polity.

Leach, W. R. (1993). *Land of desire: Merchants, power, and the rise of a new American culture.* Vintage books.

Lenton, T.M., Xu, C., Abrams, J.F. et al. Quantifying the human cost of global warming. *Nat Sustain* 6, 1237–1247 (2023). https://doi.org/10.1038/s41893-023-01132-6.

Lösch, B. (2008). Die neoliberale Hegemonie als Gefahr für die Demokratie. In: *Kritik des Neoliberalismus.*. https://doi.org/10.1007/978-3-531-90932-5_5

Macekura, S. J. (2020). *The mismeasure of progress: Economic growth and its critics.* University of Chicago Press.

Marcuse, H. (2003). *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society (1st ed.).* Routledge. https://doi.org/10.4324/9780203995211

Martinez-Alier, J. M. (2009). Socially sustainable economic de-growth*. Development and Change,* 40(6), 1099–1119 .

Maxwell, S. (2007). *The price is wrong: Understanding what makes a price seem fair and the true cost of unfair pricing.* John Wiley & Sons.

Mariana Mazzucato, Mission-oriented innovation policies: challenges and opportunities, *Industrial and Corporate Change*, Volume 27, Issue 5, October 2018, Pages 803–815, https://doi.org/10.1093/icc/dty034

Mill, J.S. (1849). *Principles of political economy.* The colonial press.

Mill, J. S. (1874). *Nature*. Longmans.

Moore, J. W. (2017). The Capitalocene, Part I: on the nature and origins of our ecological crisis. *The Journal of peasant studies*, *44*(3), 594-630. http://dx.doi.org/10.1080/03066150.2016.1235036

Murphy T. W. (2021). *Energy and human ambitions on a finite planet*. EScholarship, University of Carolina. https://doi.org/10.21221/S2978-0-578-86717-5

Nesterova, I., & Robra, B. (2022). Business in a strongly sustainable society? In, D'Amato, Dalia & Toppinen, Anne & Kozak, Robert. (2022). *The Role of Business in Global Sustainability* Transformations. Routledge.

Nelson, P. C. (2003). *Biological physics.* W.H. Freemon & Co

Nelson, A., & Edwards, F. (Eds.). (2020). *Food for degrowth: Perspectives and practices.* Routledge.

O'Neill, D., Fanning, A. L., Lamb, W. F., & Steinberger, J. (2018). A good life for all within planetary boundaries. *Nature sustainability*, 1(2), 88–95. https://doi.org/10.1038/s41893-018-0021-4.

Oxfam 2024. *Carbon inequality Kills*. https://policy-practice.oxfam.org/resources/carbon-inequality-kills-why-curbing-the-excessive-emissions-of-an-elite-few-can-621656/ (accessed on December 12, 2024).

Pansera, M. (2024). *Innovate or die?* Green European Journal. https://www.greeneuropeanjournal.eu/innovate-or-die/. (Accessed on August 26, 2024).

Pansera, M., & Fressoli, M. (2021). Innovation without growth: Frameworks for understanding technological change in a post-growth era. Organization, 28(3), 380-404. https://doi.org/10.1177/1350508420973631.

Pansera M., & Owen R. (2018a) 'Framing Inclusive Innovation within the Discourse of Development: Insights from Case Studies in India', Research Policy 47: 23–34. https://doi.org/10.1016/j.respol.2017.09.007.

Pansera, M., & Owen, R. (2018b). Innovation for de-growth: A case study of counter-hegemonic practices from Kerala, India. Journal of Cleaner Production, 197(Part 2), 1872-1883. https://doi.org/10.1016/j.jclepro.2016.06.197.

Paci, E. 1972. *The Function of the Sciences and the Meaning of Man.* Evanston, IL: Northwestern University Press. Parrique, T. (2019) *The political economy of degrowth.* Doctoral dissertation, Lund University.

Parrique T., Barth J., Briens F., C. Kerschner, Kraus-Polk A., Kuokkanen A., Spangenberg J.H., (2019). *Decoupling debunked: Evidence and arguments against green growth as a sole* strategy for sustainability. European Environmental Bureau.

Parrique T., 2025. Defining degrowth. Working Paper n°2025-1, https://timotheeparrique.com. PREPRINT

Pereira Dias, P., Jayasinghe, L. B., & Waldmann, D. (2021). Investigation of Mycelium-Miscanthus composites as building insulation material. Results in Materials, 10, 100189. https://doi.org/10.1016/j.rinma.2021.100189

Pesch, U. (2018). Paradigms and paradoxes: The futures of growth and degrowth. International Journal of Sociology and Social Policy, 38(11-12), 1133-1146. https://doi.org/10.1108/IJSSP-03-2018-0035.

Piketty, T. (2014). *Capital in the twenty-first century.* Harvard University Press.

Polimeni, J. M., Mayumi, K., Giampietro, M., & Alcott, B. (2015). *The Myth of Resource* Efficiency: The Jevons Paradox. Routledge.

Powers, W. D., Oliveira, K. M. D., & Timmer, H. (2019). *The High Happiness-Low Carbon Link A new study from Bolivia on well-being and sustainability*. Solutions: For a Sustainable & Desirable Future, 10(4). https://www.carsoncenter.uni-muenchen.de/download/events/programs/powers_presentation.pdf (Accessed on November 14, 2024).

Princen, T. (2005). *The logic of sufficiency.* Mit Press.

Putzer, A., Lambooy, T., Jeurissen, R., & Kim, E. (2022). Putting the rights of nature on the map. A quantitative analysis of rights of nature initiatives across the world. *Journal of Maps*, *18*(1), 89–96. https://doi.org/10.1080/17445647.2022.2079432

Ralimanana, H., Perrigo, A. L., Smith, R. J., Borrell, J. S., Faurby, S., Rajaonah, M. T., Randriamboavonjy, T., Vorontsova,

M. S., Cooke, R. S. C., Phelps, L. N., Sayol, F., Andela, N., Andermann, T., Andriamanohera, A. M., Andriambololonera, S., Bachman, S. P., Bacon, C. D., Baker, W. J., Belluardo, F., . . . Antonelli, A. (2022). Madagascar's extraordinary biodiversity: Threats and opportunities. *Science,* 378(6623). https://doi.org/10.1126/science.adf1466.

Rammelt, C., ''How entropy drives us towards degrowth. *Real-world economics review*, issue no. 107, March 2024, pp. 2-7, http://www.paecon.net/PAEReview/issue107/Rammelt107

Rangel-Buitrago, N., Neal, W., & Williams, A. (2022). The Plasticene: time and rocks. *Marine Pollution Bulletin*, *185*, 114358. https://doi.org/10.1016/j.marpolbul.2022.114358

Reddy, S., Lau, W., et al. (2020). *'Breaking the Plastic Wave: Top Findings for Preventing Plastic Pollution'*. Report by The Pew Charitable Trusts & SYSTEMIQ. 23rd July 2020.

Regueiro-Ferreira, R. M., & Alonso-Fernández, P. (2023). Interaction between renewable energy consumption and dematerialization: Insights based on the material footprint and the Environmental Kuznets Curve. *Energy,* 266, 126477. https://doi.org/10.1016/j.energy.2022.126477.

Research & Degrowth, 2010. Degrowth declaration of the Paris 2008 conference. *Journal of Cleaner Production*, 18, 523:524. http://dx.doi.org/10.1016/j.jclepro.2010.01.012.

Richardson, K., Steffen, W. et al (2023). Earth beyond six of nine planetary boundaries. *Science Advances.* Volume 9, issue 37 September 2023. DOI: 10.1126/sciadv.adh245.

William J. Ripple, Christopher Wolf, Thomas M. Newsome, Mauro Galetti, Mohammed Alamgir, Eileen Crist, Mahmoud I. Mahmoud, William F. Laurance, 15,364 scientist signatories from 184 countries, World Scientists' Warning to Humanity: A Second Notice, *BioScience*, Volume 67, Issue 12, December 2017, Pages 1026–1028, https://doi.org/10.1093/biosci/bix125

Robra, B., Pazaitis, A., Giotitsas, C., & Pansera, M. (2023). From creative destruction to convivial innovation - A post- growth perspective. *Technovation*, 125, 102760. https://doi.org/10.1016/j.technovation.2023.102760.

Romei, Valentina. "IMF Warns of "Profound Concerns" over Rising Inequality from AI." ft.com, 17 June 2024. http://www.ft.com/content/b238e630-93df-4a0c-80d0-fbfd2f13658f. Accessed 20 June 2024.

Roychand, R., & Pramanik, B. K. (2020). Identification of micro-plastics in Australian road dust. *Journal of Environmental Chemical Engineering*, *8*(1), 103647.

Russell, A. L., & Vinsel, L. (2018). After innovation, turn to maintenance. *Technology and Culture,* 59(1), 1-25. 10.1353/tech.2018.0004

Sachs, J.D., Lafortune, G., Fuller, G. (2024). *The SDGs and the UN Summit of the Future. Sustainable Development Report 2024*. Paris: SDSN, Dublin: Dublin University Press. doi:10.25546/108572

Saenko, Kate. *Is Generative AI Bad for the Environment? A Computer Scientist Explains the Carbon Footprint of ChatGPT and Its Cousins.* The Conversation, 23 May 2023. http://theconversation.com/is-generative-ai-bad-for-the- environment-a-computer-scientist-explains-the-carbon-footprint-of-chatgpt-and-its-cousins-204096. Accessed 20 June 2024.

Schmelzer, M. (2023). From Luddites to limits? Towards a systematization of growth critiques in historical perspective.

Globalizations, 20(3), 447–464. https://doi.org/10.1080/14747731.2022.2106044

Schneider, F., Kallis, G., & Martinez-Alier, J. (2010). Crisis or opportunity? Economic degrowth for social equity and ecological sustainability. Introduction to this special issue. *Journal of cleaner production,* 18(6), 511-518.

Schneider, E. D., & Sagan, D. (2005). *Into the cool: Energy flow, thermodynamics, and life.* University of Chicago Press.

Schmelzer, M., Vetter, A. & Vansintjan, A. (2022). *The future is Degrowth. A Guide to a world beyond Capitalism*. Verso.

Schrödinger, E. (1944). *What is life? With mind and matter and autobiographical sketches*. Cambridge University Press.

Schumacher, E.F. (1973). *Small is beautiful: economics as if people mattered.* Vintage books London.

Schumpeter, J. (1943). *Capitalism, Socialism, and Democracy.* New York: Harper and Brothers.

Sharma, A., Kumar, V., Shahzad, B., Tanveer, M., Sidhu, G. P. S., Handa, N., ... & Thukral, A. K. (2019). Worldwide pesticide usage and its impacts on ecosystem. SN Applied Sciences, 1, 1-16. https://doi.org/10.1007/s42452-019-1485-1

Stephens, P. H. (2015). On the Nature of "Nature": The Real Meanings and Significance of John Stuart Mill's Misunderstood Essay. *Environmental Ethics*, *37*(3), 359-376. https://doi.org/10.5840/enviroethics201537333

Stuart, D., Gunderson, R., & Petersen, B. (2020). Overconsumption as ideology implications for addressing global climate change. *Nature and Culture*, *15*(2), 199-223. Article 0205. https://doi.org/10.3167/NC.2020.150205

Trainer, T. (2020). De-growth: Some suggestions from the Simpler Way perspective. *Ecological Economics,* 167, 106436. https://doi.org/10.1016/j.ecolecon.2019.106436

UNHCR (2023) Climate change and displacement: the myths and the facts. By Kristy Siegfried, 15 November 2023 on UNHCR website. (Accessed on 5th February 2024).

Wallenborn, G. (2018). Rebounds are structural effects of infrastructures and markets. *Frontiers in energy research,* 6, 99. https://doi.org/10.3389/fenrg.2018.00099.

Ward, J. D., Sutton, P. C., Werner, A. D., Costanza, R., Mohr, S. H., & Simmons, C. T. (2016). Is decoupling GDP growth from environmental impact possible?. *PloS one,* 11(10), e0164733. DOI:10.1371/journal.pone.0164733

Weijts, C. (2023, February 9). Kassaloze supermarkten en serveerrobots: steeds minder mensen, nóg meer technologie.

NRC. https://www.nrc.nl/nieuws/2023/02/09/overal-gescand-nergens-verwelkomd-a4156570.

Wiedmann, T., Lenzen, M., Keyßer, L. T., & Steinberger, J. K. (2020). Scientists' warning on affluence. *Nature Communications*, 11(1). https://doi.org/10.1038/s41467-020-16941-y.

Wilting, H. C., Schipper, A. M., Bakkenes, M., Meijer, J. R., & Huijbregts, M. A. (2017). Quantifying biodiversity losses due to human consumption: a global-scale footprint analysis. *Environmental Science & Technology,* 51(6), 3298-3306. https://doi.org/10.1021/acs.est.6b05296.

Winkler, L., Pearce, D., Nelson, J. et al. The effect of sustainable mobility transition policies on cumulative urban transport emissions and energy demand. *Nat Commun* 14, 2357 (2023). https://doi.org/10.1038/s41467-023-37728-x.

World Health Organization. International Classification of Diseases for Mortality and Morbidity Statistics (11th Revision). (2018). Available online at: https://icd.who.int/browse11/l-m/en (accessed February 11, 2022).

WWF (2024) Living Planet Report 2024 – A System in Peril. WWF, Gland, Switzerland.Yu, B., Zhang, J., & Fujiwara, A. (2013). Rebound effects caused by the improvement of vehicle energy efficiency: An analysis based on a SP-off- RP survey. Transportation Research Part D-transport and Environment, 24, 62-68.https://doi.org/10.1016/j.trd.2013.06.001.

Zoöp. (n.d.). *The Zoöp Model*. https://zoop.earth/en/.

Author contact: hoffl@hr.nl, rijt.r@buas.nl

SUGGESTED CITATION:
Felix van Hoften and Rob van der Rijt, “Why only innovations based on degrowth principles can stop further ecological and social destruction”, *real-world economics review*, issue no. 110, March 2025, pp. 10–24, http://www.paecon.net/PAEReview/issue110/HoftenRijt110.

You may post and read comments on this paper at https://rwer.wordpress.com/comments-on-rwer-issue-110/.

real-world economics review, issue no. 110
subscribe for free

Neoclassical Economics Drives Environmental Destruction and Social Inequality

Mark Diesendorf
[UNSW Sydney]

Introduction

Human activities have exceeded six out of nine planetary boundaries – climate change; biosphere integrity; land system change; freshwater change; biogeochemical flows; and 'novel entities', the latter including plastic and chemical pollution – and have almost reached another boundary, ocean acidification (Stockholm Resilience Centre, 2022). The main drivers of these impacts are the use of materials, energy, land and waterways.

Materials and energy use impact the environment via mining, manufacturing, transportation, consumption and waste. Land and waterways are impacted mainly by agriculture, mining and the spread of human settlements. While the substitution of renewable energy for fossil fuels will reduce greenhouse gas emissions from the energy sector and hence climate impacts, this substitution does not reduce the other environmental impacts. The continuing growth in global energy consumption increases pressure on all the planetary boundaries. Furthermore, it slows the rate of the energy transition-– renewable energy is chasing an increasing target (Diesendorf, 2022; Diesendorf & Hail, 2022) – thus increasing the risk of exceeding climate tipping points.

Global growths in the use of materials, energy and CO_2 emissions are each closely correlated with growth in consumption as measured by Gross Domestic Product (GDP) (Wiedmann et al., 2020). This can be disaggregated into growth in GDP per person and growth in population. As the rich countries and rich individuals have by far the biggest environmental impacts (Kartha et al., 2020; Chancel & Piketty, 2022; Oxfam International, 2023), the main growth of concern is consumption by the rich. Bruckner et al. (2023) show that large shares of environmental pressures and impacts resulting from consumption by the European Union are outsourced to countries and regions outside the EU, while more than 85% of the economic benefits stay within the member countries.

Neoclassical economics (NCE) theory and neoliberal economics (Monbiot & Hutchison, 2024) practice together form one of the principal driving forces of environmental destruction and social injustice. They do this by treating our life support system, the environment, as an add-on to the economic system, assuming that it is an infinite source of raw materials and an infinite waste dump. NCE and neoliberalism reinforce the capitalist commitment to endless growth on a finite planet that's destroying the environment.

Furthermore, NCE and neoliberalism spread the generally false notion that subsidies to the rich benefit the poor. Yet empirical research spanning 50 years in 18 OECD countries shows that tax deductions for the rich increase inequality while having no significant effect on employment or economic growth

(Hope & Limberg, 2022). To make matters worse, the rich Global North imposes a net drain of resources and wealth from the Global South (Hickel et al., 2022).

The proponents of NCE call their discipline a science. But its details are shrouded from the view of non-initiates by advanced mathematical models with little relevance to the real world. It uses terminology from physics – forces, equilibrium and efficiency – but without the scientific content of physics (Drakopoulos, 2016). From the viewpoint of natural scientists, there are no forces driving economies toward equilibrium – indeed economic equilibrium rarely exists, if at all – and the NCE concept of Pareto efficiency has no relevance to real economies (Diesendorf et al., 2024). The priests of NCE, certified by degrees in economics, disseminate its ideology among politicians, the public service, and the mass media. It has even created its own 'Nobel Prize', actually the Sveriges Riksbank (Bank of Sweden) Prize in Economic Sciences in Memory of Alfred Nobel.

NCE is believed incorrectly, by many people, to provide a solid theoretical basis for neoliberal government policies. These policies are based on the notions that government, its expenditures (apart from defence) and taxes should be small, and that major environmental, social and economic decisions should be left to the market—in other words, to the 1% or, more precisely, the 0.1% who control the market. Thus neoliberalism gives support to state capture by politically powerful vested interests (Australian Democracy Network, 2022; Diesendorf & Taylor, 2023, chapter 6) that influence governments to remove environmental constraints on the fossil fuel, mining, forestry, large-scale agriculture, aluminium and other industries, and to subsidise the rich.

From time to time, heterodox economists, and even occasionally NCE researchers, show that the underlying hypotheses of NCE theory, that are supposed to justify neoliberalism, are contradicted by observation; that NCE is inconsistent with Earth system science; and that it has internal contradictions. They point out that NCE failed to predict the Global Financial Crisis, although a few heterodox economists did (e.g. Keen, 2001, chapter 11; Keen, 2006; Cooper, 2015). They argue that NCE misuses GDP by treating it as an indicator of national wellbeing and welfare. While many neoclassical economists admit, when pressed, that GDP is an unsuitable indicator for this purpose, they often continue to use it as such.

Despite all its failures, NCE continues to dominate government decision-making in many countries. Dissatisfaction with NCE has stimulated the creation of new approaches to economics.

Alternatives to NCE

Behavioural economics, which is more psychology than economics, was developed because of the failure of NCE's *Homo economicus* model. Yet many neoclassical economists generally treat behavioural economics as a useful supplement to NCE theory, ignoring the contradiction it brings.

Political economy recognises the need to consider the role of political power in nominally economic policy decisions. In the face of the power of NCE, political economy at the University of Sydney had a long struggle for survival, eventually finding a place in the Faculty of Arts (Butler et al., 2009).

In the 1980s, the transdisciplinary field of ecological economics and its journal of the same name were created. Unlike NCE, ecological economics treats the economy as a subsystem of society, which is in turn a subsystem of the natural environment. Its researchers include enlightened economists, natural scientists, engineers, sociologists and lawyers. It is very different from environmental economics, a branch of NCE, that considers that environmental protection can simply be achieved by pricing in markets. Despite its attempts to become 'respectable' in the eyes of NCE, ecological economics is taught as a whole subject in very few universities around the world.

Although ecological economics has grown substantially over several decades, this has been achieved partly by allowing neoclassical-leaning economists to dominate the editorial board and content of the journal *Ecological Economics*. Concern about a possible takeover of ecological economics by NCE has led to a proposal for a new transdisciplinary field with a stronger emphasis on environmental protection and social justice, namely social ecological economics (Spash, 2020; 2024).

A New Critique of NCE

A new critique of NCE has been published recently by a group of sustainability scientists and an ecological economist (Diesendorf et al., 2024). The authors were motivated by the threat they see, posed by NCE, to our life support system, the natural environment, and to social justice. Since NCE claims to be a science and uses the language of physical science, it is appropriate that NCE be critiqued by natural scientists.

The paper by Diesendorf et al. (2024) first critiques 10 hypotheses that appear to form the basis of NCE and four additional claims made by many proponents of NCE. Because there are many definitions of NCE, the paper next focuses on one that's common to all versions, that of Arnsperger & Varoufakis (2006). The latter argue that three unproven assumptions define all variants of NCE: methodological individualism, methodological equilibration and methodological instrumentalism. These three hypotheses form a subset of the 10 hypotheses critiqued by Diesendorf et al. (2024).

The three basic but shaky foundations of NCE

The assumption of ***methodological individualism*** asserts that socioeconomic phenomena can be described in terms of subjective personal motivations by individual actors not influenced by other actors or society. But, in the real world, individual decisions are influenced by advertising, fashion, friends and relatives, laws and other institutions. Furthermore, methodological individualism cannot credibly explain major global problems such as climate change, war, limited global resources, poverty and pandemics. These involve complex socioeconomic and political systems in which the whole is greater than the sum of its parts—in other words, they have emergent properties.

The assumption of ***methodological equilibration*** asserts that economic systems are generally in or near a state of 'general equilibrium', where supply and demand are balanced in all markets. In the real world, boom and bust cycles and other financial crises demonstrate that economic systems are often far from equilibrium. Furthermore, the NCE theory underlying methodological equilibration depends on the notion that humans behave like *Homo economicus*, that is, they are entirely self-interested, consistently 'rational' in the sense of economics, can access and process all available information on prices etc., and can optimise their decisions. The notion of *Homo economicus* has also been refuted by findings in anthropology (Molina et al., 2017) and sociology that cooperation exists together with competition in all societies known to humankind. Economist Joseph Stiglitz (2018), applied mathematician and theoretical physicist John Blatt (1983), and others have shown theoretically that there is no assurance of equilibrium or optimality or stability in economic systems.

NCE failed to predict the Global Financial Crisis of 2008 and arguably its neoliberalism offshoot was responsible for that crisis. Practitioners of NCE evade responsibility for their many failures of prediction by resorting to the hypothesis of ***methodological instrumentalism***, which asserts that NCE's economic theories do not have to explain the real economic system or predict future trends, provided they are not contradicted by observation. From the perspective of the natural sciences, this assumption is an acknowledgement that NCE is useless, apart from its data-collecting role. As many of NCE's hypotheses and claims are refuted by observation of real socio-economies, by elementary logic and by lack of internal consistency, this supports the conclusion that NCE is not only useless but actually destructive.

Concluding Remarks

As well as critiquing the three basic methodological assumptions of NCE, Diesendorf et al. (2024) also critique seven additional hypotheses and four claims made by some neoclassical economists. The paper argues *inter alia* that the natural environment cannot be separated from the economic system; that NCE's concept of a Pareto efficient economy, used by neoliberals to oppose government intervention in the market, does not exist in the real world; that subsidies to high-income-earners do not generally trickle down to the poor; and that government budget deficits are not generally inflationary.

Critical examination of the refuted hypotheses underlying NCE shows that NCE fails to describe the behaviour of the real economies of industrial society. Each hypothesis fails to satisfy one or more of the basic requirements of scientific practice. NCE is fundamentally flawed, bad science, irrational in the common meaning of the word, and biased towards the rich and powerful. It damages democracy by giving support to state capture by vested interests. Therefore, it should not be used as a guide for government policies.

Acknowledgements: I thank Joachim H. Spangenberg and Thomas Wiedmann for valuable comments on the manuscript.

References

Arnsperger C, & Varoufakis Y (2006). What is neoclassical economics? The three axioms responsible for its theoretical oeuvre, practical irrelevance and, thus, discursive power. *Post-Autistic Economics Review*, issue 38, 2–12. https://www.paecon.net/PAEReview/issue38/ArnspergerVaroufakis38.htm

Australian Democracy Network (2022). *Confronting State Capture*. https://australiandemocracy.org.au/statecapture

Blatt JM (1983). *Dynamic Economic Systems: A post-Keynesian approach.* M. E. Sharpe & Wheatsheaf Books, distributed by Routledge.

Bruckner B, Shan Y, Prell C, Zhou Y, Zhong H, Feng K, & Hubacek K (2023) Ecologically unequal exchanges driven by EU consumption. *Nature Sustainability*, **6**, 587–598. https://doi.org/10.1038/s41893-022-01055-8

Butler G, Jones E, & Stilwell F (2009). *Political Economy Now! The struggle for alternative economics at the University of Sydney*. Sydney University Press.

Chancel L, Piketty T, Saez E, & Zucman G (2022). *World Inequality Report 2022*. World Inequality Lab. https://wir2022.wid.world

Cooper C (2015). 6 economists who predicted the global financial crisis. InTheBlack, https://intheblack.cpaaustralia.com.au/economy/6-economists-who-predicted-the-global-financial-crisis-and-why-we-should-listen-to-them-from-now-on

Diesendorf M (2022). Scenarios for mitigating CO2 emissions from energy supply in the absence of CO2 removal. *Climate Policy* 22, 882–896. https://doi.org/10.1080/14693062.2022.2061407.

Diesendorf M, & Hail S (2022). Funding of the energy transition by monetary sovereign countries. *Energies* 15, 5908. https://doi.org/10.3390/en15165908.

Diesendorf M, & Taylor, R (2023). *The Path to a Sustainable Civilisation: Technological, socioeconomic and political change.* Palgrave Macmillan. https://doi.org/10.1007/978-981-99-0663-5

Diesendorf M, Davies G, Wiedmann T, Spangenberg J., & Hail S (2024). Sustainability scientists' critique of neoclassical economics. *Global Sustainability* 7:e33, 1–13. https://doi.org/10.1017/ sus.2024.36

Drakopoulos S (2016). Economic crisis, economic methodology and the scientific ideal of physics. *Journal of Philosophical Economics*, 10, 28–57. https://doaj.org/article/652e750f7c794c5fb7ea99405630c10f

Hickel J, Dorninger C, Wieland H, & Suwandi I (2022) Imperialist appropriation in the world economy: Drain from the global South through unequal exchange, 1990–2015. *Global Environmental Change*, **73**, 102467. https://www.sciencedirect.com/science/article/pii/S095937802200005X

Hope D, & Limberg J (2022). The economic consequences of major tax cuts for the rich. *Socio-Economic Review*, 20, 539–559. https://doi.org/10.1093/ser/mwab061

Kartha S, Kemp-Benedict E, Ghosh E, Nazareth A, & Gore T (2020). The Carbon Inequality Era: An assessment of the global distribution of consumption emissions among individuals from 1990 to 2015 and beyond. Joint Research Report,. Stockholm Environment Institute and Oxfam International.

Keen S (2001). *Debunking Economics: The naked emperor dethroned?*. First edition. Zed Books, London & New York.

Keen S (2006). Steve Keen's monthly debt report November 2006 "The recession we can't avoid?". http://keenomics.s3.amazonaws.com/debtdeflation_media/2007/03/SteveKeenDebtReportNovember2006.pdf

Molina JL, Lubbers MJ, Valenzuela-Garcia H, & Gómez-Mestres S (2017). Cooperation and competition in social anthropology. *Anthropology Today*, 33(1), 11–14. https://doi.org/10.1111/1467-8322.12323

Monbiot G, & Hutchison P (2024). *The Invisible Doctrine: The secret history of neoliberalism (& how it came to control your life)*. Allen Lane.

Oxfam International (2023) *Climate Equality: A Planet for the 99%*. Oxfam GB, Oxford, UK. https://oxfamilibrary.openrepository.com/handle/10546/621551

Spash CL (2020). A tale of three paradigms: Realising the revolutionary potential of ecological economics. *Ecological Economics*, 169, 106518. https://doi.org/10.1016/j.ecolecon.2019.106518

Spash CL (2024). *Foundations of Social Ecological Economics: The fight for revolutionary change in economic thought.* Manchester University Press.

Stiglitz JE (2018). Where modern macroeconomics got it wrong. Oxford Review of Economic Policy, 34(1–2), 70–106. https://doi.org/10.1093/oxrep/grx057

Stockholm Resilience Centre (2022). https://www.stockholmresilience.org/research/research-news/2022-04-26-freshwater-boundary-exceeds-safe-limits.html

Author contact: m.diesendorf@unsw.edu.au

SUGGESTED CITATION:
Mark Diesendorf, "Neoclassical Economics Drives Environmental Destruction and Social Inequality", *real-world economics review*, issue no. 110, March 2025, pp. 25–29, http://www.paecon.net/PAEReview/issue110/Diesendorf110.

You may post and read comments on this paper at https://rwer.wordpress.com/comments-on-rwer-issue-110/.

real-world economics review, issue no. 110
subscribe for free

Absolute, global, authoritarian Capitalism: Approaching the last stop of the Capitalist Algorithm

Hardy Hanappi
[VIPER - Vienna Institute for Political Economy Research, and
Technical University of Vienna, Economics, Institute 1053]

No social order ever perishes before all the productive forces for which there is room in it have developed; and new, higher relations of production never appear before the material conditions of their existence have matured in the womb of the old society itself. Therefore, mankind always sets itself only such tasks as it can solve; since, looking at the matter more closely, it will always be found that the task itself arises only when the material conditions of its solution already exist or are at least in the process of formation.

Karl Marx, 1844

Abstract
This paper describes the features of the type of capitalism that will emerge if in the next five to ten years the ruling classes of today's major superpowers - the USA, China, and Russia - unite and form a global exploitative ruling class. The essential properties of this unification process are discussed in detail and it is shown why the potentially possible new stage of global capitalism has its faltlines.

Introduction

A substantial break in the trajectory of the capitalist mode of production seems to be in the air. Local wars pop up more often, warlords are acting as vassals in the enduring Cold War between the USA on one side and Russia and China on the other side. As described in (Hanappi, 2025), it can be expected that these turbulent rivalries between the three superpowers, between three military-industrial complexes of capitalism, will continue for the next five to ten years. If no nuclear Third World War occurs, then a state of absolute, global, authoritarian capitalism will have been reached. To describe the contours of this new type of capitalism, as well as the fault lines, the contradictions, along which it will break down - these are the topics of this paper.

The first three parts follow the adjectives of this newly emerging variant of capitalism, though in reversed order: authoritarian, global, and absolute. Each of these attributes has its roots in earlier forms of capitalism. Each part provides an overarching historical sketch interpreting how the current surge of authoritarianism is an untimely renaissance of older forms. The part on the adjective 'global' takes this interpretation one step further: Empires have a tendency to grow and to eliminate competitors, thus the number of concurrent empires decreases. As soon as only one large global empire remains the possibility of accumulating additional power by incorporating a rival has ended. This causes a qualitative change in capitalism's essential mechanism: From this point on it is reduced to its internal exploitation process, which means how to transfer the lifetime of exploited human individuals into the consumption of exploiters. The third part digs deeper into the problem of a global exploitation process. In particular, it addresses the combined questions of vanishing profit rates, vanishing psychological manipulation of the minds of the exploited in the poor South, and the lasting impact of the quickly deteriorating environmental conditions on which the survival of the production system of the human species has to be reframed. It turns out that the aspiration of capitalism to be 'absolute' is nothing but the nightmare of a global racist neo-fascism, the dream of an - 'evolutionary necessary' - division of the human species into superhumans (formerly known as the Arian race) and exploited sub-humans. The latter being evolutionary domesticated at a level somewhere between animals and superhumans.

The concluding part of the paper is devoted to showing that the impossibility of racist neo-fascism indeed marks the end of the contribution of the capitalist mode of production - its power to massively increase labour productivity - to the long-run evolution of the human species. The high level of labour productivity reached via scientific progress and the division of labour as absolute, global, authoritarian capitalism is starting to negate itself[1], which will enable an epochal turn in human history. A turn that gets rid of the *capitalist algorithm* at global as well as at a local level. The ideas on how this change might look like are themselves outcomes of the basic contradiction of this last stage of capitalism.

Authoritarian

Even in the smallest and earliest communities of human tribes a certain *diversity* of individuals has been present. It indeed is reasonable to assume that it was this diversity in skills and physical abilities, which enabled this species to achieve an astonishing level of flexible response to overcome new and dangerous challenges. Of course, it also needed the development of other abilities to harvest the fruits of a tribe's diversity; it needed organisation, it needed groups of individuals, who were able to put the puzzle pieces of the different individual sub-groups - of the potentially fruitful division of their activities - together. These leading architects of a tribe's life had to have a common communication tool, a language, which is understood by all members. They also have to prove that their designs benefit the whole tribe - at least in most cases. As long as such leaders succeed, they are *given* authority by the members following their suggestions[2]. This type of authority has to be distinguished from the type of authority, which an authoritarian person *orders* from his followers. Of course, there will often be an interplay between given authority and ordered authority if the leadership is socially beneficial and the status of being an authority provides certain privileges to its carrier.

1 It is highly speculative to predict how many years absolute, global, authoritarian capitalism can exist. The classic historic example, Hitler's propagated '1000-years empire', lasted seven years. But this attempt still had surrounding competitors, which promised external expansion. Elon Musk's dream of an expansion to the Mars is a too far-fetched fantasy to compensate for the finiteness of today's world.

[2] Such a positive assessment of outstanding organisers of production processes are the core of Schumpeter's praise of entrepreneurs (Schumpeter, 1911).

In early societies, when leadership was closely related to physical strength, the strongest man[3] was often given the authority to lead a group of warriors. The most visible era of this phenomenon was the slaveholder society and its follow-up, the early Middle Ages. In a feudal regime, the king has the dominant military power, he and his court extract lifetime - in the form of labour time, corn, and money - from the population of the country. In return for these privileges, the king and his warriors provide some stable *social institutions*: They defend the country if neighbouring countries try to conquer part of its territory and will try to conquer foreign land, promising to their compatriots that parts of the stolen prey will trickle down to them. The feudal class maintains a standing army as the centrepiece of its social institutions.

Parallel to its hierarchical military setup it arranges an ideological social institution, a religious hierarchy of priests allowed to participate in the exploitation process. In the long run, both hierarchies have experienced a trend from given authority towards ordered authority. The class of exploiters, which developed out of privileged warriors and their accompanying religious leaders, cemented its position through several social institutions that constituted a *state*, a political unit governing a well-defined territory[4]. The idea of authority ordered by a ruling class with the help of its social institutions worked well for hundreds of years - with different paralleling religions and diverse compositions of the ruling class. It only started to crumble when the progress of monetary systems allowed - and called - for a change in the inheritance algorithm of membership in the ruling class: When money turned into capital, when rich merchants without noble titles started to be more powerful than many feudal authorities, membership in the ruling class freed itself from the fetters of genealogy. It is this turning point towards a new mode of production - capitalism - which gave rise to a new desideratum: *freedom*, freedom from feudal oppression[5]. With the capitalist mode of production, the authority of the exploiting class began to get rid of its territorial borders - a reminder that before capitalism production meant mainly agricultural production. The authority of a large amount of capital lost its direct link to a human individual, it became impersonal. Of course, there were close links from the dominant accumulated accounts of capital to the human individuals who appeared as its shareholders, but the imperative to maximise growth was an innate property of the former. Capital accumulation as an impersonal authority was inscribed in the new mode of production from its very beginning onwards.

Nevertheless, after World War 1, which ended the political leadership of the feudal class, there still existed different large countries each being the home base for several large capital groups. Accumulation had mainly two options: First, the usual exploitation process - expropriate lifetime from workers and via markets transform it into profits -, and second, the possibility of taking over competing capital groups, a process called centralisation of capital. To keep the negative effects of competition between capitalist firms at bay and simultaneously enhance the power of the capitalist state's bureaucracy, the capitalist state - characterised by Karl Marx as the *executive committee* of the capitalist class - the state's agenda increased tremendously. In the USA the authority of President

[3] If the evolution of two different biological sexes in mammals, one giving birth to offspring, the other one caring for food and security, might be considered as a forerunner with respect to the evolutionary advantages of divided activities within the same species. In the history of the human species male leadership dominance in the group of warriors had occurred more often than female dominance.

[4] In his thorough study of the long-run development of countries Daron Acemoglu sets his focus on the different stages of these institutional arrangements that accompany technological advance, but misses to address the underlying processes of exploitation and class struggles, compare (Acemoglu and Johnson, 2023).

[5] When Engels, interpreting Hegel, suggested that 'Freedom is insight into the necessity', he was aware that any post-feudal state would have to rely on a network of social institutions too. To be free thus was for Hegel (Hegel, 1830, §147) and Engels (Engels, 1878, p. 106) to *realize* and to *accept* those social institutions that are *necessary*.

Franklin D. Roosevelt, nicknamed the 'blockbuster', allowed him to tame the large American corporations. In Europe, industrial circles in Germany turned to the fascist alternative of Hitler's national socialists to prevent the further rise of the influence of working-class social institutions. And in the sequel Hitler used them to prepare his war. The German and Italian examples of classical fascism show how an authoritarian nationalist regime can emerge. It needs a charismatic leader on top of a disciplined and single-minded social movement[6] plus sufficiently sophisticated information technology managed by psychologically apt marketing personnel. The fascist type of authoritarian relationship achieved a new quality: The power of the single nationalist leader reached an unprecedented level, and at the same time his followers in his movement underwent a deep streamlining and brainwashing, which made most of them immune to outside influences. In other words, ordered authority reached its maximum, while given authority fell to its most perverted level[7].

The defeat of Hitler and his allies in Europe and Japan implied a turning away from too extreme authoritarian forms of governance in the Western Hemisphere after 1945. The political style of politics in the USA typically continued as an alternating competition between Republicans and Democrats, a pattern mirrored in most Western European states. The Republicans in the USA corresponded to Europe's conservative parties and the US Democrats in several aspects resembled the more progressive aspirations of Europe's social-democratic parties. In the longer run balance between alternating conservative and slightly more progressive governance, the reconstruction period after the war turned out to be surprisingly welfare-increasing. One element of this three-decades-long process is often overlooked: The fact that in advanced industrialised economies an increasing share of goods and services, which households consume, are becoming public goods provided by the state. At the end of the period, this share in Europe often exceeded 40% of consumption. This changed the way in which *authority* in this re-emerging form of integrated capitalism was perceived. It now was the grown network of all social institutions, the state, to which authority had to be given - and from which authority was ordered. Class struggle was transferred to conflicts within the state, within the social institutions. Around 1980 this sublimated class struggle that had led to a loss of power for firm-owning entrepreneurs and bankers - and a corresponding rise of the power of bureaucracies with mixed-class origins - finally erupted in a political shift towards conservative governments led by authoritarian, almost charismatic leading authorities: Margaret Thatcher, Ronald Reagan, and Helmut Kohl. The political concept of a strong conservative leader was in play again. The strongest influence of the force of the new concept of strong leadership came from the USA, where Ronald Reagan could pose simultaneously as the personality at the helm of the strongest military power in the world. The US military had not participated in the surge of integrated capitalism anyway.

From that time onwards exposing a conservative leader to shift the power balance to the political right - fighting bureaucracy and 'exaggerated' demands of employees - is a successful strategy of the core of the ruling class (firm-owners and military).

As these leaders were chosen more and more professionally, they could be selected according to their professional expertise: Starting with Ronald Reagan, an actor in some Hollywood B-movies, the

[6] The psychological characteristic of individuals that are seducable by an authoritarian leader has been extensively investigated by Theodor W. Adorno, see (Adorno, 1950). Parallel and related to this psychological disposition the socioeconomic situation of very high unemployment in the two countries that had lost the war and were hit by the Great Depression of 1927 certainly played a decisive role.

[7] How in a certain cultural environment perversion could become a mass phenomenon was the topic of Wilhelm Reich's early work in the interwar period (Reich, 1933).

presented leaders degenerated to well-trained marionettes performing for the actually leading industrial and military circles of the ruling class[8].

However, this change in the choice of leading characters is only the less important element in the new quality of the authoritarian relationship that occurred in the last 40 years. As so often in human history the decisive dynamics stem from the emergence of a truly global *economic* production system. The increasing power of the state has been paralleled by a tremendous increase in the size and power of multinational firms - most of them with a home base in the USA - allowing these two types of power centres to construct a network of truly global value chains[9]. Considered in economic terms, class struggles inside nation-states were transforming into a global class struggle between the rich North and the poor South[10]. This high degree of size and interwovenness of production activities of the human species had a dramatic consequence for the whole population: It stumbled into an *age of unprecedented alienation*. No single individual, no single firm, has the potential to grasp how the global production system produces its goods; but at the same time - at least in the rich North - all these products and services are mindlessly consumed. In the poor South, all that is perceived is its stagnation of welfare relative to the still prospering rich North, and its seemingly unexplainable underdevelopment. After 40 years these blatant contradictions now produce a new quality of authoritarianism. In both hemispheres, north and south, the alien mystery of mankind's global production system evokes radical and at times somewhat erratic mass movements.

In the rich North, the 'West', the achieved level of living conditions during the last three decades has been slowly going down, a fact that the average citizen could only feel, but not really explain. Neither could any of the traditional political parties. With the four global crises since the new millennium started (financial crisis in 2008, migration crisis in 2015, coronavirus pandemic in 2020, climate catastrophe since 2024) people in the rich North are developing a general mood of angst, of being afraid to lose the living standard they still enjoy. This fear is well-founded[11]. The next economic downturn, starting again with a financial crisis and bankruptcies resulting in mass unemployment, is probably just around the corner. Without explanation and helpless in front of the existing national networks of the powerless social institutions of national capitalism, the population has no choice but to become prey to radical 'populists'[12].

The marionettes on top of modern states - as far as central economic questions are concerned - basically follow the directives of the military-industrial complex, the core of the ruling class, which directs them. But they also need a visible mantra, that could be easily understood by their followers. Like in the interwar period, the preferred choice is the praise of ***nationalism*** paired with ***hating***

8 Their roles can be quite diverse: From the hard-boiled cowboy (Reagan), via the smart young business man (Toni Blair, Boris Johnson), the nation's 'Mutti' (Angela Merkel), the straight military executor (Vladimir Putin), the unbending warlord (Volodymyr Zelenskyy, curiously enough a former cabaret artist), up to a former talk show host (Donald Trump). The list is only a selection.

9 As a consequence exploitation at the factory floor has been supplemented, in the rich North even surpassed, by exploitation by exchange rate policy.

10 Compare (Hanappi, 2019b).

11 Compare (Hanappi, 2020).

12 'Populism' is a completely misconceived concept, constructed to damage scientific discourse. It serves to denounce the populace as being stupid, being open for wrong interpretations of reality put forward by a 'populist' seducer - and thus circumvents to explain how and why the seducers explanations are wrong, what a better explanation should consider.

foreigners. For the authority of the marionette, this opens up a certain ambivalence: His or her[13] mantra might fit well with the angst of large parts of the domestic population, but it encounters resistance from parts of the industrial base steering governance from the background. Most production processes are already global affairs and therefore work across nations, with free movement of necessary workforce between countries and continents. This leads to the conclusion that on the way to an absolute, global, authoritarian capitalism the marionettes will be exchanged by their military-industrial complexes more often than they like. This will in turn lead to growing frustration with national leaders in the electorate, political actionism outside the usual party system will increase in the rich North too.

In the Soviet Union nationalism was part of the self-image since the time when Stalin took over from Lenin[14] in 1924. Stalin had enforced it theoretically with his text on 'Nationalism in One Country' - openly contradicting Marx's insistence on the necessity of an international revolution. In the war against Hitler, this nationalist characteristic of Stalinism became even more deeply ingrained in the minds of the Russian population. The type of hierarchical organisation of the communist party and its accordingly hierarchical social state institutions produced a mirror image of a hierarchy of strict belief in authorities at higher levels. Till the breakdown of the Soviet Union in 1990 the authoritarian structure in Russia - in politics, economics, and ideology - had not experienced any serious challenge. Then, under Jelzin, Russia openly redefined its economic setup as a 'market economy'[15], though still with tight control of economic processes by the centralised state power of the unchanged military-industrial complex. As a consequence, when Putin came into power in 2000, Russia was a capitalist political entity without any remains of the original aspirations of Marx's and Lenin's communist ideas. From this perspective, it is only straightforward policy that Putin, as central executor of the Russian military-industrial complex (its ruling class), amplified the usual ingredients of powerful, authoritarian marionettes of a capitalist state: excessive nationalism and a revival of the links to the traditional ideological pendant - the (orthodox) Christian church. With the advance of NATO towards the western border of Russia during the last two decades, Putin's efforts to keep his political unit together became more and more desperate - and nationalist rhetoric and 'military operations' surged[16].

A similar development took place in China, though with different timing and special characteristics. While Red China emerged much later than the Soviet Union - only in 1949 - its turn towards a 'market economy' occurred earlier than in Russia. In 1976 Deng Xiaoping became the new leader and his new slogan was 'It doesn't matter if a cat is black or yellow, as long as it catches mice'. The 'cat' evidently is what I call the 'capitalist algorithm' and what it catches, the 'mice', is profit. With Deng Xiaoping, the accumulation of capital started to be the prime goal of the Chinese economy, the naming of this policy was only an arbitrary convention. After 50 years this combination of capitalist economics and highly centralised and rigid political governance proved to be an exceptional economic success story. In retrospect, it is at first sight visible that China has chosen a less rigid path towards the Western type

[13] Female 'populist' leaders in Europe are no exceptions anymore: Marine LePen, Giorga Meloni, Alice Weidel. The first conservative role model had been Margaret Thatcher.

[14] During the Zar regime, before the Russian revolution, a strictly authoritarian organisation of Lenin's party organisation was pivotal for its survival. After the revolution things had changed, but the authoritarian setup never was adjusted. Instead, Stalin strengthened it.

[15] The label 'market economy' is misleading, since it extends the force of different demand mechanics to the existence of a general independent, metaphysical social subject, which is able override all social institutions.

[16] See (Hanappi, 2022b) for a more detailed description of recent developments.

of capitalism. Instead of Stalin's brutally enforced industrialisation, Mao Zedong followed a policy of 'walking on two feet', which meant allowing agriculture a comparably important role as the industry. With the new policy since 1976, in particular, since the globalisation push of the West, part of the central *economic* authority of the Chinese government was given away to large foreign corporations in the rich North. They could use the cheaper Chinese workforce within China to transform intermediate products imported from other third-world countries to finish them and finally sell them worldwide. How successful this procedure worked became visible in the first decades of the new millennium. The economically useful split of authority even could be found in the decision of China to finance the U.S. government debt. It is the paramount importance of economic usefulness - as opposed to the military and political goals in Russia - which makes the sharing of authority for China - and with China - easier. Nevertheless, it has to be kept in mind that the limits of this additional economic flexibility are still set by the apparatus of the Chinese Communist Party.

China's state-directed capitalism is different to the Russian model and despite the closer links to the USA, it is also very different from Donald Trump's new vision of the US model. As the Chinese example shows domestic class struggle and the stability of authoritarian relationships can be maintained as long as the living standards of a sufficiently large majority of the population are increasing. In Russia, it can be seen that even with worsening living standards a proportional increase in surveillance, police power, and media manipulation can keep a state-capitalist regime in power. In this case, due to the additional force used, authoritarian relationships will even become more rigid. Finally, the situation in the USA under Trump now is highly explosive. He seems to be closer to the Russian style, reckless implementation of commands that are not allowed to be called into question. On the other hand, the marionette Trump still depends on the core of his ruling class, the leaders of the US military-industrial complex. For them, it is a bad strategy - though eventually a good tactic - to disturb and break up global relationships. But in the longer run the US military-industrial complex wants the central role in the emerging absolute, global, authoritarian capitalism. And to achieve that Trump's MEGA policy is too short-sighted, it only aims to be the Primus inter Parias of still existing three global powers. To be the unchallenged leader in a global ruling class of exploiters it is necessary to remain open enough to enslave the rest of competitors. Therefore, it remains to be seen how long Donald Trump can survive this widening gap between his short-run activism and his role as a representative of the military-industrial complex.

Today authoritarianism is an outstanding property of all three superpowers - USA, China, and Russia - in the world. If the ruling exploiting classes of these powers unite, then it can be assumed that authoritarianism is here to stay. Of course, global authoritarian governance will have to introduce additional levels of hierarchy, accompanied by institutionalised procedures for decision-making, and the like. Nevertheless, going global will not change the prevalence of *authority ordered* compared to *authority given*. One important reason for the continuation of suppressed democratic decision-making stems from the environmental limits that the global production system currently is reaching. The often praised 'consumer sovereignty' - which in reality was mainly a firm owner's sovereignty - will have to be restricted to guarantee the survival of the species. This process has already started; it is one element of the more general set of limits, which the accumulation process now has started to meet at a breath-taking fast speed. Our world is characterized by being finite, we learn now. More than *global* is not possible - Elon Musk's fantasy of planetarian escapes is just the dreamworld of a twisted mind.

Global

Authoritarianism can take on extreme forms, the scale of its brutality is open to different forms of empirical measurement. But it is not limited by physical constraints, it remains in the sphere of social relationships. The fascist regime of Nazi Germany was certainly an example of a most authoritarian society - the few still living victims describe it often as 'hell', as a zenith of authoritarian despotism and torture. But what distinguishes authoritarianism from the growth of territories ruled by the capitalist algorithm is that the habitable area of planet Earth is *physically* finite. It is evident, that this territorial finiteness will be a limit, which forces the capitalist algorithm to change[17].

The relentless drive towards territorial expansion was already present in the earliest stage of capitalism, in merchant capitalism. The Dutch and the following British trade empires typically reached out to other continents for profitable conquests. The worldwide division of production - often taking products from the periphery to the centre that could not have been produced there, and vice versa - resulted in two different effects: (1) The overall labour productivity, the average time needed to produce a commodity, was lowered. (2) in the centre the diversity of consumption goods of the ruling class was increased, a trade-based effect of what later was called innovation. Both effects constitute what one could call the (beneficial) *historical mission of capitalism*. Less beneficial were the emerging class struggle of the victims of a re-imported slavery mode of production in America, and the wars between the conflicting colonial powers. Worldwide 'merchant capitalism' *in one country* was a contradiction in terms. Fights to become the global hegemon of merchant capitalism were inevitable. In the second half of the 18th century, a very special type of contradiction fuelled by British merchant capital led to a new dimension of capitalism's evolution, which led to industrial capitalism: The enormous growth of profit, which the two large trade triangles of the British Empire - one with India and one with America - shuffled back to England at some point surpassed the possible growth rate of the production of manufactured goods on the island, the commodities which were necessary to keep the trade triangle rolling. And this quickly widening disequilibrium was the major reason for the spur of technological innovation - first in the textile industry and later in most other British industries. Technological innovation, and new production processes, gave capitalism a new push by reducing labour productivity on the factory floor. In the sequel these new production techniques also induced the emergence of new products. Industrial capitalism revived the historical mission of capitalism[18]. However, the downside of this historical mission of capitalism for the human species soon became dramatically visible. In the 19th century the impoverishment of workers, of the class of the exploited, had grown into a crying contradiction to the wealth of bourgeoise capital owners, and even more so compared to the feudal class, which still commanded the politics of the leading European countries[19].

The drive to territorial expansion during merchant capitalism continued during industrial capitalism. An instructive example is the race between Britain and France to occupy territories in Africa. While in the beginning gaining territory for a feudal state mostly meant having additional agricultural area (and its exploitable population) at its disposal, now industrial capitalism enlarged expansionary goals. It now included access to all industrial inputs and in particular the military might of the respective feudal class. The latter evidently is the hotbed of nationalism. The clash in World War 1 to a considerable extent

[17] The capitalist algorithm has been explained in detail in (Hanappi, 2013). It evidently has forerunners in the behaviour of empires and societies before 1500, but only with merchant capital and the emergent acceptance of a globally valid currency of a hegemon it gained the significance it has till today. Compare (Frank, 2008).

[18] The story of the historical mission of industrial capitalism is what Adam Smith in his economic classic in principle describes as England's success story - without mentioning the pivotal role of slavery trade and rivalries between colonial powers. See (Smith, 1776).

[19] When in 1848 the bourgeois revolution broke out, Karl Marx thought that all non-feudals under the lead of the exploited working class would be able to get rid of the politically leading feudal class, see (Marx and Engels, 1848). It did not happen - and against his prediction of a shortly approaching global proletarian revolution, the abolishment of feudal political leadership had to wait till World War 1.

was founded on the fact that Germany and Austria were excluded from the distribution of colonies that Britain and France already had conquered. The amount of possible colonial conquests was as limited as the habitable area of the earth is today. With such a limit, there only remains the alternative of taking away land from rivals by declaring war, the new ideological weapon of nationalism used by feudal governments, made WW1 a war between nations[20]. This first wave of geopolitical expansions and the catastrophic event that emerged when these dynamics reached a limit they could not trespass is very instructive with respect to the geopolitical expansion of the three large superpowers since the end of WW2. In particular, the recent surge in nationalist ideology is a direct parallel to the late 19th century.

However, what has to be kept in mind is that important additional insight into the dynamics of an expansionary social system that meets a sudden physical constraint can be gained from a study of the interwar period, namely from the rise and sudden fall of classical fascism. When nationalism turned into full-fledged fascism in the thirties of the last century a whole plethora of parallels to current developments will catch the eye. Nevertheless, one particular feature of classical fascism has to be highlighted in the context of globalisation: When fascism came into power it *closed* the view of the world visible for its domestic population, it blinded them. It was extreme in its ideological capacity to narrow down the mindset of its followers, to manipulate them to mistake the fascist vision - racism - as a necessary *global* endpoint of human evolution. It is this outstanding influence on the *single minds of its followers* that justifies the adjective 'absolute' for classical fascism. The following part of this paper will further elaborate on this bridge to *absolute*, global, authoritarian capitalism.

After WW2 the number of competing capitalist rivals in the global political economy shrunk substantially. Only three superpowers are now remaining, the USA, China and Russia. In military terms, the USA is the military alliance NATO, which includes the European peninsula[21]. The special links between China and Russia also have to be inspected carefully. Contrary to the first five decades after WW2, when Russia was more powerful than China, the new millennium reversed their respective status. China now has a more diverse economy than Russia and living standards are higher than in Russia. Moreover, China now has privileged links to both of its competitors: energy and military-related to Russia, finance and business-related to the USA.

If the ruling classes of the three superpowers manage to *build a new global capitalist ruling class* the process of globalisation[22] has reached the end of the flagpole. It can be assumed that at this point the energies used for rivalling capitalist actions will stop, and will turn towards achieving the highest possible and most stable exploitation process of the globally exploited working population. Such a turning point can be assumed to lead to severe qualitative changes in the global political economy. In the last part of this paper, the resulting contradictions will be briefly described.

Most of the qualitative cracks in the brave new world of absolute, global, authoritarian capitalism can be better understood if the dynamic processes leading to its emergence are considered more closely. The thirst for more territory and more power of a still somehow local state seems to carry a deeply human stance. In a rather vague jargon, this suggestion often is summarized as a *drive to grow*. It

[20] As Hobsbawm convincingly explains, nationalism is a phenomenon only emerging in such strength in the 19th century, (Hobsbawm, 2021).

21 There are only very few small non-NATO members in Europe. The Supreme Allied Commander Europe (SACEUR) of NATO-Europe always is a US General; since 2022 it is General Christopher G. Cavoli. While the European Union certainly is a heavyweight in economic terms, it is subordinated - and will remain subordinated - to the superpower USA as an independent player in global political economy.

22Compare the companion paper (Hanappi, 2025).

cannot be denied that living systems do exhibit behaviour, which helps them to maintain their functioning. Since Charles Darwin[23], it has been common knowledge that species evolve by adapting to their environment. Note that Darwin's theory of evolution refers to *species* and not to individual members of a species, thus the classic book on evolutionary theory already insists on the primacy of the group over the consideration of isolated individuals. For the human species, it is an empirical fact that the size of this group for almost its entire existence in the last 2000 years was rarely growing, its adaption processes rather had to focus on surviving. 'Uncertain estimates indicate that during the entire first millennium of the Common Era, the world's population had either declined slightly, had remained stationary, or had grown by no more than about 50%.', writes Vaclav Smil, (Smil, 2021, p.8). The economically dominating amount of worldwide agricultural production which accompanied the demographic stagnation was correspondingly low: 'Best reconstructions put average annual growth rate of the global economic product at just 0.01% during the first millennium of the Common Era. At that rate, the total product would take seven millennia to double, and even an order-of-magnitude improvement during the next 500 years brought the rate to only about 0.1% with doubling still taking seven centuries.' (Smil, 2021, p. 10). In other words, the economic and demographic *growth of human societies* is a phenomenon which only started around 1500, at the time when the first stage of capitalism - merchant capitalism - emerged. As far as the growth imperative of the human species is concerned, it is thus clear that it is the growth of capital, the accumulation of capital, which is meant. Classical British political economy, from Adam Smith to Karl Marx, held that capital is dead labour[24]. The factories, built as well as the abstract production technologies used there, as well as institutionalised class relations, which allow the factory owners to employ workers at low enough wages - all these elements of capital have emerged because time - labour time - has been spent to produce them. The dynamics, which bring the accumulation to life - all variants of the capitalist algorithm - are the conditio sine qua non of capitalism. Rising labour productivity, the condition that output grows faster than labour time input, is the traditional central mechanism with which the production apparatus of the firms of *competitive* capitalism has been fulfilling its historical mission. Via the capitalist algorithm, the growth of dead labour becomes the dominant force that governs the capitalist mode of production. If competition between different capitalist military-industrial complexes ends because there is only one globally ruling class, then the historical mission is over. Thus, as growth started with capitalism it is straightforward to ask if it will end - or at least be qualitatively transformed - with the end of the capitalist mode of production. This topic will be returning in the last part of this paper.

Growth itself is an abstract concept. It is the name for the change of a variable over time. A variable - the modern use of this methodological tool goes back to Descartes[25] - is a unification of two opposing elements: a continuing constant name points at an everchanging (often quantitative) momentaneous state of affairs. In capitalism, it is the growth of capital, which is the motor behind its transformative social mission. The historically evolving measurement of capital[26] - typically made discernible as the currently observable amount of *money* (in the jargon of finance the '*present value*') - allows to compare measurement results at two succeeding points of time, which then indicates profits made during that period. If measurement in quantitative terms, e.g. in US $, succeeds, the highly abstract growth rate of capital then is just the quotient between profits divided by the amount of capital at the earlier point

23 Compare (Darwin, 1859).

24 'Economy of time, to this all economy ultimately reduces itself.' (Marx, 1857, notebook 1, The Chapter on Money).

25 Compare (Descartes, 1637).

26 As the description of the elements of capital (briefly mentioned above) shows, the measurement of capital is an extremely difficult task. Think only about the problem to include the tide of class struggles in a monetary oriented evaluation of expected capital accumulation. Financial engineers do have a hard time.

of measurement. This clearly is not one of the natural constants of physics. It is a metaphysical construct that can be used to describe the advance of this special mode of production, of capitalism, *during its historical mission*.

As a consequence, reaching total globalisation with no remaining capitalist competition between different military-industrial complexes - and some smaller economic units within their network - will result in a stagnation of capital accumulation. Growth in the traditional meaning will become zero. This truth will take some time to work out, but a qualitative change in what can be used as essential variables, necessary to characterise the next mode of production, can be expected.

Nevertheless, the use of growth rates to describe dynamics will not vanish. As long as the notion of time is relevant, it only is the question: Growth rates of which variables are to be described? The physical limits of the planet on which the human species lives are finite and in several dimensions they will be reached soon. This is the Sword of Damocles hanging as an environmental catastrophe over mankind's near future.

Though our natural environment teaches us its limitations with ascending stress, there also exists uncharted land concerning the internal model-building processes in the brains of human individuals. At the surface, this issue can simply be the *belief* that new inventions, and new technical skills, will always be able to master the problems posed by mankind's environment. At a deeper level, the *intricacies of the minds of large groups of human individuals* and their behaviour - integrated into a technical communication network as an organised social movement - are the most recent phenomenon that the capitalist mode of production has produced. It is this turn of capitalism since the pivotal revolution of mass hysteria, which classical fascism with the help of broadcasting was the first to be able to produce, which reappeared after WW2 in different forms of massive public information sphere pollution, and which nowadays is taking hold as the seemingly technological fashion of AI applications; it is this turn, which transforms capitalism into what I call *absolute* capitalism.

Absolute

For most of their existence, human groups lived in a comprehensible environment. During the lifetime of a human individual, it had to follow a set of more or less predefined actions, it had to learn to use the tools it needed and regularly communicate with no more than a few dozen other individuals. In the 20th century, in the rich North, these circumstances changed dramatically. The Great Depression, which started in 1929, caused extremely high unemployment rates in the USA as well as in Europe. The desperation of the unemployed in those European countries, which had lost WW1, in particular in Germany and Austria, was additionally amplified by the continuing burden of reparation payments that left no room for a perspective of a prospering future. This situation opened up the possibility for the emergence of fascism as the most extreme form of nationalism[27]. How important the receptivity of the mass of unemployed workers for the rise of fascism was, can be immediately seen if the success of the Nazi party at elections in 1928 (2,6% in Germany) and 1933 (37,4% in Germany) is compared[28].

Macroeconomic determinants - like a global financial crisis that leads to mass unemployment - therefore lead to predispositions in the ways in which individual members of this mass are able to

[27] The forerunner of Mussolini's Italian fascism followed a somewhat different path. Compare (Moiseev, 2024) to discover the much more subtle roots of Italian fascism.

[28] For more details see (Hanappi, 2022a, pp.76 - 87).

interpret their own situation. With the modern mass information technology, which started with Hitler's broadcasting of his speeches in the 30-ties, an *interwoven communication spiral* became possible: The limited scope of direct personal communication usually always leads to small personal bubbles of information exchange. They provide the feeling of a cosy home of familiarity, of homeland. Even more intimate, from the radio in the living room, the 'Volksempfänger' continuously spreads Hitler's interpretations of what is relevant to understanding the global political economy. The personal bubbles then act as amplifiers for the technologically distributed worldview. If there are enough of such bubbles (remember the 37,4 % of votes in 1933) a fascist leader might be able[29] to use a democratic voting procedure to get rid of democratic voting procedures. If this works, he can gain full control - monopoly - over technological, one-way mass communication. With an appropriate design political entrepreneurship of a fascist leader can use the feedback from the individual micro-units - his voters - to arrive at his or her desired goal: fascist dictatorship. The increasing oligopolisation of mass media is propelling the described spiral. Nevertheless, there is an important hurdle on the way to this goal, which has to be mastered. Political economy does not consist of battles in the communication sphere only. There still is an ongoing class struggle in the European countries of the interwar period. While it is useful for a fascist movement to remain ambivalent during the first upswing of its development, there comes the moment when it has to take sides, when it has to find a large enough fraction of big industry for its support in economic terms. As soon as that happens, the new fascist military-industrial complex[30] turns fiercely against all working-class organisations. In the second half of the 30-ties Germany and Austria can be considered as classical examples of *absolute* fascism. There had been technological possibilities coinciding with a large enough group of disoriented and despaired people, a handful of political entrepreneurs with a strategy, and the majority of powerful collaborators in the ruling class *of the nation*. That was all it needed in 1934.

The special character of classical fascism stemmed from the fact that it appeared while there was still a vivid collective memory[31] of WW1, a memory of the general mood of aggressive nationalism adding to the rivalry between the different ruling classes of European countries the aggression of their populations of ordinary citizens. This was how nationalism could so easily develop into fascism[32].

In the current development towards absolute capitalism, many of the just-described features of the interwar development of classical fascism can be recognised. But as the already globalised production system foreshadows nationalist rivalries will be suppressed as a global ruling class is forming. This is bad news for the contemporary clique of leaders counting on steering up nationalist feelings in their countries. Today's leading nationalist, Donald Trump, has already started to feel the heat from part of the military-industrial complex that brought him into power. Capital needs its global reach.

[29] The more political parties compete in such an election, the easier it is for a fascist leader to achieve his or her critical ratio. The fragmentation of parties in turn will depend on the confusion, the above mentioned level of alienation, in the population.

[30] The case of Germany in the 30-ties again is very instructive. From the industrial side the steel industry envisaging an upswing of weapons production could join frustrated old military leaders, which never had accepted the loss of WW1. A year after Hitler had arranged his secret meeting with industrialists in 1933, he started to dissolve his more worker-oriented organisation SA.

[31] For the term 'collective memory' compare (Halbwachs, 1950).

[32] During Garibaldi's time, in the middle of the 19th century, nationalism still could play a partially progressive role in social development; it allowed for the emergence of political units that provided some common infrastructure in health, language and education, which were signalling the need for public goods.

Nevertheless, two other elements that justify the adjective '*absolute*' for the interwar period in Germany and Austria today are as important as they were then: (1) The massive jump in communication and information technology, which throws human societies on a completely different track of future evolution. (2) The deep influence of the 'state apparatuses',[33] which - with the help of the new technologies - imprinted the capitalist algorithm in the minds of almost every citizen in every country. Of course, this now is not the pride of being a member of the Arian race, it now is a completely mistaken belief in individualism: Each member of the human species is solely responsible for her or his individual fate; there is no exploited class and as a consequence, there is no exploiting ruling class. While the content of this deep brainwashing is different to the one in classical fascism, the strength of its impact is as strong as the historical example.

The *absolute* capitalism towards which authoritarianism and globalisation are driving us, thus will rest on **two pillars**: An overarching global communication and information **technology** and an accordingly amended, reframed **global class structure**.

The first element is easier to understand. It can be derived from Marx's notion of *productive forces*, which outgrow the production relations. The fundamental impacts of communication devices like smartphones are already stupifying social science researchers. Nevertheless, it still remains unclear in which direction a knowledge base of a major part of human knowledge - an extended Wikipedia - that is instantly available to each human individual on earth might lead us. How can such a knowledge base be used - think of the necessity of appropriate education of users - and misused - think of the manipulative force of the owners of such a knowledge base, e.g. in the context of the current AI hype? The contemporary conflicts between already authoritarian, but still nationalist regimes are experiences of the fragile fundamentals on which mass manipulation of '*national socialism*'[34] these days rests. Manipulation nowadays has tremendous technological - and psychological - tools at hand. But as the short seven years of WW2 show, mass manipulation is not almighty. This leads to the second pillar.

In the new millennium human individuals definitely are more exposed to the global character of the production system that provides them with the needs of their daily reproduction. At the same time, they necessarily know less and less how this production system really works. They feel caught in an invisible net, but they consume - if they can. Many starve, many consume enough to survive and reproduce, a very few accumulate unimaginable monetary wealth. Exploitation has reached its zenith. Individuals deal with this split experience of blindness and dependence vis-a-vis globalisation with a partial return to familiar nearby locations, and the local culture. But even in their local habits, in their behaviour as citizens in a small village, the capitalist algorithm has now successfully left its malicious seed. Many individuals act like very small capitalist firms. They seem to maximize an invisible profit - and regularly and necessarily fail. Global exploitation proceeds. In the rich North, this prolonged frustration is one of the sources with which neo-fascist movements organise their followers. Despite this danger of eruptions of neo-fascist rivalries - even of a third World War - the split into a two-fold existence of human individuals is a phenomenon that is here to stay. What hopefully can vanish is only the Procrustes bed of the individualised capitalist algorithm. There are good reasons to expect that this might be possible. The last part of this paper sketches them.

Contradictions

[33] For the notion of *state apparatuses* compare (Althusser, 1970).

[34] It is frightening how well this classic name of Hitler's political party fits to the politics of contemporary leaders like Trump, Putin, Orban, Erdogan and many others.

In a companion paper of this text, a difficult and dangerous time for the next five to ten years of the global political economy has been predicted (Hanappi, 2025). As is usual it had been necessary to look approximately as far in the past as far as one wants to look into the future to produce an educated guess. Therefore only the most recent decades have been the empirical basis of the companion paper. This paper now goes beyond this time horizon and asks the question: What kind of global political economy will prevail after the coming ten years? The title already gives the answer: absolute, global, authoritarian capitalism. But there also is a more hopeful subtitle: Approaching the last stop of the Capitalist Algorithm. This corresponds to the citation of Karl Marx, which immediately follows it. Capitalism has not reached its final configuration today, it only is on its way to it[35]. And as the following 109 years showed capitalism has been more adaptive than the first generations of socialist intellectuals thought. To get an idea of how the long-awaited evolutionary jump, the revolution out of capitalism, could look like, it is necessary to inspect the long-run history of a few of capitalism's contemporary characteristics: authoritarianism, globalisation, and absolute ideological dominance. Of course, a single research paper cannot cover such a broad research topic. It only can lay out a crude plan for it.

The three mentioned features of contemporary capitalism are not only the dangerous cliffs that the ruling class will have to master in the mid-run, but they are also the result of capitalism's internal logic. Implicit contradictions have always been the source of social or technical innovation. Nevertheless, today's impasses are deeper and more fundamental than any time before. Let me recapitulate.

Authoritarianism today appears as a nationalist affair. As such it is dangerous and diverts surplus towards expenditure for wars and away from welfare enhancements. To overcome authoritarianism at a coming global level of the ruling of the exploiting class it will need a radical jump towards democratic mechanisms. These mechanisms have to work upwards from the lowest cultural units to the central global governance institution - and then downwards again. This means that a theoretical jump in democracy design is urgently needed, not to speak of its implementation. In some cases the way downward to the small units is to be prioritised, e,g, to prevent the worst concerning environmental catastrophes the top level will be in a better position to organise scientific expertise for behavioural recommendations. In any case, a capitalist military-industrial complex making its decisions based on the capitalist algorithm will not be able to handle environmental catastrophes. This will be a point where capitalism collapses.

The physical limits of **globalisation** change the nature of the growth aspirations of the human species. Growing capital, the rising dominance of dead labour over living workers, will have to stop. The metamorphosis of growth, its shift to a variable vaguely called the welfare of society, will be closely linked to democratic mechanisms. These democratic mechanisms will turn out to be the enhancement of what the apologetics of capitalism mistakenly have insinuated as the omnipotence of 'the market'. Instead of the mystical subject 'market' the conscious and democratic decision-making of groups of living people will ensure the *growth of their welfare*. In this way, it becomes visible how a limit that makes the further advance of a crying contradiction impossible, can provoke the birth of a new, more adequate, essential goal variable.

The most difficult transformation that has to take place in a future mode of production concerns with relation to the adjective **'absolute'**. Absolute capitalism, as *capitalist algorithm* being ingrained as an

35 This evidently is a speculation, an educated guess based on a feeling of hope. Lenin must have had a similar feeling in 1916 when he wrote 'Imperialism, the Highest Stage of Capitalism', (Lenin, 1916). He was wrong. What followed was fascism, Stalinism and a period of integrated capitalism (Hanappi, 2019a).

interpretation scheme in the mindsets of so many people, will not disappear overnight[36]. The hope rests on the future young generations, on the experiences they make in mastering survival in a physically finite world and still being able to increase welfare. Contradictions can create novelty. The hope also rests on those older 'organic intellectuals'[37], who due to their age have learned how to resist capitalism - and capitalist propaganda - in all its variants. The last decades of the ascending tide of absolute, global, authoritarian capitalism have taught them a hard lesson. They had to endure isolation in small cultural circles, had to train their scientific abilities and to overcome their recurring doubts concerning their own integrity, and their self-esteem. Their experiences and their knowledge are indispensable.

In the end, future human individuals will have to walk on two feet - to paraphrase an old slogan of the *philosopher* Maozedong: With one foot they will be members of the small cultural community in their immediate neighbourhood. They will speak the language with which they were brought up and will appreciate how love and direct friendship satisfy their emotional background. It is this very finite world where they are born and where - after approximately one hundred years - they die. With the other foot, they will step out into the much richer and older world of the human species. They will be connected to this world by electronic media. In this world, they will speak a language that is understood by everybody else, it is the language that also is spoken by the global community of scientists, which produces a steadily growing amount of knowledge. If an individual wants to dive into one of these scientific ponds, it will be able to do so - if it has time and lust. Because a lifetime is always finite, so still choose your occupations wisely. A considerable part of a lifetime will still be determined by the place that the individual is assigned to in the global system of production. Partly it will have a restricted choice in that respect. But more detail is not in place here. The upshot of Maozedong's thought is that it is necessary to walk on both feet.

The global political economy as well as the human individual, which lives in it, repeatedly gets out of balance and needs corrections from one of the two feet. The important point is that it moves forward in this process, that there is progress via changing disequilibrium[38]. Of course, the global political economy as well as any human individual can - and at some future day certainly will - fall. But for now, a brighter future for mankind beyond the capitalist mode of production still is possible.

References

Acemoglu D. and Johnson S., 2023, **Power and Progress**. Our Thousand-Year Struggle over Technology and Prosperity, Publicaffairs, New York.

Adorno T. W. et al., 1950, **The Authoritarian Personality**, Harper & Brothers, New York.

Althusser L., 1970, **Ideology and Ideological State Apparatuses**, in: La Pensé, Monthly Review Press 1971 translated by Andy Blunden.

Darwin Ch., 1859, **The Origin of Species by Means of Natural Selection**, John Murray, London.

36 Nowadays, at a time when almost all individuals contaminated by the virus of the classical Nazi regime in person we met are dead already, we know how long-lasting ideologic infiltration experienced during childhood and youth can be.

37 The concept of the organic intellectual is the most important inheritance, which we owe to Antonio Gramsci, (Gramsci,).

38 Note, that at a smaller scale this is also the methodological baseline of Schumpeter, see (Schumpeter, 1911).

Descartes R., 1637, **Discourse on the Method**. Discourse on the Method of Rightly Conducting the Reason, and Seeking Truth in the Sciences, translated 1853 by John Veitch.

Engels F., 1878, **Mr. Eugen Dühring's Revolution in Science**, original: “Herrn Eugen Dühring's Umwälzung der Wissenschaft”, MEW Band 20, p. 106.

Frank A. G., 2008, **World Accumulation 1492-1789**, Algora Publishing, New York.

Gramsci A.,1930, **Prison Notebooks**, In: Further Selections from the Prison Notebooks Electric Book Company (1999), London.

Halbwachs M., 1950, **The Collective Memory**, Harper & Row Colophon Books, Internet Archive, 1980.

Hanappi H., 2013, **Money, Credit, Capital, and the State**, On the evolution of money and institutions, in: Buenstorf G. et al. (eds), 'The Two Sides of Innovation. Economic Complexity and Evolution’, Springer, pp. 255-282. Enhanced version of an invited paper at the Verein für Socialpolitik (Ausschussss für Evolutorische Ökonomik) July 2009 in Jena. Working paper published as (MPRA Paper No. 47166)

Hanappi H., 2019a, **From Integrated Capitalism to Disintegrating Capitalism. Scenarios of a Third World War**, American Review of Political Economy Volume 14, Number 1 (2019).

Hanappi H., 2019b, **Classes - From National to Global Class Formation**, the introductory chapter of the open access book with the same title edited by Hanappi H., Intech Publishers (UK).

Hanappi H., 2020, Alarm. **The evolutionary jump of global political economy needed**, Real World Economics Review, issue no.94, published also as MPRA Paper 100482.

Hanappi H., 2022a, **Political Economy of Europe. History, Ideologies and Contemporary Challenges**, Routledge Publishers, London.

Hanappi H., 2022b, **Russia. The Background of the Russian Invasion of Ukraine**, published in Theoretical and Practical Research in Economic Fields, Issue 2(26) Winter 2022.

Hanappi H., 2025, **China versus USA: A game-theoretic simulation approach**, download MPRA Working Paper Nr 123517.

Hegel G.W.F., 1830, **Encyclopedia of the Philosophical Sciences**, original: “Enzyklopädie der philosophischen Wissenschaften”, Werke Band 8, suhrkamp taschenbuch wissenschaft, Berlin.

Hobsbawm E., 2021, **On Nationalism**, Little Brown Publishers, New York.

Marx K. and Engels F., 1848, **Manifesto of the Communist Party**, Marx/Engels Selected Works, Vol. One, Progress Publishers, Moscow, 1969, pp. 98-137.

Marx K., 1857, **Economic Manuscripts**, Penguin Books in association with New Left Review, 1973, London.

Moiseev D., 2024, **The Philosophy of Italian Fascism. Formation & Evolution**, Arktos Media Ltd., London.

Reich W., 1933, **The Mass Psychology of Fascism** (1946), published by Orgon Institute Press, New York.

Schumpeter J., 1911, **The Theory of Economic Development**, New Brunswick, New Jersey, Transaction Books.

Smil V. 2021, **Grand Transitions: How the Modern World Was Made**, Oxford University Press, New York.

Smith A., 1776, **An Inquiry into the Nature and Causes of the Wealth of Nations**, W. Strahan and T. Cadell, London.

Author contact: hanappi@gmail.com

SUGGESTED CITATION:
Hardy Hanappi, “Absolute, global, authoritarian Capitalism: Approaching the last stop of the Capitalist Algorithm”, *real-world economics review*, issue no. 110, March 2025, pp. 30–45, http://www.paecon.net/PAEReview/issue110/Hanappi110.

You may post and read comments on this paper at https://rwer.wordpress.com/comments-on-rwer-issue-110/.

real-world economics review, issue no. 110
subscribe for free

Underdevelopment: A Forgotten Concept

Fidel Aroche Reyes
[Universidad Nacional Autónoma de México]

La discusión doctrinaria dista de haber terminado…
(Prebish, 1949)

Abstract
The discussion on development and underdevelopment began formally at the end of the Second World War. At that time, many countries purposely made efforts to develop their economies. Economic theory acknowledged that Walrasian equilibrium was not always feasible, and, for underdeveloped economies, it was not desirable: structural change was crucial to improve welfare. By the 1980s, many of those developing countries fell into crisis. The discussion on development turned to considering structural maladies as market failures. International financial institutions stopped financing development policies. Many countries in Asia disregarded the latter and continued growing and developing. This paper discusses some of these issues and points to the need for underdeveloped countries to offer solutions to their structural problems. Their populations express a lack of hope by emigrating *en masse*.

Keywords: Underdevelopment, Development, Economic theory, Development theory

England industrialised during the XVIII Century as mechanised factories dominated production in the dynamic industries; meanwhile, its financial institutions, colonial empire, army, and navy flourished. Some larger European nations made conscientious efforts to industrialise and develop during the 1800s (Lin & Rosenblatt, 2012; Kemp, 1979; Di Vittorio, 2003). In the early decades of the XX Century, different economies could be labelled as either developed or underdeveloped, wealthier or poorer. There were industrial economies –mainly in Europe- and a few primary producing areas where the population enjoyed higher incomes, such as Australia or New Zealand.

In contrast, the population in many other countries was poor; however, some of those economies maintained economic relationships with the international economy that hampered their development processes, besides facing structural issues that made starting development a more difficult task. CEPAL (1949) defined the latter as “peripheral”; elsewhere, they were called “underdeveloped”. The latter condition is not a necessary phase preceding general prosperity, and the problem extends beyond lower incomes; it has been demonstrated that these countries needed to change the entire structure of their economic systems to effectively raise welfare for all and ensure sustainable growth.

During the 20th century, many poorer countries adopted economic strategies for development. Europe experienced a rise in living standards; more recently, several Asian nations, such as China, Taiwan, and South Korea, have successfully overcome underdevelopment through focused economic policies, while most other Asian countries have made significant strides towards the same goal (e.g. Ahmed & Anoruo, 2000; Cardinale, 2019; Gede, 2021; Maku, 2017; Nayar, 2019; Zhao, J., & Tang, J., 2015).

The American continent witnessed the effective development of several countries until 1982 when the so-called "debt crisis' burst. To address a financial issue, the International Financial Institutions (IFI) advocated for a set of reforms that would abruptly cease the industrialisation and development processes, undermining the productive capacities and depleting the resources accumulated over decades. Those included the privatisation of State-owned firms, the termination of any support for the productive apparatus, especially those focused on specific sectors, the prioritisation of monetary policies over fiscal measures, and the emphasis on inflationary targets rather than economic growth. The State should refrain from intervening in the economic sphere, which ought to function automatically (Easterly, 2001[1]; Lin & Rosenblatt, 2012; Mosley, Harrigan and Toye, 1991). Undoubtedly, the national elites (or fractions of them) willingly participated partly because of short-term interests and partly because of ideological persuasion (Palma, 2016; Romero, 2016). Since then, the continent has seen low average growth at best. South America has returned to being a supplier of primary goods in international trade markets, while the Central American countries (including Mexico) import semi-finished parts to assemble and export final products[2]. These economies supply a low-cost and unskilled labour force to international production chains, generating little value added under poor labour conditions. Economic reforms initiated in the 1980s caused a once-promising continent to regress (The World Bank, 2006).

At the same time, developmental theories fell out of favour in academia and, even more so, in the financial power centres. According to the newer theories, based upon the Mount Pellerin Society's version of Neoclassical economics, there is no such thing as underdevelopment (Bauer, 1991; Buera, Kaboski and Towsend, 2021; Easterly, 2001; Lin & Rosenblatt, 2012; Gollin and Kaboski: 2023[3]). At most, according to the new understanding, the problem is that whenever the State practises active policies, the markets are not allowed to function properly and achieve efficient equilibriums due to the agents' imperfect information sets, overregulation and State intervention, etc., that unavoidably lead to sub-optimal results (Bauer, 1976); furthermore, resources are misallocated due to market frictions that also result in suboptimal outcomes (Martínez & Wantchekon, 2023; Restuccia & Rogerson, 2017). In such a view, the solution recommended (imposed on conditionalities?) by the IFI to the so-called debtor countries reversed development and growth. Sustained growth never returned (Easterly, 2001), yet those so-called reforms reinforced underdevelopment.

The remainder of the paper is organised to address some of these issues: Section 1 reconsiders whether it is worth revisiting the concept of underdevelopment. There is no attempt to define this

---

[1] Easterly (2001: 136) states that the World Bank began "… lending (to developing countries) conditional on the implementing of the new consensus of economic policies…" in 1980.

[2] According to the North American trade data, imports and exports from Mexico and Central American countries include electronic and machinery parts and machinery, vehicles, medicaments, data processing machines (TRADEIMEX: https://www.tradeimex.in/north-america-trade-data, Jan, 17, 2025).

[3] Browsing the 2023 and 2024 indices of the *Journal of Economic Development*, the *Journal of Economic Growth*, and the *Journal of Economic Policy Reform*, one finds mainly papers discussing consumers' choice problems and how to modify their initial endowments so that agents reach better welfare results. Most of those discussions focus on geographically pinpointed issues.

elusive concept, but this section presents some ideas to enhance understanding of the issue. The second examines industrialisation as a means to reach development; the third discusses the necessary conditions to industrialise or how industrialisation started. The fourth section assesses the development process as a state of disequilibrium, hence undesirable for some. On the contrary, this paper understands that such a phase is necessary to improve the conditions of individuals in underdeveloped societies. Finally, the fifth section offers a few conclusions.

1. Is it worth talking about underdevelopment?

In Mount Pellerin's version, Walrasian equilibrium implies Pareto optimal results, with every individual achieving her goals alongside the central planner (von Mises, 1959/2002). The economy is a set of optimising individuals who handle an initial stock of assets with unexplained origins, allowing them to play the game of exchanging goods. Even if the vectors of relative prices and quantities that constitute the general equilibrium are common, the economy does not constitute a social system.[4] (von Hayek, 1944). Interestingly, within this framework, it is not worth enquiring about the causes of the wealth of nations, a foundational concern of economics as a science[5] (Smith, 1776/1990).

This version of the Neoclassical theory acknowledges that important fractions of the population in some countries may face poverty. Large amounts of resources are devoted to studying who the poor are. By approaching those studies, one can learn that those might also be members of families or groups of families who choose the wrong consumption set; for example, they choose to live in areas where incomes are low, speak a minority language and possess skills that keep them from more remunerative occupations. Otherwise, the initial endowments of some have low exchange values, which trap those individuals in poverty. The prevailing economic conditions in the country where the poor people reside do not contribute to the explanation, as such a condition is always an individual issue. It is not a result of an economic system where there is a lack of employment opportunities or that the available occupations yield low productivity and, hence, low income. The solution is to teach the population to choose better, even if no one would take that task in a Walrasian environment, unless the researcher introduces an infinitely generous being into the model, contravening the general assumptions about universal egoistic individual behaviour (Baikadi, et al., 2024; Haughton & Khander, 2009; The World Bank, 2024).

On the contrary, Myrdal (1974: 729) proposes that development is "… the movement upward of the entire social system…". He writes that providing a satisfactory definition of "development" is difficult. Likewise, defining "underdevelopment" is not easy, but it would be a situation that impedes society from providing satisfactory consumption, education, health and general welfare for everyone. The distribution of power, institutional life, and every other factor affecting the well-being and equality of opportunities for the population in a country are part of the problem. Moreover, an underdeveloped society cannot easily move towards a better welfare point due to the social and international relationships between the various agents within it and those in the rest of the world. According to CEPAL (1949), the latter is closely related to unequal access to technology and the resulting unequal factor productivity (Restuccia & Rogerson, 2017). Developed and underdeveloped countries coexist and evolve together; the underdeveloped find structural phenomena that hinder their ability to improve

[4] Thatcher M., the former British Prime Minister, declared, "There's no such thing as society …**"** in an interview: https://www.margaretthatcher.org/document/106689 (23/11/2024).

[5] Macroeconomics are the issues that concern to the many (agents), not to the aggregated one-sector economy (Bruera, Kaboski and Towsend, 2021).

livelihoods for everyone. In countries that have overcome underdevelopment, such a burden has been overturned, with the State playing a central role because this task demands huge amounts of resources as well as the power to call vast social forces that private agents cannot command. More importantly, economic history shows that developing a country requires everyone to participate (Chang, 2002; Chang, 2006; Easterly, 2002; Evans & Heller, 2019).

The only way an economy can achieve development is by raising its income, which results from enhancing the productivity of its factors, which –in turn- stems primarily from creating more profitable industries (Erumban & de Vries, 2021; Lewis, 1954). While reallocating resources, the country will gain essential comparative advantages through the skills acquired from new activities, thereby learning through experience, as Kaldor suggested (1966, 1970). Alternatively, the population should emigrate to lands where better-paid employment opportunities are available (Rosenstein Rodan, 1943). These tasks require significant resources and coordination, which the markets cannot guarantee. Every successful developed country has had an active State implementing policies aimed at those specific goals.

From this perspective, by the mid-XX Century, many countries had already started their industrialisation processes and had experienced whether balanced or unbalanced growth was desirable or where and how they could get the initial resources. By the early XXI Century, many will need to re-industrialise because they have destroyed or damaged their productive capabilities, pursuing “structural reforms” to achieve Walras equilibria as mentioned elsewhere in this paper.

2. Is it necessary for underdeveloped countries to industrialise?

Yes, it is necessary. There is no other way to ensure that populations in peripheral countries have equal access to the benefits of technical progress as those in central nations; in short, to overcome underdevelopment (Erumban & de Vries, 2021; Lewis, 1954; Kaldor, 1966; Rosenstein Rodan, 1943). Recent literature has once again raised the idea that industrialisation is not the sole path to general prosperity, as some service activities also demonstrate high productivity. (Buera, Kaboski & Zhao, 2019; Gollin & Kaboski, 2023; Herrendorf, Rogerson & Valentinyi, 2024). In this regard, the first question is what we mean by “industrial” or “manufacturing”; often, these two terms refer to the production of tangible goods, but sometimes one wonders whether some intangibles are actually “services” — for example, an intangible computer program is probably not a service. Ultimately, a consumer purchases goods expecting to derive services from using them (e.g., an apparel item); otherwise, the merchandise would be rendered useless. In any case, when developmental literature refers to industrialisation and address underdevelopment, authors refer to the establishment of high-productivity, high-income productive activities that operate under increasing returns to scale and transmit growth impulses to the rest of the productive apparatus, regardless of their nature (Bopart, 2014; Hirschman, 1968; Ocampo, 2022; Prebisch, 1949; Restuccia & Rogerson, 2017; Tavares, 1964). In older literature, growth in the services sector often derives from the consumption or production of manufacturing products; Kaldor (1966) exemplifies this concept with the better-paid manufacturing worker, who increases her demand for milk, thereby enabling the milkman to provide more goods with the same resources, which enhances productivity in the service of milk delivery, a passive activity in this process. Further, it would be necessary to discuss whether high-productivity services can grow autonomously and effectively lead a development process, particularly in the case of countries with larger populations. Smaller countries such as Singapore can prosper by offering services to their industrial neighbours, but South Korea has developed a manufacturing sector that provides good-quality labour conditions.

In underdeveloped economies, it is often necessary to create jobs for large groups of informally occupied individuals (neither employees nor entrepreneurs) who earn their income through offering low-productivity services. Rosenstein Rodan (1943) showed this is more efficient than making them emigrate in search of better jobs (Rodrik, 2021). Classical and neoclassical theories (Ricardo, 1821 / 1977) predict that it is advantageous for a country to engage with the international economy and export goods for which has comparative advantages. Once again, prosperity seems to be a matter of "correct choice" (see above). However, empirical evidence indicates that the benefits derived from trade vary between industrialised nations and those that produce and export primary goods. Examples are not scarce: Northern Europe has been an industrial region where countries are developed, and populations enjoy high standards of living, vis-à-vis Central America, where underdevelopment prevails and poverty is widespread, despite both regions exchanging manufactured goods for coffee for over a century. Trade is assumed to be "fair"; some Europeans emigrated to Guatemala to produce coffee under those conditions, while Guatemalans continued emigrating to the US to work.

Kaldor (1966) explained that the nature of the manufacturing industry is such that its output and productivity growth stimulate growth across the entire economy through linkages and direct and indirect demand (Bopart, 2014; Cantore, 2017; Haraguchi, Martorano and Sanfilippo, 2019; Szirmai, Verspagen, 2015). No other sector replicates that. Agriculture and mining frequently encounter diminishing returns since their production processes depend on natural conditions and resources. Services depend upon the expansion of income in other sectors to grow. For instance, the manufacturing industry can initiate its own growth process by boosting production that will attract buyers, as demand is elastic to income (that equals output).

3. The necessary conditions to industialise

Most medium and larger countries started their industrialisation processes spontaneously. Once the population achieved higher incomes, manufactured goods found natural markets. Producers could then specialise and innovate, gaining expertise and improving their factor productivity. In the late (or late-late) industrialising countries, that process also eventually happened and accelerated when the producers of primary goods joined the international markets to export. Higher incomes enabled these countries to initially import industrial goods, which would ultimately be replaced by domestic produce.

Tavares (1964) and Hirschman (1968) propose that increasing the domestic production of industrial goods in late-industrialising countries leads to import substitution (Aroche, 2024; Ros & Moreno, 2010). This is not a "stage" or the result of a deliberate development policy; rather, it is a consequence of rising incomes that help internal markets organise around populations accustomed to consuming initially unavailable goods. In many countries, industrialisation accelerated when such goods were scarce in the world markets, further substituting imports. When the First World War commenced, Europe could not export consumer goods that were "easily" produced in these newly industrialising areas; the European economic depressions in the 1920s and 1930s created the conditions to continue substituting imports elsewhere. Balassa (1982) and Bruton (1982) assume that this is a conscious decision when some may turn to export industrial goods; the evidence tells that those countries mostly continued substituting imports solely to sustain growth and did not have the time, resources or space to plan (Tavares, 1964). Import substitution has often responded to immediate needs.

In industrialised countries, the national State has consistently provided active support for development. England (or Britain more recently), the epitome of a free-market industrialised country and the first to achieve such status, enjoyed the support of the Crown for the original capital accumulation until the construction of the Colonial Empire and beyond. After 1980, the State withdrew its support, accelerating the decline of the industry and altering the nature of the economy. The same applies to countries that industrialised later in the XIX Century and even more so to those that industrialised much later. The State needs to play a central role in every case. It is a matter of national security as well as a matter of providing welfare to the population. Both are basic duties of National States. Chalmers (1982) and Evans & Heller (2019) suggest that Japan, as well as Korea, Taiwan and Singapore (the Asian Tigers), moved fast from underdeveloped to developed, aided by the so-called “developmental State” where the role of a “Weberian bureaucracy” capable, internally coherent that provided the sense of commitment to a collective project of national development. That was also the case in the American continent during the acceleration of industrial development in the 1940s and 1950s, when there was a social agreement on the need to industrialise in order to develop the various countries (Mosk, 1954).

Once a country has surpassed the initial stages of capital accumulation, an entrepreneurial class should emerge and sustain itself to manage the industrial economy. Capitalism requires capitalists; the State cannot substitute them. Technicians may arise from the educational system, and technologies will develop to address practical problems in a prosperous economy. Expanding output will encounter technical issues and generate solutions simultaneously. Economic policies are also susceptible to errors. The worst of all, though, is to do nothing, as extreme liberal views suggest (Chang & Zach, 2019).

Static comparative advantage is anecdotal, as demonstrated by the various industrialised countries when they innovated and, often, created entirely new industries, encompassing new products, knowledge, skills, technology and machinery, for example. Once the labour force acquires new skills, opportunities arise to develop the “proper” industries relative to the newly established comparative advantages, allowing the entire productive sector to find its own profile and optimise the available resources. The Germans excelled in the chemical industries because they had been producing chemical products for centuries. In other words, skills and knowledge are also the subject of accumulation.

4. Development: a disequilibrium state

Walras (1890), Schumpeter (1911), Cassel (1918), von Neumann (1937), and Sraffa (1960), among others, study multisectoral systems that achieve general equilibrium when all the sectors expand at a uniform maximal rate that equals the general rate of surplus generation or the maximal rate of profit that must be uniform through the set of industries. In those circumstances, all the relations between the variables in the system remain fixed. The system just expands while the agents keep reproducing the same behaviour at expanding values. In Pareto environments, individual welfare increases. Regrettably, as previously stated, such stability may be undesirable in an underdeveloped economy. Scaling up the underdeveloped system leads to scaled-up inefficiency. Resources must be redirected towards more profitable industries or sectors, and the relationships between variables must change. In the process, the system will face disequilibrium. When sectors expand at differing rates, there is an opportunity for bottlenecks, shortages, and a plethora of unwanted commodities; however, there is also a chance to accelerate development when slower activities catch up with those growing more quickly (Hirschman, 1958). Disequilibrium is the way towards development.

In contrast, the IFIs expect balanced growth to equal equilibrium and optimal welfare for each consumer. Assuming the Walras–Pareto model in the Mount Pellerin version, any exogenous perturbation will produce sub-optimal results (see above). However, von Hayek (1945) accepts that in some economies, the initial conditions may not yield results that are acceptable to the central planner, as would be the case when over half of the population faces extreme poverty. Re-assigning the initial resources needs external intervention in the form of programmes that relieve poverty. According to the Second Theorem of Welfare (Debreu, 1960), some external entity reallocates prices and endowments to produce more desirable outcomes while maintaining equilibria. However, from such a perspective, the development of Asian countries in the last few decades is beyond understanding.

Conclusions

Underdevelopment is a collection of interrelated ailments that afflict numerous countries worldwide. This syndrome leads economies to undesirable outcomes, such as sluggish growth, inequality, and widespread poverty. Underdeveloped economies will not “move upwards” in the Myrdal sense unless society and the State coordinate deliberate efforts to tackle this issue. The endeavour demands substantial resources, but the State is responsible for ensuring the population's welfare.

IFIs do not recommend developmental policies because they assume a Walras–Pareto world in which any exogenous intervention yields suboptimal results. Accordingly, there is no society but some phenomenon that results from adding up individuals who share very little. The State's agenda does not relate to the population’s interests but to its own.

In the real world, however, economic policy enables societies and governments to achieve specific goals together. There are no *a priori* reasons to believe that policies are not designed to address problems affecting everyone and handle uncertainty and imperfect information as efficiently as possible. It is evident that policies are and have been subject to errors. Yet, it is not easy to understand why anyone should believe that political decisions within the State should always be biased.

Evidence shows that countries manage to surmount underdevelopment using industrialisation strategies to create jobs, increase incomes, and spread welfare among individuals. First, the problem should be acknowledged to exist, and then, economic history shows the solution. Unfortunately, the extreme liberal theory cannot properly approach a systemic problem that needs more comprehensive treatment.

Funding details: This work was supported by PAPIIT – UNAM, Grant: IN300423.

Disclosure statement: The author reports there are no competing interests to declare.

References

Ahmed Y. and Anoruo E. (2000). Openness and economic growth: Evidence from selected ASEAN countries. *Indian Economic Journal*, Vol. 47, No. 3, pp.709–751

Balassa B. (1989). “Outward Orientation” H. Chenery and T.N. Srinivasan Editors, *Handbook of Development Economics* Vol. 2, pp.1645 – 1689

Bauer P. (1976). *Dissent on Development. Studies and Debates in Development Economics* Boston: Harvard University Press

Bruton H. (1968). “Import Substitution” H. Chenery and T.N. Srinivasan Editors, *Handbook of Development Economics* Vol. 2, pp. 1601 – 1644

Buera F. J., Kaboski J. P. & Towsend R. M. *From Micro to Macro Development.* Working Paper 28423 NBER Working Paper Series

Buera F. J., Kaboski J. P. & Zhao M. Q. (2019). The Rise of Services: The Role of Skills, Scale, and Female Labor Supply Journal of Human Capital, Vol. 13, No. 2

Bopart T. (2014). Structural Change and the Kaldor Facts in a Growth Model with Relative Price Effects and Non-Gorman Preferences, *Econometrica,* Vol. 82, No. 6, pp. 2167 - 2196

Cardinale R. (2019). Theory and practice of State intervention: Italy, South Korea and stages of economic development Structural Change and Economic Dynamics Vol. 49, pp. 206-216

Cantore N., Clara M., Lavopa A. & Soare C. (2017). Manufacturing as an engine of growth: Which is the best fuel? *Structural Change and Economic Dynamics*, Vol. 42, pp. 56-66

Cassel G. (1918). *Theoretische Sozialökonomie*. Leipzig: F. C. Winter

Chang H. J. (2002). *Kicking Away the Ladder: Development Strategy in Historical Perspective,* London: Anthem

Chang H. J. (2006). *The East Asian Development Experience. The Miracle, the Crisis and the Future,* London: Zed Books

Chang H. J. & Zach K. (2019). Industrialization and Development. Nayar D. (ed.) *Asian Transformations. An Enquire into the Development of Nations* UNU -Wider Studies in Development Economics Oxford: Oxford University Press

Debreu G. (1965). *Théorie de la valeur. Analyse axiomatique de l'équilibre économique*. Paris: Dunod

Easterly W. (2001). The Lost Decades: Developing Countries’ Stagnation in Spite of Policy Reform 1980 – 1998 *Journal of Economic Growth,* Vol. 6, No. 2, pp 135 – 157

Erumbam A. A. & de Vries G. (2021) *Industrialization in Developing Countries : Is it Related to Poverty Reduction?* WIDER Working Paper 2021 / 172

Evans P. & Heller P. (2019). The State and Development. Nayar D. (ed.) *Asian Transformations. An Enquire into the Development of Nations* UNU -Wider Studies in Development Economics Oxford: Oxford University Press

Gede Wahyu Wicaksana, I. (2021). Economic nationalism for political legitimacy in Indonesia. *Journal of International Relations and Development,* Vol. 24, 27–50 https://doi.org/10.1057/s41268-019-00182-8

Golin D. & Kaboski J. P. (2023). New Views of Structural Transformation: Insights from Recent Literature *Oxford Development Studies* Vol. 51, No. 4, pp. 339 - 361

von Hayek F. (1944). *The Road to Serfdom* Chicago: The University of Chicago Press

Herrendorf B., Rogerson R. & Valentinyi A. (2022). *New Evidence on Sectoral Labor Productivity: Implications for Industrialization and Development.* Working Paper 29834 NBER Working Paper Series

Hirschman A. O. (1958). *The strategy of economic development,* New Haven: Yale University Press

Hirschman A. O. (1968). “The Political Economy of Import-Substituting Industrialization in Latin America” *The Quarterly Journal of Economics*, Volume 82, Issue 1, pp. 1 – 32

Horner, R. (2020). Towards a new paradigm of global development? Beyond the limits of international development. *Progress in Human Geography*, Vol. *44 No.* 3, pp. 415 - 436 https://doi.org/10.1177/0309132519836158

Kaldor N. (1966) *Causes of the Slow Rate of Economic Growth of the United Kingdom. An Inaugural Lecture*. London, Cambridge University Press

Kemp T. (1979) *La revolución industrial en la Europa del Siglo XIX*. Barcelona: Fontanela

Makun K. (2017) Trade Openness and Economic Growth in Malaysia in *Foreign Trade Review* Vol. 52, No. 3, pp. 157-170

von Mises L. (1959 /2002) *Pensamientos para hoy y para el futuro (Seis conferencias dictadas en Buenos Aires en 1959)*, New York: Free Market Books

Mosk S. (1951). La revolución industrial en México. *Problemas agrícolas e industriales de México,* Vol. 3, No. 2, pp. 11- 234

Mosley P., Harrigan J & Toye J. (1991) *Aid and Power. The World Bank Policy Base Lending*. London: Routledge

Myrdal G. (1974). "What Is Development?" *Journal of Economic Issues* Vol. 8, No. 4 pp. 729-736

von Neumann J. (1937 / 1998). „Uber ein Ökonomisches Gleichungssystem und eine Verallgemeinerung des Brouwerschen Fixpunktsatzes". *Ergebnisse eines Mathematischen Kolloquiums*, 8, 73-83 Translated as „Un modelo de equilibrio general" Segura J. and Rodriguez Braun C. (compilers) *La economía en sus textos*. Madrid: Taurus

Ocampo J. A. (2022). International Development in a Historical Context in Deciancio M., Nemiña & Tussie D. (eds) *Handbook on the Politics of International Development*, Cheltenham: Edward Elgar, pp. 15 – 30

Palma J. G. (2016). The Dependency School and its Aftermath: Why Latin America's Critical Thinking Switched from One Type of Absolute Certainties to Another. Reinert E., Ghosh J. & Kattel R. (eds.) *Handbook of Alternative Theories of Development* Cheltenham: Edward Elgar

Prebisch R. (1949). *El desarrollo económico de América latina y algunos de sus principales problemas* Nueva York: Organización de las Naciones Unidas

Rodrik D. (2021). *How can we generate more good jobs in developing countries?* https://blogs.worldbank.org/en/jobs/how-can-we-generate-more-good-jobs-developing-countries, retrieved 24/01/2025

Romero S. M. E. (2016) *Los orígenes del neoliberalismo en México. La escuela austriaca*. México, D. F.: Fondo de Cultura Económica.

Rosenstein Rodan P. N. (1943). "Problems of Industrialisation of Eastern and South-Eastern Europe" *The Economic Journal*, Vol. 53, No. 210-211, pp. 202–211

Schumpeter P. (1911). T*heorie der wirtschaftlichen Entwicklung*, Berlin: Neuausgabe hrgg

Smith A. (1776/1990). *An Inquiry into the Nature and Causes of the Wealth of Nations*. Chicago: Encyclopedia Britannica: University of Chicago Press, c1990

Sraffa P. (1960). P*roduction of Commodities by Means of Commodities.* Oxford: Oxford University Press

Sunkel, O. & Griffith-Jones S. (1986). *Debt and Development Crises in Latin America: The End of An Illusion*, Oxford: Oxford University Press

Szirmai A. & Verspagen B. (2015). Manufacturing and economic growth in developing countries, 1950–2005 *Structural Change and Economic Dynamics*, Vol. 32, pp. 46 - 59

Tavares C. (1964). "Auge y declinación del proceso de sustitución de importaciones en el Brasil" *Boletín Económico de América Latina* Vol. IX, pp. 1 - 62

Ugarteche O. (2018) *Arquitectura financiera internacional: Una genealogía 1850 – 2015.* Madrid: Akal

Di Vittorio A. (2003). *Historia económica de Europa, Siglos XV-XX* Madrid: Crítica

The World Bank (2006). *Economic Growth in the 1990s: Learning from a decade of reform.* Washington DC: The World Bank

https://documents1.worldbank.org/curated/en/664481468315296721/pdf/32692.pdf (19/Jan/2025)

The World Bank (2024). *Poverty, Prosperity, and Planet Report. Pathways Out of the Polycrisis.* Washington: The World Bank

Zhao, J., & Tang, J. (2015). Industrial Structural Change and Economic Growth in China, 1987–2008. *China & World Economy*, *23*(2), 1-21. https://doi.org/10.1111/cwe.12104

Author contact: aroche@unam.mx

SUGGESTED CITATION:
Fidel Aroche Reyes, "Underdevelopment: A Forgotten Concept", *real-world economics review*, issue no. 110, March 2025, pp. 46–55, http://www.paecon.net/PAEReview/issue110/Aroche110.

You may post and read comments on this paper at https://rwer.wordpress.com/comments-on-rwer-issue-110/.

Economics of Gaza

Junaid B. Jahangir
[MacEwan University, Canada]

Abstract
The objective in this paper is to highlight the economics of Gaza by delineating the topics of structural occupation and energy conflict, free markets versus free market of ideas, economics of extremism, the economics of crime and discrimination, cultural stereotypes and crowding out of morality. This is achieved through an interdisciplinary approach by drawing literature from the nexus between economics and theology, law, and philosophy.

Keywords: Gaza; extremism; crime; discrimination; energy conflict; structural occupation.

Introduction

In a recent interview, distinguished economist Ha-Joon Chang mentioned that economics students learn abstract equilibrium models in neoclassical economics that do not account for structural discrimination and social conflicts and that neoclassical economics ignores history, culture, and politics (Chang and Lari, 2024). This is concerning because while students learn about the technicalities of models, they do not learn much about real world issues of climate change and economic inequality let alone topical issues like Gaza. Consequently, where students in social sciences like sociology and political science can address topics of systems, power, and discrimination, or more strongly occupation, apartheid, and genocide, economics students find themselves ill equipped to address Gaza based on their field. A cursory google search reveals media articles that showcase the economic impact of the situation in Gaza, and this includes the report by Al-Riffai (2024). However, what is missing in such descriptive pieces is economic theory, whether neoclassical or heterodox.

There are, however, valid concerns about applying economic theory to various facets of human life. For instance, Aldred (2020) states that economic imperialism refers to the colonization of our lives by economic thinking and this includes the idea that people freely choose to sell their organs, which results in the allocation of body parts from the poor to the rich in the human organ market (pp. 125, 148). Concerns on economic imperialism arise when economic analysis is promoted as the only or superior method in exclusion to other approaches. However, such concerns are alleviated if economic analysis is taken as one among many approaches to better understand social, political, or cultural phenomena. Thus, for the purpose of this paper the economics of Gaza is highlighted by drawing from interdisciplinary literature at the nexus between economics and religion, law and philosophy to address various topics of structural occupation and energy conflict, free markets versus free market of ideas, economics of extremism, male rape and the economics of crime and discrimination, cultural stereotypes and crowding out of morality. This is followed by the views of critical economists and organizations on Gaza and finally by concluding remarks.

Structural Occupation and Energy Conflict

While Chang critiques that neoclassical economics ignores structural discrimination and social conflicts, broader economic analysis allow to address the issue of Gaza systematically or structurally. Bichler and Nitzan (2024a) provide the background that Jewish militias and settler organizations receive financing from the Israeli government and foreign NGOs and that over the years they have been successful in assuming control over the media, altered the education system, seized political parties, captured the state's military and security apparatus, and aim to turn Israel into an autocracy. They add that the Likud government showed the "colonial foundations of the state" where settler groups "terrorize, scare off and expel" Palestinians (p. 14) and retired generals call for the "transfer of Palestinians" (p. 16). This has manifested the "occupation and oppression of Palestinians" (p. 14) that is associated with the corruption of the Palestinian Authority and the rise of Islamic militancy. Additionally, the "half century occupation of Palestine" has helped "further radicalize the Palestinian resistance" (p. 17).

This seems to have parallels in India where Hindutva ideologues have been able to assume control over the media (Akhter and Saratchand, 2023; Sharma and Pegu, 2023) and alter the education system (Dey, 2025) and who aim to turn India into an ethnocracy (Roy, 2024) under the ruling BJP government. The parallel continues with Hindutvists expressing solidarity with Israel to the extent that a former diplomat of India openly justified the death of Palestinian children (Figure 1).[1] Additionally, Essa (2023) shows the neoliberal connection between India and Israel by indicating that India bought "weapons and surveillance technologies" worth $1 billion from Israel while offering "occasional words of support, charity, and votes at the UN" for Palestine (pp. 34, 58). Moreover, the extractive settler colonial model is similar, as noted when India's consul general to the U.S. in 2019 stated that "India would build settlements modeled after Israel" to create "Hindu-only settlements in Kashmir" supported by "security and militarized infrastructure such as walls, separate roads, and checkpoints, not unlike Jewish-only settlements in the West Bank" (pp. 156-157).

[1] Al Jazeera, How India has been covering Israel's war on Gaza, November 12, 2023, https://www.youtube.com/watch?v=hBnrpEMwA2o.

Figure 1: Justification of Children's Death in Corporate Media

How India has been covering Israel's war on Gaza | The Listening Post

Having provided the context on Gaza, Bichler and Nitzan (2024b) argue that conflicts in the Middle East are essentially energy conflicts that are associated with "relative oil prices and differential oil returns" (p. 25). Specifically, they construct differential oil returns based on the return on equity (ROE) of large oil companies relative to the ROE of the Fortune 500. Based on theoretical modeling and data analysis, they show that energy conflicts are preceded by negative differential returns and followed by above average returns of leading oil companies. Thus, they argue that large oil companies are served not by production but by "exercise of power" and "war" (p. 26). This finding complements the earlier Klor and Berrebi (2005) result that terrorism has a significantly positive impact on defense and security industries in Israel. More recently, a popular video shows that weapons manufacturing companies gained in share prices in the aftermath of the Hamas attack of October 7, 2023.[2]

Finally, Bichler and Nitzan (2024a) argue that the wealth from large oil companies has allowed the rich Gulf states to channel petrodollars to radical groups over the years that includes Syrian militants, which has resulted in "half a million dead and 5 million refugees" with the 2011 Syrian crisis (p. 17). However, funding militant groups is not unique to the rich Gulf states given Russian support for Chechen forces and U.S support for Kurdish militias (p. 8). Moreover, some claim that Israel helped create Hamas to weaken the PLO.[3] Overall, Bichler and Nitzan (2024a, b) provide an economic analysis that emphasizes systems where both structural occupation and petrodollars instigate radicalization and where the returns of large oil companies are dependent on energy conflict. Given this analysis, it becomes clear that capitalist interests of both Israel and the rich Gulf states makes them jointly complicit in the suffering of poor civilians in Gaza, and both play a balancing act like India on paying lip service to human rights violations but continuing with corporate business as usual.

[2] Dhruv Rathee, The Dark Truth about Weapons Industry, November 28, 2023, https://www.youtube.com/watch?v=_J5UOvt1aLM.

[3] The Intercept, Blowback: How Israel Helped Create Hamas, February 20, 2018, https://www.youtube.com/watch?v=o7grSsuFSS0.

Free Market Versus Free Market of Ideas

Discussing economic pluralism, Chang agrees that economists like free markets but not free market of ideas (Chang and Lari, 2024). This is manifest when neoclassical economics is privileged at the expense of excluding heterodox perspectives in mainstream economics journals and departments. The parallel with the discourse on Gaza arises when on the one hand top Israeli officials invoke the rhetoric of Amalek whose genocide is Biblically sanctioned (Lanard, 2023), dehumanize Palestinians as "inhuman animals"[4] and their children as "little snakes" (Bryan, 2015), but on the other hand there is free speech exception to Palestine in academia and university campuses (Salaita, 2024; Funez-Flores, 2024). This is because of weaponized victimhood, where charges of anti-Semitism are invoked to stifle critique of Israeli state actions including "genocidal violence" (Gordon, 2024). Similarly, Essa (2023) argues that Israeli lobby groups conflate "criticism of Israel to anti-Semitism" and condemn "Palestinian resistance and advocacy efforts" (p. 100). He draws parallels with Hindutvist groups that started "harassing, intimidating, and policing academics and students at universities" and conflated criticism of Hindutva with Hinduphobia (p. 120). Overall, it becomes clear that the rhetoric on free markets does not translate to the free market of ideas.

Economics of Extremism

Based on the seminal work of Iannaccone (1997; 2006; 2012), a typical extremist is not poor, ignorant or suffering from mental illness, as such people can be incompetent and risky. Instead, well-educated and mentally stable actors are required to not bungle up terrorist missions. This is consistent with Krueger and Maleckova (2003), which shows that there is little connection between poverty, poor education and terrorism. In contrast, according to Berrebi (2003), "higher standards of living and higher levels of education are positively associated" with Hamas participation. Thus, the economic approach views extremists as rational agents and rejects the flawed argument that extremists cannot be deterred, as they have nothing to lose or live for. For instance, successful negotiations with Hamas can facilitate the release of Israeli hostages, as instead of being a nihilist, psychopathic group it has political objectives, which means that they can be reasoned with and deterred.

According to Iannaccone (1997), militancy is a consequence of the social and political environment rather than religion. The appeal of fundamentalism arises in a context where people have been displaced or ill served by governments and that void is filled by groups like Hamas that offer public services and welfare programs. Based on Iannaccone (2012), such groups arise when basic civil liberties are undermined. According to Intriligator (2010), terrorism is used by the weaker party in asymmetric warfare, whose motivation is not rooted in poverty or ignorance but in humiliation and retribution for past actions. This is concerning given that Hamas perpetrators of October 7 may have been children or minors over the last two decades with indiscriminate bombing of Gaza through various operations like Cast Lead, Protective Edge, Pillar of Defense, Breaking Dawn, and so on. Moreover, many Palestinian children and minors have been systemically imprisoned through the years for throwing stones against Israeli forces (Quran, 2023). Thus, economic analysis helps us recognize the positive feedback loop where state sanctioned structural occupation and discrimination leads to

[4] Middle East Eye, Israel's former UN envoy: Palestinians are 'inhuman animals', October 26, 2023, https://www.youtube.com/watch?v=Fr24GcCDgyM.

perceived grievances and violence/terrorism, which in turn elicits more state repression and the vicious cycle continues unabated.

Iannaccone (2006) argues that the market for martyrs is not undermined by inhibiting the supply of martyrs, as imprisonment and execution simply instigate the recruitment of new individuals. What is needed is to check the demand for martyrs by changing the political and economic environment through civil liberties, social services, political representation, and economic freedom, all of which would inhibit religious radicals from embracing violence. Indeed, social, legal, economic, and political reasons make religiously sponsored violence unprofitable for Christian extremists in the U.S. who would suffer loss to reputation, influence, membership, and funding. By way of analogy, the market for martyrs is tackled the same way as the market for drugs by focusing on demand rather than supply, i.e., by addressing human concerns which is much cheaper than the costly spending on the police and judiciary in the war against drugs or on military and defence in the war against terrorism.

Brekke (2016) confirms that the economic approach views terrorists as rational, that fundamentalist movements are a response to state encroachment, that groups like Hamas and Hezbollah provide social services, law and order, education, and poor relief, and that civil liberties and tempering grievances offer an antidote against terrorism. All of this confirms that instead of indiscriminate bombing, the long-lasting strategy to quell terrorism is through provision of public goods and civil liberties. Overall, economic analysis indicates that terrorism does not arise because of religion, poverty, or mental illness but rather when political grievances go unaddressed. Tackling terrorism thus requires not indiscriminate bombing but a focus on addressing political grievances, which in the case of Palestine means an end to the structural or systemic occupation.

Male Rape and the Economics of Crime and Discrimination

Various Israeli scholars and artists have called the occupation of Palestine "apartheid" (Pontone, 2023). Raz Segal, an academic in genocide studies has also labelled Israeli actions as "a textbook case of genocide" (Segal, 2023). It is in this context of occupation, apartheid, and genocide that the video testimonials of the sexual abuse of Palestinian men in Israeli prisons[5] can be situated. The testimonials are reminiscent of the male rape and sexual abuse in the Abu Ghraib prison after the U.S. invasion of Iraq.[6] Moreover, male rape and sexual abuse are reminiscent of the wealthy cities of Sodom and Gomorrah, which, according to Friedman (2010), were opposed to strangers, as xenophobia was institutionalized. In his exegetical commentary, the Islamist thinker Maududi (2006) referenced several incidents from the Talmud that the people of Lut (Sodom and Gomorrah) robbed poor travellers, withheld food, and left the dead naked without shrouds. Thus, Sodom and Gomorrah are reflected in Israeli prisons with male rape and torture that resulted in death (Cordall, 2024), the use of starvation as a weapon of war (Khaki et al., 2024), and the subjugation of naked Palestinian men on display (Al-Mughrabi, 2023).

However, the harms of male rape to subjugate others cannot be adequately captured through the standard economic approach on crime. Gifford (2019) critiques the economic approach of Gary Becker that fraud and theft do not involve social costs, as resources are simply transferred from the victim to the criminal. He argues that this is not true for crimes like rape and murder where the benefit of

[5] Middle East Monitor, UN hears from Palestinian men who were sexually abused in Israel's jails, October 31, 2024, https://www.youtube.com/watch?v=QWbC59vNcCc.

[6] Al Jazeera, 20 years on, Abu Ghraib survivor recalls torture by US forces, March 21, 2023, https://www.youtube.com/watch?v=j1ueTR5TkcM.

criminals does not offset the suffering of victims. The testimony of sexually abused Palestinian men with blood flowing from their naked bodies confirms that crime goes beyond mere transfer of resources to inflict harm on human wellbeing.

Similarly, Komlos (2021) critiques the Becker model of discrimination, which is used to show that competition can eliminate discrimination from the free market. The idea is that discriminating employers would be driven out of the market by competitors who hire the best employees regardless of their racial attributes. However, Komlos argues that there can be organized pressure from society and the threat of violence from vigilante groups like the Klu Klux Klan, both of which undermine the results of the Becker model. In the Palestinian context, this refers to violence by extremist settlers in the West Bank (Chalabi, 2024) against which minority non-discriminating voices like Rabbi Arik Ascherman are muffled.[7] Overall, the economics of crime and discrimination are limited in capturing the harms of male rape and settler colonial violence.

Cultural Stereotypes and Crowding Out of Morality

Systems and institutions develop a life of their own and are difficult to change by individual actions. This means that the dehumanization of Palestinians as “inhuman animals” and their children as “little snakes” by higher Israeli officials that stokes discriminatory societal attitudes, is not easily overturned. However, Chang (2007) offers hope that cultural attitudes can change, as he notes that the cultural stereotype of thieving Germans and lazy Japanese shifted over time to industrious and hardworking people. Thus, just as cultural attitudes can be changed with proper institutions, racism and xenophobia against Palestinians can be reversed. For instance, according to Wagner-Tsukamoto (2017/2019), Joseph was able to become Pharaoh’s advisor in Egypt despite his religion and racial attribute and despite the lies spread by Potiphar’s wife.[8] What is required are effective institutions and systemic change and this means rejecting ethno-racial states or ethnocracies that settlers in Israel and Hindutvists in India aim for, which respectively relegate Palestinians and Muslims to second class citizens with limited civic rights.

However, change in cultural attitudes also requires that intrinsic morality not be corrupted otherwise people can end up rationalizing prejudice with the approval of their own conscience. Sandel (2012) cautions that intrinsic morality can be crowded out when guilt and shame are undermined by financial incentives, as in the case of the rationalization of the market for human organs and babies. In the Palestinian context, this indicates that corporate interests allow the rich Gulf Arab states to ignore the suffering of the Palestinians and financial incentives allow Israeli settlers to rationalize deeply entrenched prejudice against Palestinians.[9] Overall, if intrinsic morality is corrupted and corrupt institutions and systems are deeply entrenched then sometimes a radical overhaul of society is required through collective civic action.

Critical Economists on Gaza

[7] Middle East Eye, Rabbi raises alarm over settler violence against Palestinians in occupied West Bank, November 13, 2023, https://www.youtube.com/watch?v=bxWucyfc8lM.

[8] Movieclips, Joseph: King of Dreams (2000) - Potiphar's Wife Scene, April 18, 2019, https://www.youtube.com/watch?v=SRy397r355A.

[9] CNN, ‘That sounds like ethnic cleansing’: CNN questions lead figure in Israel’s settler movement, March 20, 2024, https://www.youtube.com/watch?v=FkXJwErm8DM.

Civic calls for radical change have been noted amongst several critical economists. For instance, Piketty (2024), recognized for his work on economic inequality, has called for sanctions on Israel:

> "If Western governments truly support the two-state solution, then sanctions must be imposed on the Israeli government, which is openly trampling all peaceful prospects by pursuing settlement and repression and opposing recognition of the Palestinian state. In other words, military aid must stop, … introducing trade and financial sanctions, gradually increasing to dissuasive levels. ... At the same time as imposing sanctions on Israel, Europe and the US must put in place implacable and dissuasive sanctions against Hamas and its external supporters and decisively strengthen representative and democratic Palestinian organizations."

Economic anthropologist, Jason Hickel, noted for his popular books on degrowth and global inequality, has called out "capitalist imperialism" in Palestine.[10] He has actively been writing on Gaza on X, where he called out "genocide":[11]

> "Israel is systematically dismantling the health system in Gaza because they know this will drive mortality rates up. Palestinians, who are already starving and immuno-compromised, … And every time people are forced to evacuate and move again, they are weaker and more vulnerable. These are effectively death marches. This is how the genocide is being conducted. The Israeli government is taking this route -- starvation, disease, repeated displacement … They are trying to do genocide in a way that's just within what is politically acceptable for the ruling classes and media outlets of the US and EU."

Varoufakis (2024), noted for his popular economics books and his stint as Greece's Minister of Finance in 2015, has pushed back at weaponized victimhood:

> "You accuse us of antisemitic hatred. We accuse you of being the antisemite's best friend by equating the right of Israel to commit war crimes with the right of Israeli Jews to defend themselves. … You accuse us of supporting terrorism. We accuse you of equating legitimate resistance to an apartheid state with atrocities against civilians which I have always and will always condemn, whoever commits them — Palestinians, Jewish settlers, … You accuse us of trivializing Hamas's October 7 terror. We accuse you of trivializing the eighty years of Israel's ethnic cleansing of Palestinians and the erection of an ironclad apartheid system across Israel-Palestine."

Finally, distinguished Indian development economist, Jayati Ghosh has called out "colonial expansion and genocide" in Gaza.[12] On X, she shared a post from the Lemkin Institute for Genocide Prevention, and highlighted that, "Let us be clear: Israel is committing genocide in Gaza. The US is complicit in genocide".[13]

---

[10] Transnational Institute, Jason Hickel: Why a Liberated Palestine Threatens Global Capitalism, October 10, 2024, https://www.youtube.com/watch?v=6dBy4-6pn1M.

[11] Jason Hickel, October 23, 2024, 9:15 AM , https://x.com/jasonhickel/status/1849107339879559532.

[12] Transnational Institute, Jayati Gosh: Palestine is the end of the rules-based international order, October 22, 2024, https://www.youtube.com/watch?v=BAOoWBAIUOw.

[13] Jayati Ghosh, October 28, 2024, 11:08 PM, https://x.com/Jayati1609/status/1851128844981285076.

Various economics organizations have also issued statements in solidarity with Gaza and the Palestinians. For instance, the Union for Radical Political Economics issued a statement under "Economists for Palestine":[14]

> "Since the Nakba 75 years ago, the Palestinian people have endured profound suffering, forced displacement, and a brutal 16-year-long inhumane siege and blockade in Gaza. Human rights organizations have characterized Gaza as 'the largest open-air prison'. We also condemn the role of the U.S. state in supporting the ongoing siege in Palestine, its support for the horrors inflicted on Gaza, … In addition, we strongly uphold the principle of academic freedom, especially in light of the current global climate where individuals in educational institutions worldwide face termination, doxing, and harassment for speaking up against the atrocities of the Israeli state and in support of the civilian population in Gaza."

Similarly, the International Society for Ecological Economics issued their statement on Gaza:[15]

> "Israeli scholar Raz Segal calls the current situation "a textbook case of Genocide" … We condemn the Israeli massacre, displacement, imprisonment, and dehumanization of Palestinians. ... In line with UN resolutions, we recognize the legitimate right to resist colonial domination within the boundaries of international law. … We denounce the criminalization of solidarity with Palestine and weaponization of the crucial struggle against antisemitism to censor virtually any critiques of Israel's policy towards Palestine, genocide, and colonial occupation. … We insist that such ideology and this conflict are also deeply damaging to Israeli society itself, which is moving more than ever towards an ethno-nationalist drift where hatred and racism thrive. … We express our solidarity and support to our colleagues and scholars working on Palestine and Israel facing threats and defamation for simply doing their work of enlightening the public debate with critical analyses."

Finally, the student-led organization, Rethinking Economics, noted for advocating economic pluralism and real-world issues in economics curriculum in the aftermath of the financial crisis, has issued its own statement:[16]

> "As an organisation which views inequality as a major global challenge, we unreservedly oppose apartheid, ethnic cleansing, imperialism and reaffirm the fundamental equality between all peoples. Israel's history has been tied to the history of colonialism, at the expense of Palestinian people and we are dismayed at the U.S. and European support for the ongoing siege ... We value an economics education that discusses power relations, the economics of occupation, challenges imperialist theories and that gives voice to Palestinians living under apartheid. … We strongly advocate for all universities to preserve the right to protest against Israel's war crimes against Palestinians and its history of oppression. We strongly condemn any

[14] Economists for Palestine, November 8, 2023, https://urpe.org/2023/11/08/economists-for-palestine/.

[15] ISEE Statement on Gaza, December 27, 2023, https://www.isecoeco.org/isee-statement-on-gaza/.

[16] Rethinking Economics, A Statement on Israel- Palestine, November 15, 2023, https://www.rethinkeconomics.org/blog/2023/11/15/a-statement-on-israel-palestine/.

> universities and research bodies sanctioning students, staff and academics for exercising these rights …"

Overall, noted critical economists and economics organizations view Gaza through a systems approach informed by a history of settler colonialism, occupation, apartheid, and genocide. They have adopted collective civic positions that call for radical change in the status quo that subjugates Palestinians in both the West Bank and Gaza.

Concluding Remarks

The objective in this paper was to highlight the economics of Gaza by delineating the topics of structural occupation and energy conflict, free markets versus free market of ideas, economics of extremism, the economics of crime and discrimination, cultural stereotypes and crowding out of morality. It was shown that economic analysis emphasizes that structural occupation and petrodollars instigate radicalization and shows that the returns of large oil companies are dependent on energy conflict, which suggests that capitalist interests drive the suffering in Gaza. The inconsistency between the rhetoric on free markets and the free market of ideas was also emphasized, which shows that weaponized victimhood is used to quell legitimate critique.

Economic analysis helps us recognize the positive feedback loop where state sanctioned structural occupation leads to perceived grievances and violence, which in turn elicits more state repression in a vicious cycle. Economic analysis also shows that terrorism does not arise because of religion, poverty, or mental illness and that terrorism is not addressed by indiscriminate bombing but addressing political grievances, which means an end to the structural occupation. However, it was shown that the economics of crime and discrimination are limited in capturing the harms of male rape and settler colonial violence.

Finally, it was shown that effective institutions and systemic change means rejecting ethno-racial states, but if intrinsic morality is corrupted and corrupt systems are deeply entrenched then a radical overhaul of society is required through collective civic action. In this regard, critical economists and economics organizations have issued strong statements against settler colonialism, occupation, apartheid, and genocide and called for radical change in the status quo that subjugates Palestinians. Overall, the economics of Gaza was presented through an interdisciplinary approach by drawing literature from the nexus between economics and theology, law, and philosophy.

References

Akhter, S. and Saratchand, C. (2023) "Indian Media: A Victim of Neoconservatism and Cronyism", *Fair Observer*, March 5, https://www.fairobserver.com/world-news/indian-media-a-victim-of-neoconservatism-and-cronyism/# (Accessed: December 26, 2024).

Aldred, J. (2020) *Licence to be Bad: How Economics Corrupted Us*, Penguin Books, UK.

Al-Mughrabi, N. (2023) "Israeli images showing Palestinian detainees in underwear spark outrage", *Reuters*, December 8, https://www.reuters.com/world/middle-east/hamas-condemns-israel-over-images-showing-semi-naked-palestinian-prisoners-2023-12-08/ (Accessed: December 26, 2024).

Al-Riffai, P. (2024) "The economic and social costs of the war in Gaza", Atlantic Council, https://www.atlanticcouncil.org/in-depth-research-reports/report/the-economic-and-social-costs-of-the-war-in-gaza/ (Accessed: December 26, 2024).

Berrebi, C. (2003) "Evidence About the Link between Education, Poverty and Terrorism Among Palestinians", Princeton University Industrial Relations Section Working Paper No. 477, SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=487467 (Accessed: December 26, 2024).

Bichler, S. and Nitzan, J. (2024a) "The Road to Gaza", Working Papers on Capital as Power, August, https://bnarchives.net/id/eprint/830/ (Accessed: December 26, 2024).

Bichler, S. and Nitzan, J. (2024b) "The Road to Gaza, Part II: The Capitalization of Everything", *Real-World Economics Review*, 109: 18-18.

Brekke, T. (2016) *Faithonomics: Religion and the Free Market*, Oxford University Press, Oxford.

Bryan, R. (2015) "The refreshing bluntness of Ayelet Shaked", Mondoweiss, October 3, https://mondoweiss.net/2015/10/refreshing-bluntness-shaked/ (Accessed: December 26, 2024).

Chalabi, M. (2024) "Settler violence against Palestinians in the West Bank – visualized", The Guardian, April 22, https://www.theguardian.com/world/2024/apr/22/israel-settlers-violence-against-palestine-west-bank (Accessed: December 26, 2024).

Chang, Ha-Joon (2007) *Bad Samaritans*, Bloomsbury Press, New York.

Chang, H.-J., & Lari, T. (2024) "Economics, Pluralism and Democracy: An Interview with Ha-Joon Chang", *Erasmus Journal for Philosophy and Economics*, *17*(2): aa-aa.

Cordall, S.S. (2024) "Dying in 'Hell': The fate of Palestinian medics jailed by Israel", *Al Jazeera*, November 24, https://www.aljazeera.com/news/2024/11/24/dying-in-hell-palestinian-medics-jailed-by-israel (Accessed: December 26, 2024).

Dey S. (2025) "The Saffronization of Public Knowledge in India", *Public Humanities,* 1:e10, 1-5.

Essa, A. (2023) *Hostile Homelands: The New Alliance Between India and Israel*, Pluto Press, London.

Friedman, H.H. (2010) "Return to Sodom and Gomorrah: The 'New' Political-Economic System", SSRN, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1697822.

Fúnez-Flores, J. I. (2024) "The Coloniality of Academic Freedom and the Palestine Exception", *Middle East Critique*, 33(3), 465–485.

Gifford, B. (2019) "Prison Crime and the Economics of Incarceration", *Stanford Law Review*, 7(1): 71-135.

Gordon, N. (2024) "Antisemitism and Zionism: The Internal Operations of the IHRA Definition", *Middle East Critique*, 33(3), 345–360.

Iannaccone, L.R. (1997) "Toward an Economic Theory of "Fundamentalism"", *Journal of Institutional and Theoretical Economics,* 153(1): 100–116.

Iannaccone L.R. (2006) "The Market for Martyrs", *Interdisciplinary Journal of Research on Religion*, 2(Article 4): 1-29.

Iannaccone L.R. (2012) "Extremism and the economics of religion", *Economic Record*, 88(S1): 110–115.

Intriligator, M. (2010) "The Economics of Terrorism", *Economic Inquiry*, 48(1): 1-13.

Khaki, A., Haveliwala, H. and Srivastava, V. (2024) "Starvation is a weapon of war: Gazans are paying the price", *The Conversation*, March 21, https://theconversation.com/starvation-is-a-weapon-of-war-gazans-are-paying-the-price-226086 (Accessed: December 26, 2024).

Klor, E. and Berrebi, C. (2005) "The Impact of Terrorism Across Industries: An Empirical Study", CEPR Discussion Papers 5360, C.E.P.R. Discussion Papers.

Komlos, J. (2021) "The Becker model of discrimination is anachronistic and should no longer be taught", Real-World Economics Review, 98: 87-91.

Krueger, A.B., and Maleckova, J. (2003) "Education, Poverty and Terrorism: Is There a Causal Connection?" Journal of Economic Perspectives, 17 (4): 119–144.

Lanard, N. (2023) “The Dangerous History Behind Netanyahu’s Amalek Rhetoric”, Mother

Jones, November 3, https://www.motherjones.com/politics/2023/11/benjamin-netanyahu-amalek-israel-palestine-gaza-saul-samuel-old-testament/ (Accessed: December 26, 2024).

Maududi, S.A.A. (2006) Towards Understanding the Qur’an. Translated by Zafar Ishaq Ansari. Leicester: The Islamic Foundation. http://www.tafheem.net/main800.html (Accessed: December 26, 2024).

Piketty, T. (2024) “Thomas Piketty: 'If the West truly supports the two-state solution, it must sanction Israel', Le Monde, May 11, https://www.lemonde.fr/en/opinion/article/2024/05/11/thomas-piketty-if-the-west-truly-supports-the-two-state-solution-it-must-sanction-israel_6671073_23.html (Accessed: December 26, 2024).

Pontone, M. (2023) “Israeli Scholars and Artists Call Occupation of Palestine “Apartheid””, Hyperallergic, August 13, https://hyperallergic.com/838451/israeli-scholars-and-artists-call-occupation-of-palestine-apartheid/ (Accessed: December 26, 2024).

Quran, F. (2023) “I Saw the Haunting Reality of Palestinian Child Prisoners”, *Time*, December 14, https://time.com/6366734/palestinian-child-detainees/ (Accessed: December 26, 2024).

Roy, I. (2024). “India: the making and resisting of an ethnocracy”, *India Review*, 23(3), 177–196.

Salaita, S. (2024) “The Free Speech Exception to Palestine”, *Middle East Critique*, 33(3), 361–375.

Sandel, M. (2012) “How Markets Crowd Out Morals”, *Boston Review*, June 20, https://www.bostonreview.net/forum/forum-sandel-markets-morals/ (Accessed: December 26, 2024).

Segal, R. (2023) “A Textbooks Case of Genocide”, Jewish Currents, October 13, https://jewishcurrents.org/a-textbook-case-of-genocide (Accessed: December 26, 2024).

Sharma, H., & Pegu, U. K. (2023) “Is the liberal media dead?” A critical analysis of Modi’s Government and the performance of Indian Media”, *India Review*, 22(3), 219–248.

Varoufakis (2024) “The Speech That Got Me Banned From Germany”, Jacobin, April 13, https://jacobin.com/2024/04/yanis-varoufakis-germany-banned-palestine-gaza (Accessed: December 26, 2024).

Wagner-Tsukamoto, S.A. (2017/2019) ‘The Cities of Genesis: Religion, Economics and the Rise of Modernity’, *Textual Cultures*, 11(1-2): 206-245.

Author contact: binjahangirj@macewan.ca

SUGGESTED CITATION:
Junaid B. Jahangir, “Economics of Gaza”, *real-world economics review*, issue no. 110, March 2025, pp.55–66, http://www.paecon.net/PAEReview/issue110/Jahangir110

You may post and read comments on this paper at https://rwer.wordpress.com/comments-on-rwer-issue-110/

A Heterodox Commentary on the New Coronavarius Economy

Marc Pilkington
[Laboratoire d'Economie de Dijon]

Abstract
We present a time-dependent heterodox commentary of the new coronavirus economy that emerged in the first quarter of 2020, consisting of an unprecedented sequence in the history of the world economy. In a first part, we examine the orthodox claim that austerity measures cut budget deficits. We draw on two alternative heterodox theories that shed substantial light on the 2020-2021 coronavirus pandemic. We argue that central banks have covered deficits since 2008 without resorting to helicopter money. Secondly, we examine the paradigmatic shift propelled by the pandemic, and its austerity-crushing corollary, by examining the nature and magnitude of the recession.

Keywords: pandemic, crisis-management, MMT, QE, stimulus package

JEL Codes: B52, E00, E12, H12, H51

Introduction

The new coronavirus economy emerged in the first quarter of 2020, leading to an unprecedented sequence in the history of the world economy. In the first part, we investigate the claim that austerity measures cut budget deficits in mainstream theory. In contradistinction, we draw on two heterodox theories that shed substantial light on the pandemic. Further, we argue that central banks have covered deficits since 2008 and will continue to do so in the foreseeable feature. In a second part, we argue that the pandemic has crushed austerity policies, paving the way for a paradigmatic shift.

1. Austerity Policies, Deficits and Central Banks

1.1. The Mainstream Approach

'Austere' comes from the Latin *austerus* (dry, harsh), a transliteration of the Greek austeros (bitter, harsh; Gr.: αυστηρός). Austerity comes hand in hand with painful economic conditions imposed upon a country by a political authority capable of obtaining the consent of the population (whether peacefully or by virtue of law enforcement). Misir (2011, p.8) casts light on the painful period of adjustment undergone by many European countries, because of the implementation of austerity policies. The elimination of basic social services, wage depression and reduced investments in infrastructure was conducive to higher levels of insecurity and rising inequalities, thereby undermining the essence of the social contract. Kentikelenis et al. (2011) epitomize the phenomenon by stating that austerity may turn a crisis into an epidemic. The authors single out a sharp rise in suicides across Europe from 2007 to 2009, more particularly in countries afflicted by the financial crisis, such as Greece and Ireland: 'financial crisis puts the lives of ordinary people at risk, but much more dangerous is when there are radical cuts to social protection.' All in all, the mainstream narrative is that all governments have a budget constraint, and thus the State can only spend based on that constraint, usually taxes (Agrawal, 2020). Mainstream economists are careful not to openly advocate austerity (which enjoys low popular support), and often refer instead to the monetary dominance principle (Jeanne, 2012), subordinating fiscal policy to monetary policy: "restraining the fiscal authorities from engaging in excessive deficits financing *thus aligns fiscal policy with monetary policy* and makes it easier for the monetary authorities to keep inflation under control" (Mishkin, 2000, p.2, italics added). The main characteristic of austerity measures is that they are usually presented to the population in a TINA (there is no alternative) fashion (Tabb, 1997). However, the predictions of orthodoxy have not always been verified since 2008.

Table 1: Comparisons between orthodox predictions and the post 2008 period

Policy actions	Impact in orthodox theory	Observed situation since 2008
Massive government spending	Widening deficits and interest rates increases, through the so- called crowding-out effect	Public deficits have widened in most countries, but interest rate have been kept low, and in some cases in negative territory.
Expansionary monetary policy	Inflation (even hyper-inflation): quantity theory of money run on the currency and collapse of the exchange rates	Low inflation levels observed (see Figures 1 and 2) Not a concern for the USA (reserve currency status); Quantitative easing policies have supplied emergent markets with abundant dollar liquidities. Exchange rate crises in emergent economies subdued.

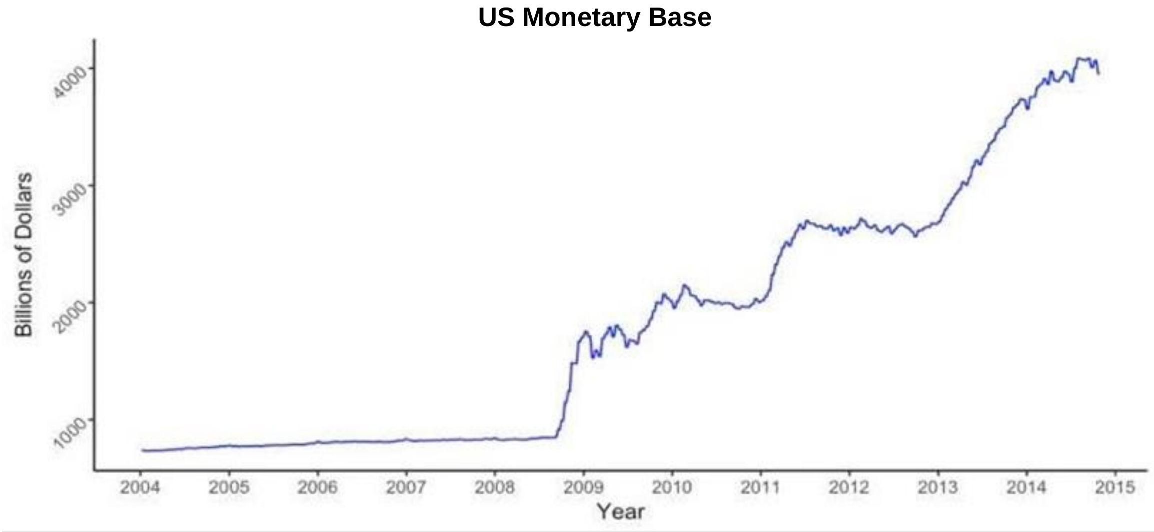


Figure 1: Evolution of the US money supply between 2004 and 2015

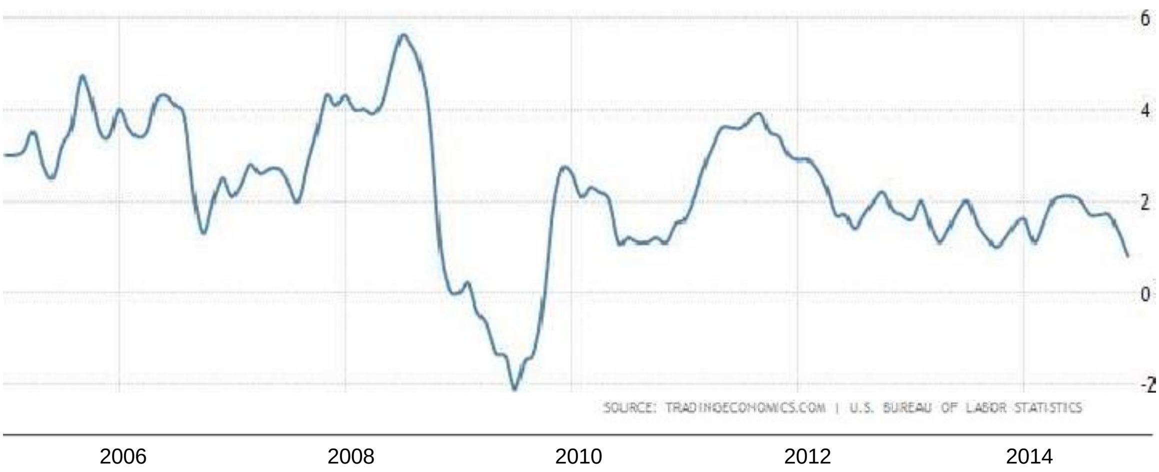


Figure 2: Evolution of the US inflation rate between 2004 and 2015

1.2. The Critique of the Mainstream

1.2.1. Modern Monetary Theory (MMT)

In sharp contrast with orthodox austerity policies, modern monetary theory (hereafter MMT) whose influences include Knapp (1924), Keynes (1930), Innes (1913, 1914), Lerner (1943, 1947), Minsky (1986), Godley (1996), expounds a set of widely commented upon heterodox principles over the last few years (Wray, 2019, p.5). The interested reader may consult the writings of Wray (1998; 2015), Kelton (2015), Tymoigne (2013), Mosler (1994), and the Levy institute website: http://www.levyinstitute.org. Drawing on his definition of sovereign currency, Wray (2015, p.44-5) clarifies the situation faced by a national Government with a sovereign currency, which differs entirely from that of a household and its budget balancing constraint (Wray, 2019, p.6). Such a currency-issuing sovereign state can never run out of money because it issues its own currency (Wray and Tymoigne, 2015, pp. 24-5); “it can always meet its obligations by paying in its own currency; it can set the interest rate on any obligations it issues” (Wray, 2019, p.6). Deficits do not constrain a priori public investment programs (Agrawal, 2020). Further, the Government does not need taxes *ex ante* to fund its spending. If a country is running a current account deficit, the public sector will need to be in deficit to allow the private sector to save. This stems from the nature of money as a credit/debit relation. These principles do *not* entail a corollary that the Government has an "unconstrained budget" or that "deficits do not matter" (Wray, 2019, p.6). Agrawal (2020) wonders whether the current global coronavirus crisis could be "the MMTers' moment in the sun". With its emphasis on the clearing and settlement system (Mosler, 1994), MMT endorses an idiosyncratic version of endogenous money theory, a central tenet of post-Keynesian economics, with an unexpected intellectual detour through double-entry book- keeping that Schmitt (1984), though silent on chartalism in his career, would probably not have disapproved of in full.

> Spending and creation of "money" in the form of a bank deposit are linked. It is best to think of these as balance sheet entries: the bank accepts the IOU of the borrower and credits her demand deposit; the borrower's IOU is offset by the credit to her deposit. Spending then simply shifts the demand deposit to a seller. Money is created "endogenously" to finance spending (Fullwiler et al., 2012, p.2).

The endorsement of endogenous money puts MMT at odds with Friedman (1968); it undermines the accusation made by Buiter (2020) of pouring "helicopter money" onto the economy through quantitative easing (hereafter QE) practices. The embrace of exogenous money is ill-founded, for it ignores the balance sheet nexus interlinking the central bank and the Government. Epstein (2019) voiced harsh criticism at MMT, despite its appeal for its lack of concern over budget deficits independent of circumstance, going as far as considering the framework as suspect with its lack of attention to globalization, financialization, and the exorbitant privilege of the Dollar (Eichengreen, 2011). In a surprising twist, Epstein (2020, italics added) wrote in March 2020, that "MMT appears to be valid enough *in the special case of the coronavirus economy, especially with respect to rich countries*". The new coronavirus economy will be given further consideration in Part 2. Meanwhile, we evoke an economist who has dealt extensively with debt dynamics and the (sometimes destabilizing) role of borrowing in the capitalist system.

1.2.2. The Insights of Minsky

The fierce disagreements between Epstein and Wray (therealnews.com, 2019) and milder ones between the latter and respectively Lavoie (2013), Piegay and Desmedt (2007), Rochon and Vernengo (2003), Gnos and Rochon (2002), have highlighted that heterodoxy is far from united on money theoretical issues. Amongst the claimed influences on MMT, we find Minsky[1]. The latter is one of the most relevant economists to characterize the state of the global economy in a way that challenges mainstream economics, notably due to the excessive indebtedness of private equity firms (Stoller, 2020). How does Minsky (1986, 1992) pertain to the debate on austerity, with his emphasis on the fragility of corporate balance sheets, and the evolution of firms' leverage ratios over time, driven by waves of euphoria and confidence, and fear? Importantly enough, austerity was never defined exclusively with regard to the public sector (wherein debt dynamics and public policies remain paramount) and may also apply to wage austerity (preceding or following a financial bubble). Minsky has shown that a growing divergence between stock market prices from output prices constitutes a market failure to validate equity prices in the light of the fundamentals of the economy (Nikiforos, 2020). Hence corporate leverage ratios should act in principle as crisis-warning indicators in a capitalist

1 Wray was his student, although Epstein (2019) casts doubt on this intellectual filiation.

economy. When so-called speculative and Ponzi entities abound, the economy becomes financially fragile (Minsky, 1992, p. 7), which has been the case in the USA over the last decade despite low interest rates (Nikiforos, 2020). Lastly, a wave of corporate bankruptcies in times of severe crisis (which need to be closely monitored in the aftermath of an unprecedented recession) will have *in fine* an impact on fiscal revenue, and in some cases, on public spending in the case of bailout and nationalization programs.

1.3. Fiscal Deficits and Central Banks

QE is an unconventional, confidence building and liquidity enhancing post-crisis monetary policy that increases the money supply by flooding financial institutions with additional reserves, to promote increased lending and liquidity. The main issues as regards QE policies are whether (1) they amount to helicopter money, and are potentially inflationary in a quantity theoretical fashion, (2) effectively contribute to increased lending to the real sphere of the economy and promote economic activity (3) have durable impact on the workings of financial markets. The latter is beyond the scope of the present study. Numerous economists equate QE to helicopter money (Buiter, 2020), a claim we disagree with. Helicopter money was originally discussed by Friedman (1948) and more recently by Bernanke (2003) in relation to the zero lower bound problem, and Japan's QE experiment in the 1990s (Koo, 2011). Transfers to households and businesses can be implemented via tax cuts coupled with incremental purchases of government debt to ensure that the tax cuts are countervailed by an equivalent money supply increase. Another proposal was made by Galí (2020, italics added):

> In the current context, the central bank could credit the government's account (or governments, in the case of the ECB) for the amount of the additional transfers and for the duration of the program. That credit would *not* be repayable, i.e. it would amount to a transfer from the central bank to the government. From an accounting viewpoint, it would be captured by a reduction in the central bank's capital or by a permanent annotation on the asset side of its balance sheet.

This stunning proposal by a former NMC advocate (Pilkington, 2013; 2020) amounts to a renunciation to central bank independence (arguably justified in extraordinary times but casting doubt on the validity of the "laws" of the NMC). Yet the proposal does not equate to QE policies *per se* that entail the purchase of financial assets by the central banks, and an increase on the asset side of their balance sheet. Borio and Disyatat (2009, p.19) argue that:

> the level of bank reserves plays little role to none in shaping banks' lending behaviour… The amount of credit outstanding is determined by banks' willingness to supply loans, based on perceived risk-return trade-offs, and by the demand for these loans.

This vindicates post-Keynesian endogenous money theory, and long-ignored claim that money is credit-driven and demand-determined (Moore, 1988). As the story goes, money cannot be supplied to the real economy unless creditworthy borrowers are willing to increase their indebtedness level toward the banking sector. QE policies do not artificially increase the money supply, and do not disprove the theory of endogenous money. QE policies do not increase the ability of banks to create loans ex nihilo (with the help of a hypothetical helicopter printing press), or to help spend money that did not exist before. In phase with MMT, the effect of QE is merely to replace longer-dated treasuries with low-yield bank reserves on bank balance sheets, thereby forcing the private sector out of treasuries and into cash. The money-printing metaphor, akin to the helicopter money view is particularly misleading. Double-entry bookkeeping is what QE amounts to, namely an electronic swap of bank deposits (i.e. reserves) with interest-bearing assets (i.e. treasuries) on bank balance sheets.

Notwithstanding, QE policies entail the monetization of public deficits in a way that is indirect through the secondary market for eligible assets purchased by the central bank (i.e. the direct financing of public deficits by the central banks – the purchase of newly issued government bonds on the primary market - remains strictly prohibited by European treaties and most central bank statutes worldwide). In this sense, although they do not disprove the endogeneity of money as far as industrial circulation is concerned (Keynes, 1930), QE programs constitute an unambiguous limitation to the strict application of austerity policies.

Stimulus packages decided from March 2020 onward (see Table 3) are discussed in further detail in Part 2. We solely focus on QE measures in this section. The Federal Reserve, the ECB, and the Bank of England announced unlimited QE including purchases of government bonds, commercial paper (and mortgage-backed securities for the Fed). The Centre for Macroeconomics (CFM), a UK think tank based, published a survey wherein twenty-nine experts were asked which policies would be the most effective in the emergency context of the pandemic (Ilzetzki, 2020). Only two experts (6.9%) put QE measures in their "top 2 preferred responses to the COVID-19 crisis" against 51.7% for Government credit support for businesses, and 44.8% for government transfers to and bailouts of business. Only the latter policy option, and not QE, corresponds to "helicopter money" in the literature. These results pertain to expert views, but nonetheless shed light on the perceived effectiveness of QE to stimulate the real economy in the very short run.

2. The New Coronavirus Economy

In Part 1, we discussed MMT that runs counter to the orthodox and money-theoretical frameworks that have inspired austerity policies, and more broadly, monetary policy throughout the monetarist era, and during the NMC. An abundant literature exists on the latter wherein several mantras are singled out (e.g., transparency, credibility, low inflation). We argue that the overarching theoretical principle behind the NMC, from its inception in the 1990s to its demise (Pilkington, 2020), is the monetary dominance principle.

> Monetary dominance means, broadly speaking, that the monetary authorities do not let monetary policy be influenced by the needs of the fiscal authorities. Monetary dominance is often modeled by assuming a fiscal rule that ensures that the government is always solvent conditional on monetary policy following its own objectives (Jeanne, 2012, p.145).

Following McCormick (2020), the pandemic marks the second stage of a paradigm shift, the end of monetary dominance and the return of fiscal reliance. By turning this paradigmatic shift (initiated in 2008) into reality, the pandemic has ironically succeeded where heterodox economists had failed.

2.1. What is COVID-19? An Epidemiologic Overview

The Coronavirus COVID-19 outbreak (previously 2019-nCoV) was caused by the SARS- CoV-2 virus from the broader group of coronaviruses ('corona' means crown in Latin). It originated in December 2019 in Wuhan city in Hubei province of China. The first reported cases were in China, and travelers returning from China. The epicenter of the outbreak gradually moved from China to Europe and was qualified on 11 March 2020 as a pandemic (World Health Organization, 2020). Pandemics are not unknown to Historians (see Table 2).

Table 2: Pandemics in the twentieth and twenty-first century

Pandemic	Date
Spanish Influenza	1918
the 'Asian flu'	1957
Severe Acute Respiratory Syndrome (SARS)	2002
The 'bird flu'	2009
Middle East Respiratory Syndrome (MERS)	2012
Ebola	2013-14
COVID-19	2020-21

Daily updates on reported cases and deaths by country are provided by the European Centre for Disease Prevention and Control (2021). Dr Syra Madad, System Special Pathogens Program's Senior Director at NYC Health and Hospitals warned in March 2020 that:

> This particular virus seems like it is highly transmissible… I think that it is certainly plausible that 40–70% of the world's population could become infected with coronavirus disease, but a large number of cases are [expected to be] mild (Madad cited in Leberecht, 2020).

More accurately, by January 2021, one hundred million cases, namely 1.3% of the world population, had been reported (Ahluwalia & Abraham, 2021). Contained outside China until February 2020, the exponential growth began in the first week of March 2020. The spread of the pandemic (World Health Organization, 2020) was an unprecedented shock to the global economy as much by its suddenness and its magnitude whose consequences are expected to surpass those of the global financial crisis.

2.2. A Supply-led and Demand-led Global Recession

2.2.1. The Magnitude of the Recession

IMF chief Kristalina Georgieva declared on 27 March 2020 that the world had entered a recession likely to be worse than 2009 (IMF, 2020a). She requested an increase in the IMF emergency facilities from their current level of around $50 billion and said that the estimate for the total needs of emerging markets was $2.5 trillion, because their domestic reserves are insufficient. Emergent economies, many of which are already hindered by plummeting oil and commodity prices, thereby affecting their access to US dollars (Reinhard, 2020), are unable to undertake a massive domestic currency borrowing effort. The portfolio outflows from emerging markets in Q1 2020 were about $100 billion (IMF, 2020b). These tensions exacerbated sovereign spreads, approaching 40 percentage points in the case of Ecuador

(Reinhard, 2020). Notwithstanding, by early 2021, emerging market assets had experienced a strong recovery under the impact of stimulus money (Wheatley, 2021), while the IMF had doubled its emergency facilities (Rapid Credit Facility and Rapid Financing Instrument) to eighty countries. Twenty-nine of the most vulnerable member countries have benefited from debt service relief through the Catastrophe Containment and Relief Trust (CCRT), and the IMF is seeking additional financial assistance through donations and grants (IMF, 2021)

Doomsayer Roubini (2020), ponders who may bail out governments, corporations, banks, and households in emerging markets; he argues that the bleak scenario of a new Great Depression is plausible. The IMF recognized on 9 April 2020 that it was anticipating "the worst economic fallout since the Great Depression" (IMF, 2020b). The December 2020 Eurosystem macroeconomic projections for the euro area foresaw annual real GDP decreasing by 7.3% in 2020, and increasing by 3.9% in 2021, 4.2% in 2022 and 2.1% 2023 (ECB, 2021). The magnitude of the shock and disruption to the world economy has already surpassed the 2008-2009 financial crisis with all countries and regions suffering double-digit declines in exports and imports in 2020. Global foreign direct investment (FDI) also collapsed, falling 42% from $1.5 trillion in 2019 to an estimated $859 billion, more than 30% below the investment trough after the global financial crisis (UNCTAD, 2021).

South East Asia (ibid.) has displayed a higher degree of resilience, which led The Economist (2020) to wonder on its cover if China was not winning the (economic) game? Although China's GDP shrank 6.8% in Q1 2020 amid shutdowns (Bloomberg, 2020) while criticism and pressure against China's management of the pandemic mounted throughout 2020 (AFP, 2020), Q2 and Q3 saw a strong rebound of the economy with a positive annual GDP growth around 2.2% (BBC, 2021).

2.2.2. Supply-led and Demand-led Factors

Pilkington (2011) reminds us that there exists a tradition of theories of the business cycle in the literature ascribing their main cause to real phenomena. From Schumpeter and Slutzky in the 1930s to real business cycles theories in the 1980s, and their natural extension, the rich class of formal DSGE (Dynamic Stochastic General Equilibrium) models thriving in academia since the late 1990s, these randomized shocks amount to "external events, which throw the economy into confusion" (493). The pandemic, albeit exposing latent vulnerabilities in the world economy, is an example of a pure exogenous shock (Danielsson et al., 2020). Fundamentally, it cumulates supply-led (output related, such as factory closures, travel bans and border closings) and demand-led factors (uncertainty-related) forming a complex array of sub-categories of shocks.

Baldwin and Di Mauro (2020) focus on the manufacturing sector and its integrated global value chains that will experience a triple hit, through supply-chain disruptions in the most afflicted nations, with negative spillover effects on less afflicted ones. Firms mired with Knightian (i.e. non-probabilistic) uncertainty have delayed investments, thereby affecting both aggregate supply and demand patterns. The most afflicted industries have been travel, transport, hospitality and tourism. Global tourism suffered its worst year on record in 2020, with international arrivals dropping by 74% (against merely -4% in 2009) while destinations worldwide welcomed one billion fewer international arrivals than 2019 (World Tourism Organization, 2021). Demand-led shocks have arguably exceeded the supply-led ones. Prolonged quarantines, lack of social interactions, and pessimistic news round the clock vehicle by the media hit confidence directly by shaping long-term pessimistic expectations. Baldwin and Weder Di Mauro (2020, p12) explain that cognitive belief-based elements are paramount, such as the controversy on the combination of hydroxychloroquine and azithromycin (Duqueroy, 2020). The latter are conducive to multiple equilibria, non-linear and chaotic dynamics, reinforced by hyper-connectivity and the role played by social media in the dissemination of unverified information.

2.3. The Response of Central Banks and Governments

2.3.1. Stimulus Packages

Table 3 shows that the largest stimulus package was voted by the US Congress ($ 2 trillion and 10% of GDP) while Denmark records the highest state guarantees / GDP ratio (13%). In the lack of a euro area economic government, measures decided by the ECB have included a stunning expansion of €750 billion in QE programs. By April 2020, countries around the world had already taken fiscal actions amounting to $8 trillion (IMF, 2020b).

Table 3: Stimulus packages in selected countries /areas

Country / Measure	**USA**[2,3]	**United Kingdom**	**Denmark**	**EU**
Direct Payments to households	In December 2020, US Congress passed legislation providing Americans with $600 in stimulus. The American Rescue Plan signed by President Biden (Whitehouse, 2021)		1000 DKK per person on 1 October 2020 to boost the economy[4]	n/a
Suspension of loans	Student loan forgiveness not included			n/a
Unemployment benefits	$400 per week in enhanced unemployment benefits.	Employment support scheme targeted at those aged 16-24 who have been claiming Universal Credit	Extension of unemployment and sickness benefits of respectively two and three months.	n/a
Loans, guarantees, investments	$500 billion (US Treasury)	Total stock of asset purchases = £745 billion (18 June 2020)[5] SME support (loan repayment facilities, "pay as you grow")	75% of salaries guaranteed to avoid layoffs (13% of GDP) loan guarantee on 70% of new business loans to cover DKK 1 billion in COVID-19 related losses	€750 billion Pandemic Emergency Purchase Programme extension of the corporate sector purchase programme'
Airline industry	$32 billion in grants for wages and benefits	Calls for urgent support		n/a

2 .https://edition.cnn.com/2020/03/25/politics/stimulus-package-details-coronavirus/index.html.

3 https://www.whitehouse.gov/briefing-room/legislation/2021/01/20/president-biden-announces-american-rescue-plan/.

4 https://home.kpmg/xx/en/home/insights/2020/04/denmark-government-and-institution-measures-in-response-to-covid.html.

5 https://www.bankofengland.co.uk/markets/market-notices/2020/asset-purchase-facility-gilt-purchases-june-2020

Hospitals, schools and social housing	$117 billion for hospitals	a £1bn commitment to de-carbonising public sector buildings[6]		n/a
Independent contractors	Eligible to Federal Aid			n/a
Housing market	housing protections against foreclosures on mortgages and evictions for renters.			n/a
Performing Arts	$25 million to support the John F. Kennedy Center		Entertainment event support	n/a
Evacuation expenses	$324 million for the State Department			n/a
Other	$324 million (diplomatic programs), $258 million (international disaster assistance), $350 million (migration and refugee assistance) $95 mil. (USAID)	Covid Corporate Financing Facility = purchase of commercial paper (up to 1-year maturity) issued by UK firms making a material contribution to the economy.		n/a

On 9 April 2020, the Eurozone ministers of Finance reached an agreement to mobilize €540 billion in loans and launch a fund to boost the EU economy. The first pillar was a €240 billion line of credit through the European Stability Mechanism, whereby countries will be allowed to request financing of up to 2 per cent of their GDP. The second pillar was a €200 billion European Investment Bank guarantee fund; the third was an Employment Reinsurance Fund (Strupczewski and Baczynska, 2020). Eurogroup President Mário Centeno stated on 9 April

> Today, we agreed upon three safety nets and a plan for the recovery, to ensure we grow together, not apart, once the virus is behind us […]. These proposals build on our collective financial strength and European solidarity (Council of the European Union, 2020).

In July 2020, the final details of the agreement raised the figures to a 750-billion-euro emergency fund, 390 billion euros of grants, and 360 billion euros of low-interest loans. Yet, it is unlikely that the first instance of Eurobond issuance will translate into a “Hamilton moment” for the EU, still devoid of a federal economic administration (Chrysoloras and Ainger, 2020).

2.3.2. The Pandemic: A Keynesian Revival?

Stimulus packages featured in Table 3 speak volumes; Epstein believes that they correspond to ‘a Richard Nixon “We’re all Keynesians now” moment’ (New York Times, 1971). Fast-track forward; Donald Trump was never short of surprises in March 2020. Not only the 43rd US President whose policies had seemed more inspired by Reagan than Keynes after his election in 2016, signed on Friday 27 March, 2020, the largest fiscal stimulus package ever, but some of his public statements have come

[6] https://home.kpmg/xx/en/home/insights/2020/04/united-kingdom-government-and-institution-measures-in-response-to-covid.html

as Keynesian in spirit. For example, on the same day he signed into law the record stimulus package, he tweeted a very Keynesian injunction to General Motors (Trump, 2020, tweet). By invoking the seldom used 1950s-era Defense Production Act, conferring the president power to force manufacturers to make needed equipment in national emergencies, Trump's swift policy turn was not alien to Keynes. On 31 March 2020, French President Macron stated that in the face of the Covid-19 pandemic and the rising number of casualties, he had ordered French medical equipment companies to triple mask production by the end of April, and produce 10,000 extra respirators (Pennetier and Irish, 2020).

2.4. Can Orthodox Frameworks Still be Trusted?

Despite their failure to predict the global financial crisis, following which they came under fierce criticism from leading mainstream (Lucas, 2009; Solow, 2010) and heterodox economists (Colander et al, 2010, p.405) the New Keynesian DSGE models, in the direct lineage of real business cycle models that emerged in the 1980s, associated with Kydland and Prescott (1982) and Long and Plosser (1983), have lived on. This class of models features heterogeneous random shocks disrupting otherwise structurally stable economies. Rogers (2010) has equated them to the workhouse macroeconomic models for policy analysis and forecasting, and Bernanke (2011) declared that this class of models would remain the standard approach. On 2 March 2020, OECD Chief Economist Boone (2020) gave a presentation titled "Coronavirus: the world economy at risk". Boone admitted to finalizing the baseline scenario of her forecasts during the last week of February, namely before the exponential upsurge in March. In spite of substantial uncertainty on the downside risks, she recognizes having benefited from "the global financial crisis in terms of having a menu of policy options", hinting at the recourse to DSGE models although the latter were not mentioned orally, or in her slides. Pollitt (2020), Head of Modelling at Cambridge Econometrics, mentions these OECD estimates, but remains skeptical as regards the ability to model the pandemic (probably in the light of the sheer complexity dynamics inherent in the pandemic, an argument already put forward by Colander et al. (2010) a decade earlier). Pollitt (2020) stresses the need for multidisciplinary lenses, an argument shared by El-Erian (2020, italics added), former Chairman of US President Barack Obama's Global Development Council.

> For years, the economics profession has suffered from a stubborn reluctance to adopt a more multidisciplinary approach. But now that the COVID-19 pandemic is transforming economic life the world over, the profession has no choice but to leave its comfort zone.

Mainstream analyses and aggregate GDP should not take center stage in such an unprecedented configuration whereas public health concerns should remain the priority. Pollitt (2020) argues that the pandemic should be analyzed through macro-level *and* micro-level lenses, the latter being paramount owing to the fundamental role of human interactions in diseases and economies. Pollitt (2020) suggests that OECD projections ignore network theory and complexity economics, thereby weakening their predicting power. Pollitt believes that no single economic model can assess *simultaneously* how disease spreads and predicts how the economy will react thereto. What matters most are not the methodological considerations behind the forecasts, but the policy decisions made to combat the unfolding crisis.

We offer hereafter a short demonstration and make a methodological claim. The decision to sign into law the Congress-approved US fiscal stimulus package by President Trump on 27 March 2020 could not have been made on the basis of DSGE modelling. We provide several pragmatic reasons to back up our claim.

2.4.1. The End of Complacency

Mirowski (2014, p.277) warns against the complacency displayed by the profession before, during, and following the financial crisis. Who does not recall the words of the IMF chief economist, Olivier Blanchard (2008, p.2 and 26; 2009): "the state of macro is good […] Macroeconomics is going through a period of great progress and excitement"? The coronavirus pandemic is the third global crisis of the twenty-first century after the dotcom bubble and the 2008 crisis. It might yet have been the most challenging one (United Nations, 2020).

> The new coronavirus disease is attacking societies at their core, claiming lives and people's livelihoods […] Covid-19 is the greatest test that we have faced together since the formation of the United Nations.

Echoing Robinson (cited by Kregel, 1973, p.44) who argued that today is a break between an unchangeable past and an unknowable future, mainstream economists Christiano et al. (2018, p.136) were right to doubt that DSGE models would predict the time and nature of the next crisis and concede our inability to foresee the future. However, we regret that a few sentences later (ibid., emphasis added), they reiterate their confidence that:

> DSGE models will remain central to how macroeconomists think about aggregate phenomena and policy. *There is simply no credible alternative to policy analysis* in a world of competing economic forces operating on different parts of the economy.

This statement amounts to a persisting backcloth of inopportune complacency in a post-Covid-19 world. The time is ripe for intellectual humility, and for the vast coordination of scientific efforts extending even beyond the boundaries of the economics discipline.

2.4.2. A Timeframe Incompatible with a DSGE-informed Political Decision

On March 27, 2020, Jean Tirole (Lambrecht, 2020) lamented over the "lack of preparation of the authorities, their shortsightedness linked to our political process". Let us provide a quick illustration hereafter. Former US President Donald Trump (White House, 2020) confidently declared on March 12th, 2020 that "we have very few cases relative to certain of the major countries that really have a bigger problem than us". On March 13th, 2020, Trump (cited in Qiu, 2020) was showing some signs of confusion: "You call it germ, you can call it a flu. You can call it a virus. You can call it many different names. I'm not sure anybody knows what it is". A fortnight later, the biggest stimulus package in world History was signed into law. Development economist Evans (2017) explains that, at the peak of the Ebola outbreak in West Africa, after noticing some meaningful figures, he was able to publish a short paper of 400 words (a "letter") in the Lancet within a few weeks. Yet, the publication of articles featuring DSGE models in reputed journals obeys a set of different constraints. Hereafter, we present a ten-step process before any empirical observation(s) can shape policy- making through the communication of a full-fledged DSGE model.

i. setting an objective to account for a shifting policy environment

ii. taking into account macro relationships between all variables

iii. selecting software tools for numerical analysis

iv. econometric testing making use of the empirical data

v. submitting the paper

vi. double-blind review process

vii. revisions and re-submission

viii. acceptance and final editing

ix. publication

x. results communicated to policymakers

2.4.3. The Relevance of Chaos Theory over DSGE Models

In their account of chaos theory, Faggini and Parziale (2016) wonder why economics has not accomplished what physics has. Chaos-inspired techniques are interdisciplinary, at odds with DSGE modelling (805). It is tempting to treat the pandemic as a massive exogenous shock. But the study of its actual propagation is likely to be left unexplained by DSGE models, no matter how sophisticated (featuring many countries, heterogeneous agents, emerging dynamics etc.). Contrariwise, chaos theory represents a paradigm shift with its treatment of abrupt fluctuations, endogenously and deterministically generated by the chaotic system (Gilmore 1996), drawing on complex systems, enabling a deterministic forecast, not of the system's behavior (indeterminate), but of its underlying processes (Faggini and Parziale, 2016, p.806).

Conclusion

The coronavirus pandemic has triggered one of the most severe economic crises in the history of capitalism, and given rise to the new coronavirus economy. In this article, we have highlighted the articulation between austerity, deficits, and central bank policy actions, with an emphasis on two heterodox approaches: MMT and Minsky's. Throughout the coronavirus pandemic, austerity policies were utterly discarded by Governments and central banks. The magnitude and speed of this global crisis has raised serious concerns about the validity of DSGE models, and shed new light on alternative frameworks such as chaos theory. Keynesian theory has emerged victorious from the pandemic in spite the tragic number of casualties throughout the world. In the light of a non-realized catastrophist scenario devised by many forecasters in the spring 2020 of a full collapse of the world economy, the massive stimulus packages and their unprecedented magnitude have effectively mitigated the consequences of the pandemic. In spite of the subsequent resurgence of the pandemic through the occurrence of a series of variants of various degrees of infectiousness and lethality with far reaching socio-economic consequences in many countries, such as China, the focus in this paper was on the height of uncertainty and panic in 2020 and early 2021. It is precisely at this time that radical uncertainty was at its peak in the world economy. The current conflict in Ukraine showcases that it is precisely these types of stormy configurations that post-Keynesian economics needs to focus on, not the illusory and precarious times of calm waters.

References

AFP. "China under pressure over virus origins." 17 April, 2020. Available at https://news.rthk.hk/rthk/en/video-gallery.htm?vid=1521085. Accessed April 23, 2020.

Agrawal, Amol. *Could Modern Monetary Theory rescue us from the Covid-19 economic crisis?* Moneycontrol. 23 March 2020. Available at https://www.moneycontrol.com/news/business/markets/could-modern-monetary-theory-rescue-us- from-the-covid-19-economic-crisis-5061071.html. Accessed April 23, 2020.

Ahluwalia, Shaina and Roshan Abraham (2021) Global COVID-19 cases surpass 100 million as nations tackle vaccine shortages, 27 January, Available at https://www.reuters.com/article/us-health-coronavirus-global-cases-idUSKBN29W0L6. Accessed 13 February 2021.

Baldwin, Richard, and Beatrice Di Mauro (eds). Economics in the Time of COVID-19, VoxEU.org, eBook. 6 March, 2020. Available at https://voxeu.org/content/economics-time-covid-19. Accessed April 23, 2020.

Bernanke, Ben. 2003. Remarks by Governor Ben S. *Bernanke* Before the Japan Society of Monetary Economics, Tokyo, Japan May 31

Bernanke, Ben. Speech by Mr Ben S Bernanke, Chairman of the Board of Governors of the Federal Reserve System, at the Federal Reserve Bank of Boston 56th Economic Conference, Boston, Massachusetts, 18 October, 2011.

Blanchard, Olivier. 2008. 'The state of macro.' NBER working paper 14259. Available at http://www.nber.org/papers/w14259.pdf. Accessed April 23, 2020.

Bloomberg. China Suffers Historic Economic Slump With Hard Recovery Ahead. 17 April, 2020. https://www.bloomberg.com/news/articles/2020-04-17/china-s-economy-contracts-for-first-time- since-at-least-1992. Accessed April 23, 2020.

Boone, Laurence. Coronavirus: the world economy at risk, 2 March, 2020. Available at https://www.oecd.org/economic-outlook/. Accessed April 23, 2020.

Borio Claudio and Piti Disyatat. 2009. "Unconventional monetary policies: an appraisal," BIS Working Papers 292, Bank for International Settlements.

Buiter, Willem. 'When "Whatever It Takes" Isn't Enough.' Project Syndicate, 17 March, 2020. Available at https://www.project-syndicate.org/commentary/coronavirus-fed-rate-cut-ineffective-by- willem-h-buiter-1-2020-03. Accessed April 23, 2020.

Christiano, Lawrence, Martin Eichenbaum, and Mathias Trabandt. 2018. "On DSGE models." *Journal of Economic Perspectives* 32.3 (2018): 113-40

Chrysoloras, N. and Ainger, J. (2020) Why Europe's Pandemic Recovery Deal Is a Big Deal, Bloomberg, 21 July, https://www.bloomberg.com/news/articles/2020-07-21/why-europe-s-pandemic- recovery-deal-is-a-big-deal-quicktake Accessed April 23, 2020.

Colander, David, Richard PF Holt, and J. Barkley Rosser. 2010. "How to win friends and (possibly) influence mainstream economists." *Journal of Post Keynesian Economics* 32(3): 397-408.

Council of the European Union. Eurogroup puts forward €500 billion support package! Cohesion Money focus on Coronavirus pandemic, 9 April 2020. https://www.youtube.com/watch?v=QxY8ufiRUYk. Accessed April 23, 2020.

Crotty, James. 1983. "On Keynes and Capital Flight," Journal of Economic Literature, 21(1): 59–65.

Danielsson, Jon, Robert Macrae, Dimitri Vayanos and Jean-Pierre Zigrand. "The coronavirus crisis is no 2008," 26 March 2020. Available at https://voxeu.org/article/coronavirus-crisis-no-2008#.XoHCGykuoxM.linkedin. Accessed April 23, 2020.

Duqueroy, Véronique. COVID-19: More Hydroxychloroquine Data From France, More Questions, 30 March, 2020. Available at https://www.medscape.com/viewarticle/927758. Accessed April 23, 2020.

ECB (2021), Past macroeconomic projection ranges. Available at https://www.ecb.europa.eu/mopo/strategy/ecana/html/table.en.html. Accessed 13 February 2021.

Eichengreen, Barry. 2011. *Exorbitant Privilege: The Rise and Fall of the Dollar and the Future of the International Monetary System*. New York: Oxford University

El-Erian, Mohamed. "The Race Between Economics and COVID-19," Project Syndicate, 26 March, 2020. Available at https://www.project-syndicate.org/commentary/covid19-will-change-economics- three-ways-by-mohamed-a-el-erian-2020-03. Accessed April 23, 2020.

Epstein, Gerald. "The Institutional, Empirical and Policy Limits of 'Modern Money Theory". PERI, Working Papers Series, n°489. March 2019. Available at https://www.peri.umass.edu/publication/item/1159-the-institutional-empirical-and-policy-limits-of- modern-money-theory. Accessed April 23, 2020.

Epstein, Gerald. The Coronavirus Consensus: "Spend, Spend, Spend"? Dollars & Sense, March 2020. Available at http://dollarsandsense.org/archives/2020/0320epstein--spend.html. Accessed April 23, 2020.

European Centre for Disease Prevention and Control. Situation update worldwide. 2021. https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases. Accessed April 23, 2020.

Evans, David. "10 journals for publishing a short economics paper?" World Bank blogs, 29 March, 2017. Available at https://blogs.worldbank.org/impactevaluations/10-journals-publishing-short- economics-paper. Accessed April 23, 2020.

Faggini, Marisa, and Anna Parziale. 2016. "More than 20 years of chaos in economics." Mind & Society 15(1): 53-69.

Friedman, Milton. 1948. "A Monetary and Fiscal Framework for Economic Stability." American Economic Review 38(June): 245–64

Friedman, Milton. 1968. "The role of monetary policy." *American Economic Review*, 58(1), 1-17.

Fullwiler, Scott, Stephanie Bell, & Randy Wray .2012. "Modern Money Theory: a response to critics." Available at SSRN 2008542. Accessed April 23, 2020.

Galí, Jordi. "Helicopter money: The time is now." Voxeu.17 March 2020. Available at https://voxeu.org/article/helicopter-money-time-now. Accessed April 23, 2020.

Gilmore, Claire. 1996. "A new test for chaos." *Chaos & nonlinear dynamics in the financial market*, 383-415

Godley, Wynne. 1996. "A simple model of the whole world with free trade, free capital movements, and floating exchange rates." Annandale-on-Hudson New York: Jerome Levy Economics Institute.

Gnos, Claude and Louis-Philippe Rochon . 2002. "Money creation and the state: a critical assessment of chartalism." *International Journal of Political Economy*, 32(3), 41-57.

International Air Transport Association. IATA Updates COVID-19 Financial Impacts -Relief Measures Needed. Press release, 5 March, 2020. Available at https://www.iata.org/en/pressroom/pr/2020-03-05-01/. Accessed April 23, 2020.

Ilzetzki, Ethan. "COVID-19: The economic policy response," VoxEu, 28 March, 2020. Available at https://voxeu.org/article/covid-19-economic-policy-response. Accessed April 23, 2020.

Innes, Alfred Mitchel. 1913. "What is money?" *Banking Law Journal*. May: 377-408.

Innes, Alfred Mitchel. 1914. "The credit theory of money." *Banking Law Journal,* January: 151-68.

International Monetary Fund. Opening Remarks at a Press Briefing by Kristalina Georgieva following a Conference Call of the International Monetary and Financial Committee (IMFC), 27 March 2020.

Available at https://www.imf.org/en/News/Articles/2020/03/27/sp032720-opening-remarks-at-press- briefing-following-imfc-conference-call. Accessed April 23, 2020.

International Monetary Fund. Confronting the Crisis: Priorities for the Global Economy by Kristalina Georgieva, IMF Managing Director, April 9, 2020. Available at https://www.imf.org/en/News/Articles/2020/04/07/sp040920-SMs2020-Curtain-Raise. Accessed April 23, 2020.

Jeanne, Olivier. 2012. "Monetary dominance and government default." *Financial Stability Review*, *16*, 143-150.

Kelton, Stephanie. 2015. "2. The failure of austerity: rethinking fiscal policy." *The Political* Quarterly, 86: 28-4

Kentikelenis, Alexander., Karanikolos, Marina, Papanicolas, Irene, Basu, S., McKee, M., & Stuckler,

D. 2011. "Health effects of financial crisis: omens of a Greek tragedy." *The Lancet*, 378(9801), 1457- 1458.

Keoun, B. (2020) After Coronavirus 'War,' Bretton Woods-Style Shakeup Could Dethrone the Dollar, Coindesk, 27 March, https://www.coindesk.com/after-coronavirus-war-bretton-woods-style-shakeup- could-dethrone-the-dollar. Accessed April 23, 2020.

Keynes, John Maynard. 1930. *A Treatise on Money*. London: Macmillan.

Keynes, John Maynard. 1936. *The general theory of interest, employment and money*. London: Macmillan.

Knapp, Georg Friedrich. 1924. *The State Theory of Money*. New York: Augustus M. Kelley (1973) Koo, Richard. 2011. The holy grail of macroeconomics: Lessons from Japan's great recession.

Singapore: John Wiley & Sons.

Kregel, Jan. 1973. *Reconstruction of Political Economy: An Introduction to Post-Keynesian Economics*. London: Palgrave.

Kydland, Finn E., and Edward C. Prescott. 1982. "Time to build and aggregate fluctuations." Econometrica: Journal of the Econometric Society: 1345-1370.

Lambrechts, Marc. Jean Tirole: "Il faut préparer le retour au travail", L'Echo, 27 March, https://www.lecho.be/dossiers/coronavirus/jean-tirole-il-faut-preparer-le-retour-au- travail/10217231.html. Accessed April 23, 2020.

Lavoie, Marc. 2013. "The monetary and fiscal nexus of neo-chartalism: a friendly critique." *Journal of Economic Issues,* 47(1), 1-32.

Lawson, Tony. 2003. *Reorienting economics*. London: Routledge.

Leberecht, Tim. 2020. "The Coronavirus Crisis Is a Test of Our Humanity, Will we pass it?". 4 March 2020. Available at https://www.psychologytoday.com/us/blog/the-romance-work/202003/the- coronavirus-crisis-is-test-our-humanity. Accessed April 23, 2020.

Lerner, Alfred.1943. "Functional Finance and the Federal Debt." *Social Research* 10: 38–51

Lerner, Alfred. 1947. "Money as a Creature of the State." *American Economic Review* 37(2): 312–17. Libra. 2020. Available at https://libra.org/en-US/. Accessed April 23, 2020.

Long Jr, John B., and Charles I. Plosser. "Real business cycles." *Journal of political Economy* 91.1 (1983): 39-69

Lucas, Robert. "In Defence of the Dismal Science," The Economist, August 6, 2009. Available at http://www.economist.com/node/14165405. Accessed April 23, 2020.

McCormick, John. "Four ways that coronavirus has changed capital markets." *Financial Times*, 30 March 2020, https://www.ft.com/content/4d2711c9-c373-4038-a2cd-

b0fd41a9bcc1?segmentId=114a04fe-353d-37db-f705-204c9a0a157b. Accessed April 23, 2020.

Minsky, Hyman. 1986. *Stabilizing an Unstable Economy*. New Haven and London: Yale University Press

Minsky, Hyman. 1992. "Reconstituting the United States' Financial Structure: Some Fundamental Issues." Levy Institute Working Paper No. 69. Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.

Minsky, Hyman. 1996. "Uncertainty and the Institutional Structure of Capitalist Economies." *Journal of Economic Issues* 30(2): 357–68.

Minter, Adam. In the Informal Economy, There's No Shelter From the Virus,, Bloomberg, 3 April, 2020. Available at https://www.bloomberg.com/opinion/articles/2020-04-03/in-the-informal- economy-there-s-no-shelter-from-the-virus. Accessed April 23, 2020.

Mirowski, Philip. 2014. *Never Let a Serious Crisis Go to Waste: How Neoliberalism Survived*. London/New York:Verso.

Mishkin, Frederic. 2000. What should central banks do? *Federal Reserve Bank of St. Louis Review*, v. 82, n. 6, p. 1-13

Misir, Timothy L. 2011. "The struggle against neoliberal austerity and the survival of the European project." Working Paper no. 4, EU Centre in Singapore, November.

Moore, Michael E. and J. Sward. 2006. *Introduction to the game industry*. Upper Saddle River, NJ: Pearson Prentice Hall.

Moore, Basil. 1988. *Horizontalists and verticalists: the macroeconomics of credit money*. Cambridge, UK: Cambridge University Press

Mosler, Warren. 1994. *Soft currency Economics*. West Palm Beach. Available at http://moslereconomics.com/mandatory-readings/soft-currency-economics. Accessed April 23, 2020.

Nikiforos, Michalis. 2020. When Two Minskyan Processes Meet a Large Shock: The Economic Implications of the Pandemic. Levy Economics Institute.

New York Times. 1971. Nixon Reportedly Says He Is Now a Keynesian. 7 January. Available at https://www.nytimes.com/1971/01/07/archives/nixon-reportedly-says-he-is-now-a-keynesian.htm. Accessed April 23, 2020.

Pennetier, Marine and John Irish. Amid criticism, Macron vows to raise medical gear output to tackle coronavirus, World News. Reuters. 31 March, 2020. Available at https://www.reuters.com/article/us- health-coronavirus-france-masks/amid-criticism-macron-vows-to-raise-medical-gear-output-to-tackle- coronavirus-idUSKBN21I1PU. Accessed April 23, 2020.

Piégay, Pierre and Ludovic Desmedt. 2007. “Monnaie, État et Production: apports et limites de l'approche néo-chartaliste ." *Cahiers d'économie politique/Papers in Political Economy*, (1), 115-133.

Pilkington, Marc. 2011. “Real Business Cycle in modern dictionaries.” *Crises and Cycles in Economic Dictionaries and Encyclopedias*, edited by Daniele Besomi, London and New York: Routledge, 501- 525

Pilkington, Marc. 2013. *The global financial crisis and the new monetary consensus*. chapter 8, Routledge: London

Pilkington, Marc. 2016. “Well-being, happiness and the structural crisis of neoliberalism: an interdisciplinary analysis through the lenses of emotions.” *Mind & Society*. 15(2), 265-280.

Pilkington, Marc. 2017. “Can Global Elites Pave the Way for a New Transnational Unit of Account? A Reflection on the Numerical Nature of Money.” *World Review of Political Economy*, 8(4), 542-563.

Pilkington, Marc. 2020. Is the New Monetary Consensus still alive? A critical economic and philosophical appraisal. Revue de philosophie économique/Review of Economic Philosophy, 21(2), 7-49.

Pollitt, Hector. “Coronavirus: how to model the economic impacts of a pandemic, Cambridge Econometrics,” blogpost 10 March, 2020. Available at https://www.camecon.com/blog/coronavirus- how-to-model-the-economic-impacts-of-a-pandemic/. Accessed April 23, 2020.

Qiu, Linda. “Analyzing the Patterns in Trump’s Falsehoods About Coronavirus,” New York Times 27 March, 2020. Available at https://www.nytimes.com/2020/03/27/us/politics/trump-coronavirus- factcheck.htm. Accessed April 23, 2020.

The Real News Network (2019) Modern Monetary Theory - A Debate Between Randall Wray and Gerald Epstein, 22 April, https://therealnews.com/series/modern-monetary-theory-a-debate-between- randall-wray-and-gerald-epstein Accessed April 23, 2020.

Reinhard, C.M. This Time Truly Is Different, Project Syndicate, 23 March, 2020. Available at https://www.project-syndicate.org/commentary/covid19-crisis-has-no-economic-precedent-by- carmen-reinhart-2020-03. Accessed April 23, 2020.

Rochon, Louis-Philippe and Matthias Vernengo. 2003. State money and the real world: or chartalism and its discontents.” *Journal of Post Keynesian Economics*, *26*(1), 57-67.

Rogers, S. 2010. “Inflation Targeting at 20: Achievements and challenges,” In D. Cobham, Ø. Eitrheim, S. Gerlach and J. Qvigstad, eds., (2010) Twenty Years of Inflation Targeting: Lessons Learned and Future Prospects, Cambridge: Cambridge University Press

Roubini, Nouriel. 2020. “A Greater Depression?” Project Syndicate. 24 November, https://www.project-syndicate.org/commentary/coronavirus-greater-great-depression-by-nouriel- roubini-2020-03. Accessed April 23, 2020.

Schmitt, Bernard. 1984. *Inflation, chomage et malformations du capital, Albeuve and Paris*. Castella and Economica

Solow, Robert. 2010. "Building a Science of Economics for the Real World." House Committee on Science and Technology, July 20

Stoler, M. (2020) Is Private Equity Having Its Minsky Moment?, 16 April, https://mattstoller.substack.com/p/is-private-equity-having-its-minsky

Strupczewski, Jan and Gabriella Baczynska. “EU ministers agree half a trillion euro coronavirus rescue plan, Reuters,” 9 April, 2020. Available at https://uk.reuters.com/article/uk-health-coronavirus- eu-economy/eu-ministers-agree-half-a-trillion-euro-coronavirus-rescue-plan-idUKKCN21R14J. Accessed April 23, 2020.

Tabb, William. 1997. “Globalization is an issue, the power of capital is the issue.” *Monthly Review*. 49(2), 20-31.

The Economist. “Is China Winning?”,16 April. 2020. Available at https://www.economist.com/printedition/2020-04-18. Accessed April 23, 2020.

Trump, Donald. 2020. Tweet, 27 March, 2020. Available at https://twitter.com/realDonaldTrump/status/1243559373395410957.

Tymoigne, Eric and Randall Wray. 2013. “Modern Money Theory 101: A Reply to Critics.” Levy Economics Institute of Bard College.

Tymoigne, Eric and Randall Wray. 2015. “Modern Money Theory: A Reply to Palley.” *Review of Political Economy*, 27(1): 24-44.

UNCTAD. ‘The Covid-19 Shock to Developing Countries: Towards a “whatever it takes” programme for the two-thirds of the world’s population being left behind,’ 30 March, 2020. Available at https://unctad.org/en/PublicationsLibrary/gds_tdr2019_covid2_en.pdf?user=1653. Accessed April 23, 2020.

UNCTAD (2021) Global foreign direct investment fell by 42% in 2020, outlook remains weak, 24 January, Available at https://unctad.org/news/global-foreign-direct-investment-fell-42-2020-outlook-remains-weak, Accessed February 13, 2021.

United Nations. UN launches COVID-19 plan that could ‘defeat the virus and build a better world’, 31 March, 2020. Available at https://news.un.org/en/story/2020/03/1060702. Accessed April 23, 2020.

UNWTO. International tourist arrivals could fall by 20-30% in 2020, 26 March, 2020. Available at https://www.unwto.org/news/international-tourism-arrivals-could-fall-in-2020. Accessed April 23, 2020.

Wheatley, J (2021) Emerging markets attract $17bn of inflows in first three weeks of 2021, Financial Times, 22 January, Available at https://www.ft.com/content/f9b94ac9-1df1-4d89-b129-5b30ff98e715, Accessed 13 February 2021

White House. Remarks by President Trump and Prime Minister Varadkar of Ireland Before Bilateral Meeting, 12 March, 2020. Available at https://www.whitehouse.gov/briefings-statements/remarks- president-trump-prime-minister-varadkar-ireland-bilateral-meeting-3/. Accessed April 23, 2020.

Wintermeyer, Lawrence. COVID-19 Economic Stimulus: Get Money To People Faster With Digital Dollars, Forbes, 30 March, 2020. Available at https://www.forbes.com/sites/lawrencewintermeyer/2020/03/30/covid-19-economic-stimulus-get- money-to-people-faster-with-digital-dollars/#5bf08e8231fc. Accessed April 23, 2020.

World Health Organization. WHO Director-General's opening remarks at the media briefing on COVID-19. 11 March 2020. Available at https://www.who.int/dg/speeches/detail/who-director- general-s-opening-remarks-at-the-media-briefing-on-covid-19 11-march-2020. Accessed April 23, 2020.

World Tourism Organization (2021) 2020: Worst Year in Tourism History with 1 Billion fewer International Arrivals, Available at https://www.unwto.org/news/2020-worst-year-in-tourism-history-with-1-billion-fewer-international-arrivals, Accessed February 13, 2021.

World Trade Organization. WTO Annual Trade Statistics and Outlook Report, 8 April, 2020. Available at https://www.youtube.com/watch?v=14MLdSPrj2w. Accessed April 23, 2020.

Wray, Randall. 1998. *Understanding Modern Money: the key to full employment and price stability*. Cheltenham, UK: Edward Elgar.

Wray, Randall. 2012. *Modern Money Theory; A Primer on Macroeconomics for Sovereign Monetary Systems*. New York: Palgrave MacMillan.

Wray, Randall. 2015. Modern Money Theory: A Primer on Macroeconomics for Sovereign Monetary Systems. New York: Springer, 2 ed

Wray, Randall. 2019."Alternative paths to modern money theory." Real-world economics review, (89): 5-22

Author contact: Marc.Pilkington@u-bourgogne.fr

SUGGESTED CITATION:
Marc Pilkington, "A Heterodox Commentary on the New Coronavirus Economy", *real-world economics review*, issue no. 110, March 2025, pp. 67–85, http://www.paecon.net/PAEReview/issue110/Pilkington110.

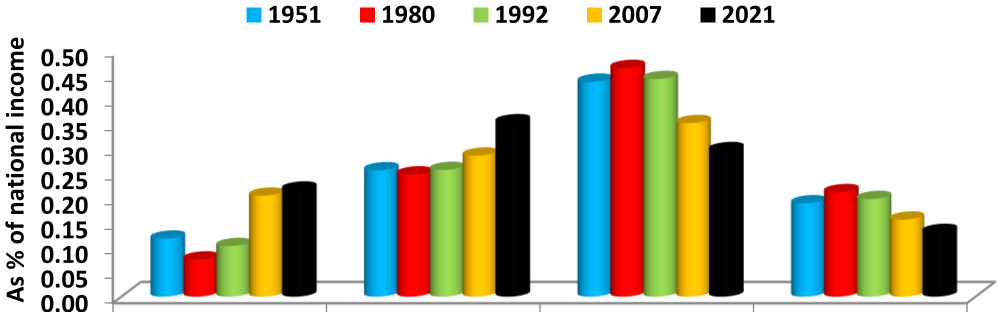
You may post and read comments on this paper at https://rwer.wordpress.com/comments-on-rwer-issue-110/.

Ahmad Seyf
[New College of the Humanities, Northeastern University, London]

The following note will examine the situation of income distribution in India. The focus of this analysis is on the contemporary Indian economy, and thus the historical context is not a primary concern. It is important to note that in 1947, by an act of the British Parliament, the country's colonies in Asia, on the Indian subcontinent, were divided into two countries: India and Pakistan. Pakistan was predominantly Muslim and comprised two parts: eastern and western. The eastern portion of Pakistan subsequently became the independent nation of Bangladesh. From the time of independence until 1991, the Indian government pursued an interventionist economic policy. However, in that year, a serious balance of payments crisis prompted a shift in the government's approach, leading to a reduction in the extent of state intervention in the economy. In 1995, India became a member of the World Trade Organization (WTO). The available evidence indicates that India has experienced one of the highest growth rates in the global economy over the past three decades, with an average annual growth of 5.8%. This equates to a more than sixfold increase in the size of the Indian economy between 1990 and 2021. While this is a notable accomplishment, this paper aims to examine the distribution of benefits from this growth.

The number of workers in the industrial sector is 522 million, representing the second largest workforce in the world after China. In terms of the value share of output, the three sectors of the economy are approximately 56% in services, 26% in industry and 18% in agriculture. In light of the substantial expansion of the Indian economy, it is pertinent to examine the evolution of income distribution over this period. To initiate the discussion, it is first necessary to draw attention to Figure 1, which provides a summary of income distribution in India for five different dates.

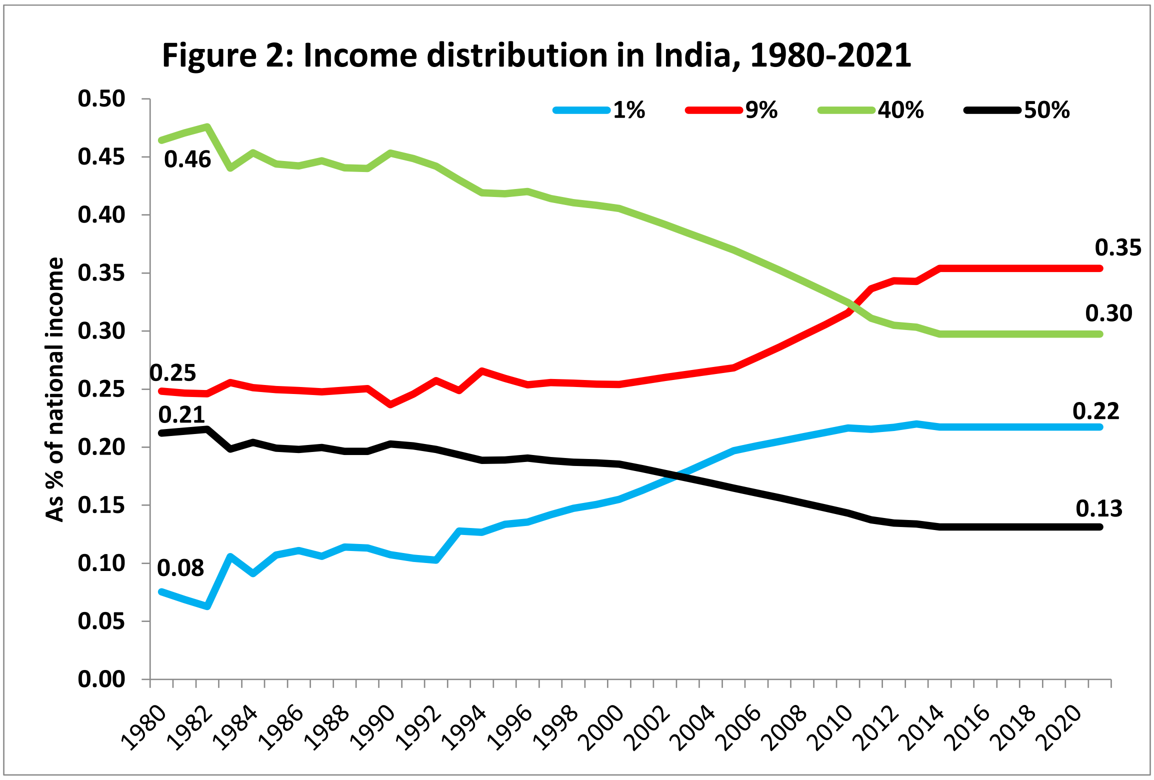
Figure 1: Distribution of Income in India, 1951-2021



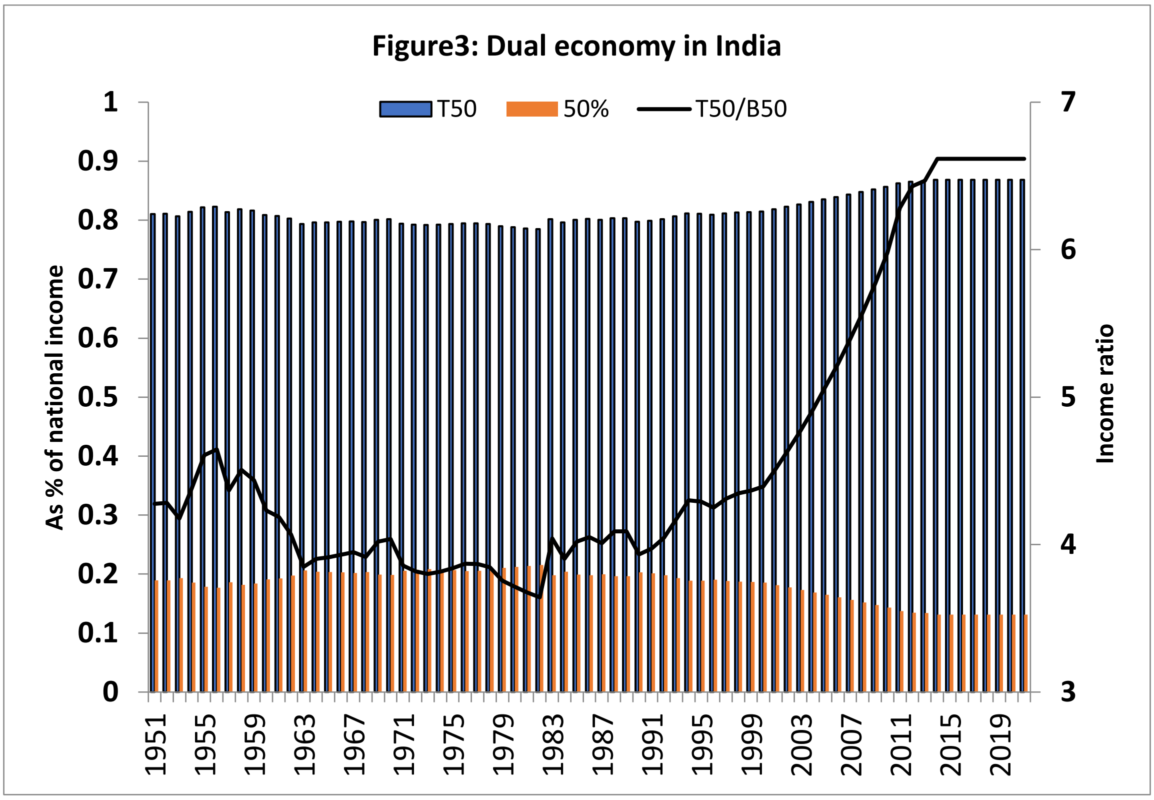
	1%	9%	40%	50%
1951	0.12	0.26	0.44	0.19
1980	0.08	0.25	0.46	0.21
1992	0.10	0.26	0.44	0.20
2007	0.21	0.29	0.35	0.16
2021	0.22	0.35	0.30	0.13

It doesn't make much difference whether we compare the situation in 2021 with 1992 or even with 1951. In any case, it is interesting to note that the changes in income distribution between 1951 and 1992 are insignificant and that the biggest change has been in the share of the top 1 per cent. It seems that from 1992, a proxy date for the new economic policies in India, a much more substantial change in income distribution has taken place. It can be seen that the share of the top one per cent in national income has doubled over this period, from 10 per cent in 1992 to 22 per cent in 2021. The next 9 per cent of the richest also increased their share of national income from 26 per cent to 35 per cent, but the share of the middle 40 per cent and the bottom 50 per cent fell significantly. If we look at these two groups together, i.e. the 90 per cent of the population, it is clear that their share, which was 64 per cent of national income in 1992, has fallen by 21 per cent to 43 per cent in 2021. There are other points that emerge from this statistic. The first point is that by 2021 the share of the richest top 10 per cent of national income will exceed the share of 90 per cent of the population, 57 per cent versus 43 per cent. If we look at these two segments of the population, in 1992 the share of the top 10 per cent was 36 per cent of the national income and the share of the bottom 90 per cent was 64 per cent, but in 2021 the situation was such that the share of the top 10 per cent increased to 57 per cent of national income and the 90 per cent decreased by 21 per cent to 43 per cent.

A more detailed examination of the available statistical data reveals that although the process of widening inequality has accelerated since the 1990s, it appears to have commenced in the early 1980s. The evidence indicates that between 1951 and 1981, the proportion of national income allocated to the poorest 50% and even the middle 40% increased. However, a downward trajectory was observed from 1981 onwards, persisting until 2021. It is evident that as the proportion of national income received by the poorest 50% and the middle 40% has decreased, the proportion received by the top 1% and the 9% has increased. The aforementioned results are illustrated in Figure 2.

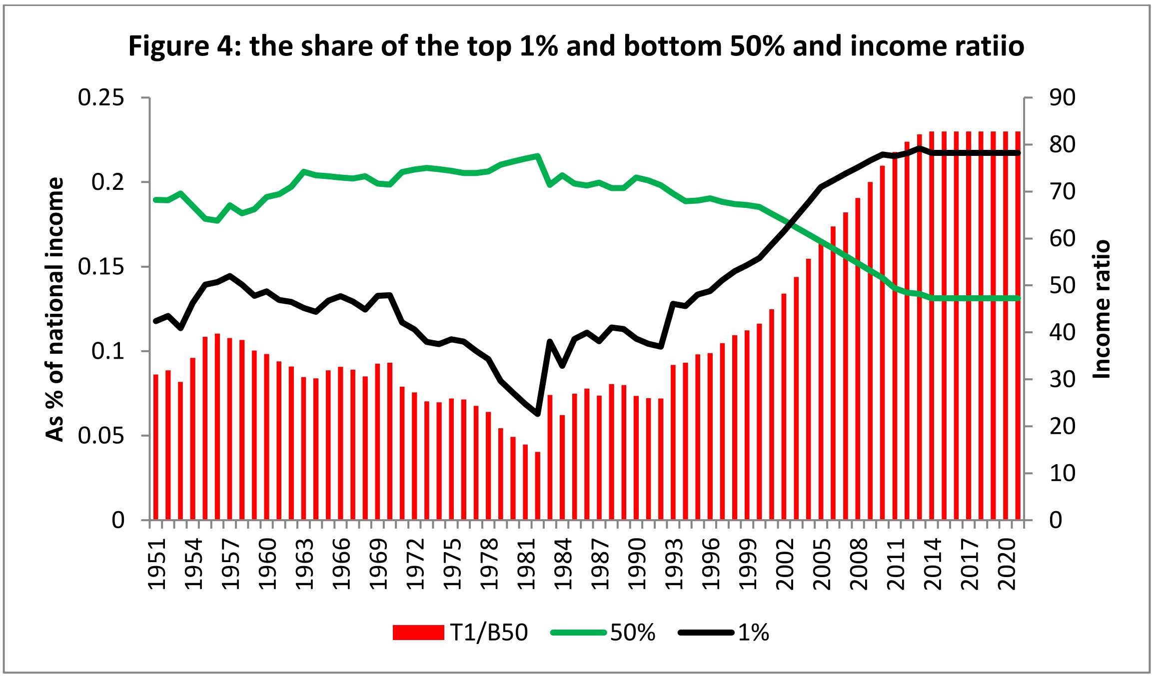


The data presented here demonstrate clear shifts in the distribution of income in India. The top 1% and 9% of income earners enjoyed a significantly larger share of the national economy in 2021 than they did in 1980 or even in 1992. In the case of the top 1%, their share increased by 14% over the period, with the majority of this increase, approximately 12%, occurring between 1992 and 2021. The proportion of income accruing to the top 9% of earners remained static between 1980 and 1991. However, by 2021, this figure has increased by 10% of national income. In broad terms, the distribution of income between the top 10% and the bottom 90% in 1980 was approximately 1/3 and 2/3, respectively. However, by 2021, this distribution had undergone a significant reversal, with 57% concentrated in the top 10% and the remaining 43% distributed among the bottom 90% of the population. We will proceed to examine the comparative position of each income group. However, before doing so, it is first necessary to consider how the two halves of India compare. In theory, if India were to be divided into two equal halves, the top 50% and the bottom 50%, it would be ideal to expect that they would each have an equal share of national income. In India, as in other capitalist economies, the top 50% of the population enjoys a significantly larger share of national income. Between 1951 and 2021, the share of the top 50% of income earners in India ranged from 78 to 87% of the total national income, while the share of the bottom 50% of income earners ranged from 13 to 22%. Furthermore, this distribution pattern was employed to calculate the income ratio, defined as how much richer the top 50% were compared to the bottom 50%. Between 1951 and 2000, with the exception of one year, the top 50% were four times richer than the bottom 50%, but by 2021 this ratio will rise to seven times.



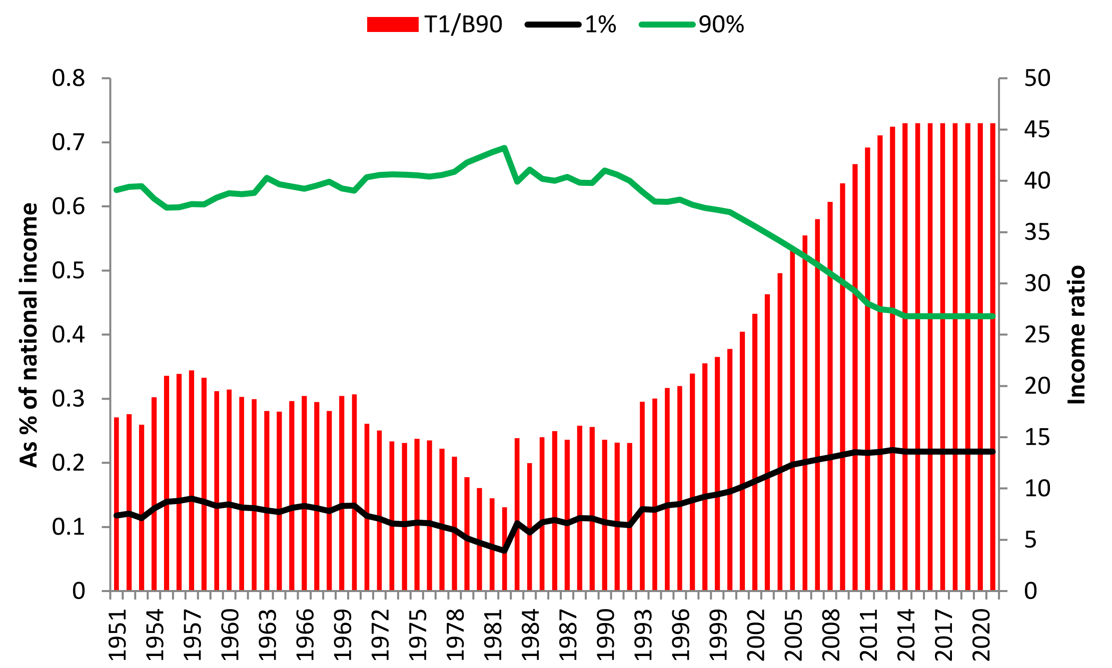
A closer examination of the changes in the share of the top 1% over this period is warranted.

I mentioned earlier that the share of the 1% has doubled over this period, but it is interesting to compare these changes with the changes in the share of the bottom 50% of the population.



It can be observed that the consequences of the change in economic policy in India are reflected in this graph. The black curve illustrates the alteration in the share of the top one percent of national income, which, as can be observed, resembles the letter U in the English alphabet. This suggests that the period in question can be divided into two distinct phases. In the initial period, spanning from 1951 to 1982, the trend exhibited a downward trajectory, followed by an upward shift. Although it has reached a kind of stability in the last two or three years, it demonstrates a significant increase in comparison to the first half. In contrast, the share of the bottom 50% demonstrates a wholly disparate trend. In 1951, the proportion of national income accounted for by this group was approximately 20%. By 2021, this figure had declined to approximately 13%. Although a reduction from 20% to 13% may appear inconsequential, it is notable that the lowest 50% of the population have experienced a loss of approximately one-third of their share of national income. Consequently, the graph in the red column, measured on the right-hand axis, illustrates that this ratio, which was only 15 times in 1982, increased to 83 times in 2014. A similar pattern is evident in the changes observed in the share of the 90%. It may appear redundant, but it is nevertheless evident that despite the considerable differences between these countries, the implementation of neoliberal economic policies has yielded comparable outcomes, resulting in a heightened degree of income inequality across all of them.

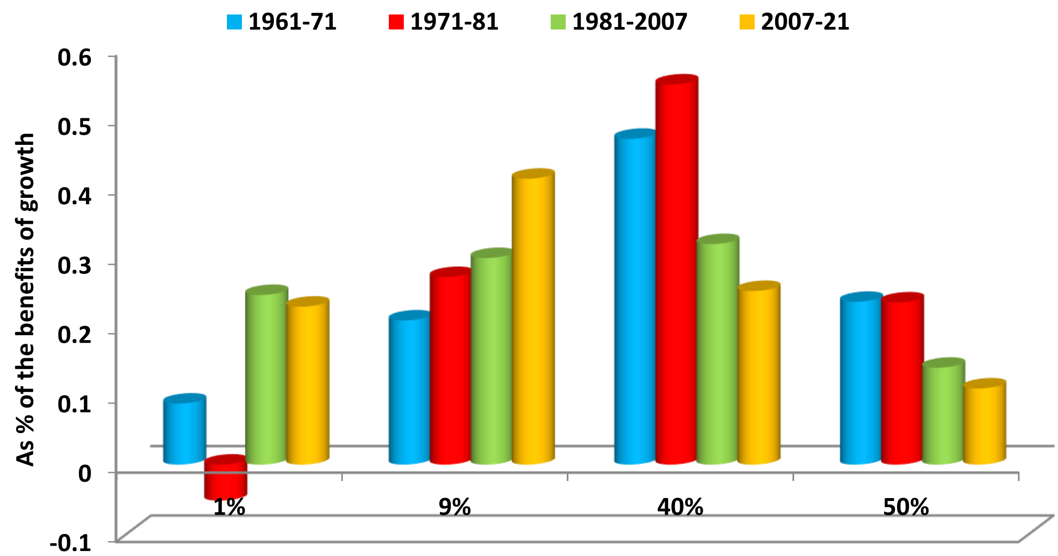
Figure 5: The share of the top 1% and bottom 90% and income ratio



We can see from the above graph that in 1951 the share of the 90% of the national income was more than 60%, and in 1982 it was close to 70% of the national income, that is, it reached 69% of the national income, but in 2021 it fell to around 40%. We have already seen that most of the income transfer went to the top 1% and the rest was shared by the top 9% of the population. As a result of these changes, we also see a significant change in income ratios, up to around 1982 this ratio shows a declining trend, rising from 17 times in 1951 to 22 times and then collapsing to 8 times in 1982, i.e. in 1982 the average income of the top 1% in India was only 8 times higher than the average income of the bottom 90%. This declining trend comes to an end in the 1980s, but more importantly, a sharp rising trend begins in 1992, so that by 2014 this ratio rises to 46 times and remains at that level for the rest of the period considered here.

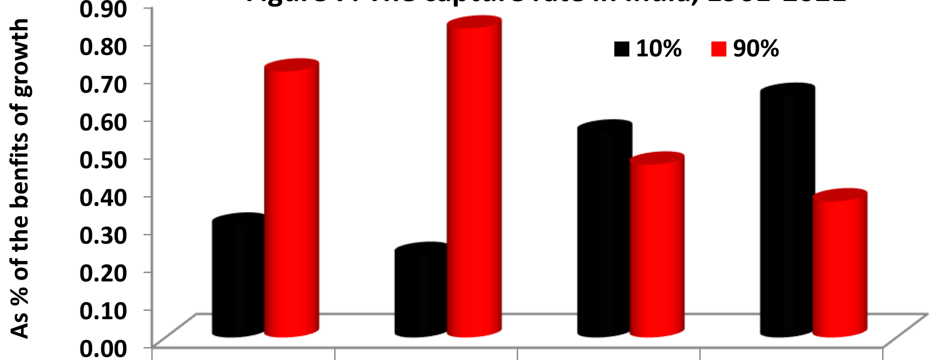
By any measure, the Indian economy has experienced a remarkable period of growth over the past few decades. Over a period of 60 years, from 1960 to 2021, the Indian economy exhibited a growth rate of approximately 22 times, and even in the years following the Great Financial Crisis of 2008, the Indian economy demonstrated a more than doubling in size. As with the other countries under examination, it would appear that economic growth in India has not been universal, with different groups deriving disparate benefits from the gains of economic growth. In order to assess the exclusive nature of economic growth in India, I have divided the last six decades into four separate periods. The initial period spans from 1961 to 1971, the second from 1971 to 1981, the third from 1981 to 2007, and finally, the period subsequent to the global financial crisis. The benefits of economic growth for different groups have been estimated using World Bank statistics, and the results are presented in Chart 6.

Figure 6: The capture rate in India, 1961-2021



The capture rate depicted herein represents a metric for quantifying the extent to which economic growth benefits are distributed among different income groups, specifically the top 1% and the bottom 50%. As illustrated in the above graph, the distribution of the benefits of economic growth in India underwent a notable shift from 1981 onwards, with the top 10% experiencing a marked increase in their share, while the bottom 90% witnessed a decline. In the 1970s, despite an increase in the size of the national economy, the proportion of benefits accruing to the top 1% actually declined. However, in subsequent periods, this group captured more than 20% of the benefits of economic growth. In contrast, the capture rate for the bottom 50% was approximately half that amount. Furthermore, the aforementioned data illustrates a discernible decline in the capture rates for the middle 40% and the bottom 50% of the population, collectively representing 90% of the total population, from 1981 onwards. A more comprehensive perspective on the disparate distribution of income in India can be observed in Figure 7, which compares the capture rate of the top 10% with that of the bottom 90% of the population.

Figure 7: The capture rate in India, 1961-2021

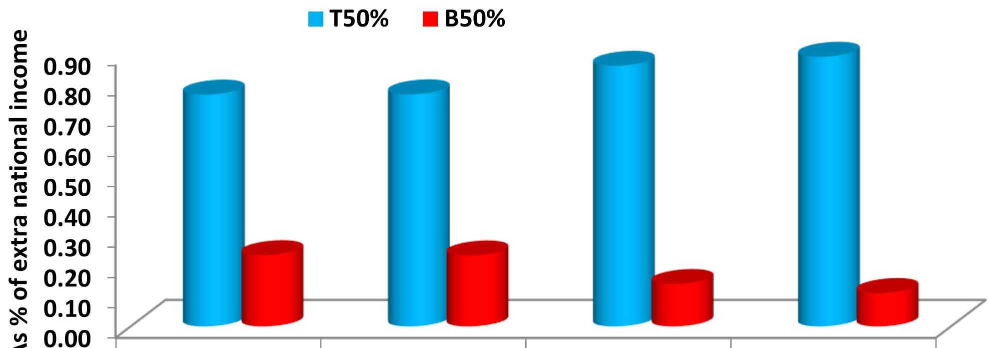


	1961-71	1971-81	1981-2007	2007-21
10%	0.30	0.22	0.54	0.64
90%	0.70	0.82	0.46	0.36

In light of the evidence presented in this study, we believe the conclusion of our research is straightforward. It is beyond question that economic growth is a prerequisite for the happiness of human societies. However, if economic growth is not inclusive, it is inevitable that a small minority will enjoy the benefits of economic growth, while society as a whole will not be happy. It is imperative that policymakers take every measure to guarantee that the advantages of economic growth are distributed equitably among the general population. As evidenced by our study, the absence of appropriate and favourable policies for the well-being of the majority cannot be compensated for by any amount of economic growth.

As is the case in other capitalist economies, the distribution of the benefits of economic growth in India is primarily between the top 10% and the remainder of the population. The top 1% of the top 10% is a particularly noteworthy group. The evidence presented thus far indicates that during the initial and subsequent periods, from 1961 to 1981, approximately $1 to $1.5 of every five dollars generated from economic growth was allocated to the top 10% of the population, while the remaining portion was distributed among the remaining 90% of the population. This distribution pattern is likely the underlying cause of the observed improvement in income distribution, as evidenced by a reduction in income ratios. However, from 1982 to 2007, there was a notable shift in the distribution of the benefits of economic growth, with over 54% allocated to the top 10% and the share of the remaining 90% of the population declining from over 80% in the second period to less than 46% in the third. It is noteworthy that in the years following the global financial crisis, this process persists, with the top 10% of the population capturing an increasing proportion of the benefits of economic growth, reaching a share of 64%. The remaining 36% of the benefits of economic growth are concentrated among the remaining 90% of the population. Those in the lowest 50% of the population within the bottom 90% face significant challenges. As previously proposed, a novel dual economy has emerged in India, as well as in other capitalist economies. The top 50% of the population typically captures the majority of the benefits of economic growth, leaving a significantly smaller share for the remaining half. The situation in India is as problematic as, if not more so than, that observed in other economies. Figure 8 provides a summary of this finding.

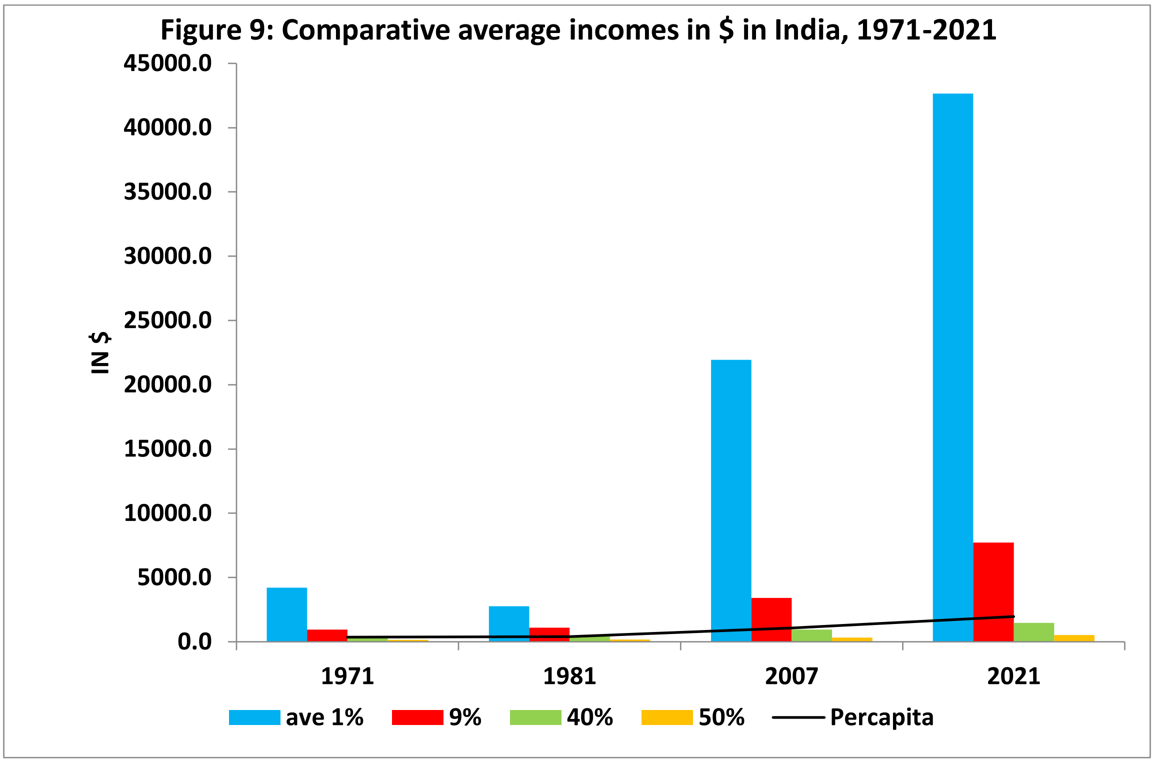
Figure 8: The capture rate in India, 1961-2021



	1961-71	1971-81	1981-2007	2007-21
T50%	0.77	0.77	0.86	0.89
B50%	0.23	0.23	0.14	0.11

As can be observed, even during the period of interventionist state in India prior to 1991, four out of every five dollars of additional income generated by economic growth was captured by the top 50% of the population, while the bottom half of the population received only one dollar. From 1981 to 2021, there has been a further shift in the distribution of income in favour of the wealthy. Over the past four decades, the share of the bottom 50% of the population has declined to one dollar out of every ten dollars of the benefits of economic growth, representing approximately half of the share observed between 1961 and 1981. It is noteworthy that between 1981 and 2021, a greater proportion of the benefits of economic growth accrued to the top one percent of India's population than to the poorest 50 percent. Indeed, this disparity, which was initially $44 billion in favour of the bottom 50 per cent, shifted to $62 billion in 2007 and subsequently increased to over $237 billion in favour of the top 1 per cent by 2021. This represents a nearly fourfold rise since the global financial crisis of 2007-08.

In order to illustrate the growth of inequality in India, we have estimated the average income of each percentage group on four different dates and then compared these average incomes with India's per capita income in the same year.



It is striking that the income gap between the average income of the top 1% and India's per capita income has increased more than tenfold. Throughout this period, the average income of India's poorest 50% has consistently remained below the country's per capita income. In 1971, it was half of the per capita income for that year, and by 2021, it had declined to 30% of the per capita income. Similarly, the average income of the middle 40% also underwent a significant transformation. In other words, whereas prior to 1981 the mean income of the middle 40% was approximately equal to and marginally above India's per capita income, from 2007 onwards this group's mean income was also below India's per capita income. In other words, an examination of the statistics for 2007 and 2021 reveals that the average income of 90% of India's population was below the country's per capita income in those years. It is important to note that India's per capita income is not as high as that of many other countries due to its large population size. With 90% of the population living below this relatively low per capita income; it is evident that despite the country's economic growth over the past four decades, poverty remains a significant issue that requires attention from policymakers.

To exemplify the discrepancy in income levels, the ratio of each group's average income to India's per capita income has been calculated and is presented in Figure 10.

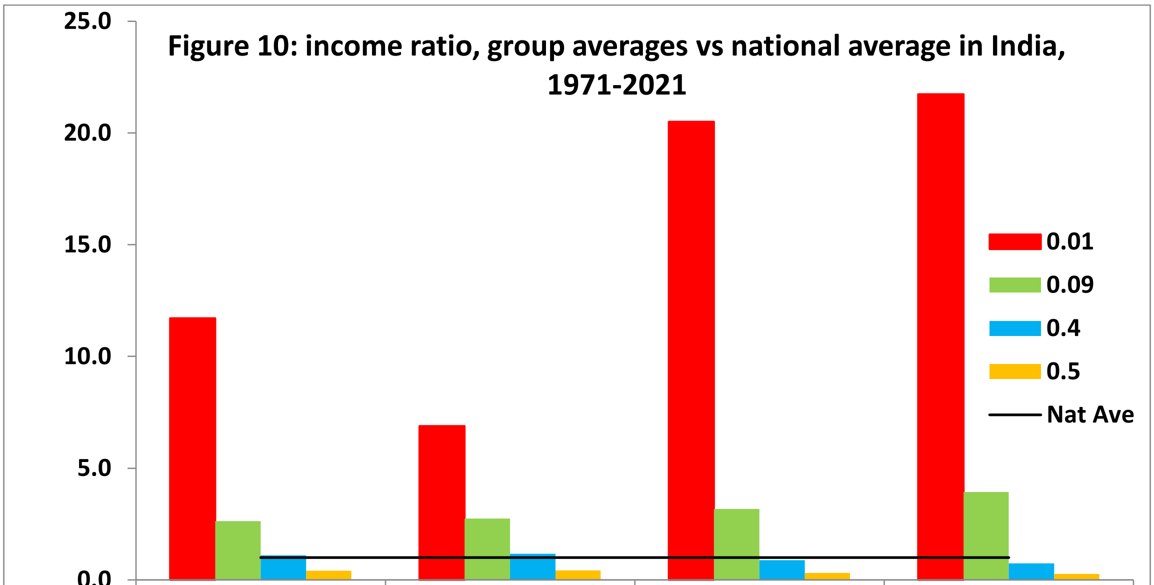


Figure 10: income ratio, group averages vs national average in India, 1971-2021

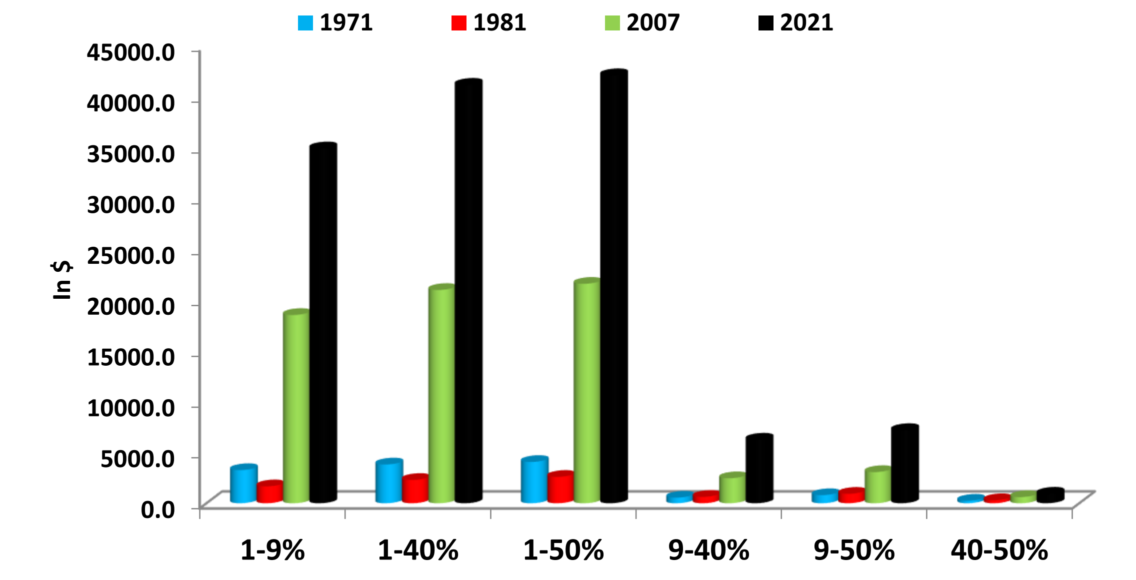
	1971	1981	2007	2021
0.01	11.7	6.9	20.5	21.7
0.09	2.6	2.7	3.2	3.9
0.4	1.1	1.2	0.9	0.7
0.5	0.4	0.4	0.3	0.3
Nat Ave	1.0	1.0	1.0	1.0

In 2007, the average income of the top one percent was more than 20 times India's per capita income for that year. By 2021, this ratio increased slightly to 22 times. A comparison of the average income of the 9% with per capita income reveals a similar trend, albeit on a much smaller scale. In other words, in 2007 the average income of the 9% was more than three times India's per capita income, and by 2021 this ratio will be approximately four times. As previously stated, from 2007 onward, the mean income of the 90% of the population in India is below the country's per capita income. In India, as in other capitalist economies, the exceptional situation of the top one per cent represents a significant economic challenge, but it is only one aspect of a much broader and complex problem. In this context, we have sought to quantify the income disparity between all demographic groups. This entailed estimating the mean income of each group and examining the potential evolution of these averages over time. A cause for concern is the widening of the income gap between all groups. As in other capitalist countries, the discrepancy between the mean incomes of the top 1% and other socioeconomic groups is considerably more pronounced. However, the divergence between the middle 40% and the bottom 50% has also increased. The subsequent chart illustrates these disparities. Six income gaps have been measured.

- The income gap between the top 1% and the next 9% is 1-9%.
- The income gap between the top 1% and the middle 40% is 1-40%.
- The income gap between the top 1% and the bottom 50% is 1-50%.
- The income gap between the top 9% - 91-99%- and the middle 40% is 9-40%.
- The income gap between the top 9% - 91-99%- and the bottom 50% is 9-50%.
- The income gap between the middle 40% and the bottom 50% is 9-50%.

Utilising the available data on India's gross domestic product (GDP), it can be estimated that in 1971, the average income of the top 1% was approximately $4,200 per annum, while the average income of the poorest 50% was just under $150 per annum. By 2007, the average income of the top 1% had increased fivefold to $21,930, while the average income of the poorest 50% had risen by more than twofold to $335. Ultimately, by 2021, the average income of the top 1% will have nearly doubled once more, reaching $42,641 per year, while the average income of the poorest 50% will have less than doubled, at $515 per year. It is noteworthy that, according to the World Bank, India's economy is projected to expand approximately 14-fold between 1971 and 2021. Over the course of this period, the average income of the top 1% increased by more than tenfold, while the average income of the poorest 50% grew by only threefold. Thus, an examination of the income disparity between the top 1% and the poorest 50% reveals that in 1971, this gap was approximately $4,060. By 2021, the discrepancy between the mean income of the top 1% and that of the poorest 50% had reached a figure in excess of $42,126. In other words, the income gap increased by more than tenfold over this period of time.

Figure 11: Income gap in India, 1971-2021



In light of the evidence presented in this study, we believe the conclusion of our research is straightforward. It is beyond question that economic growth is a prerequisite for the happiness of human societies. However, if economic growth is not inclusive, it is inevitable that a small minority will enjoy the benefits of economic growth, while society as a whole will not be happy. It is imperative that policymakers prioritise the distribution of economic growth benefits across the entire population. Our study demonstrates that economic growth alone cannot offset the consequences of inadequate policies for the well-being of the majority.

Author contact: i.seyf@hotmail.co.uk

SUGGESTED CITATION:
Ahmad Seyf, "India: non-inclusive economic growth and a plague of rising inequality", *real-world economics review*, issue no. 110, March 2025, pp. 86–97, http://www.paecon.net/PAEReview/issue110/Seyf110.

You may post and read comments on this paper at https://rwer.wordpress.com/comments-on-rwer-issue-110/.

real-world economics review, issue no. 110
subscribe for free

Fostering Critical Inquiry: Radical Pedagogies in Teaching the Economics of the COVID-19 Pandemic

Ceyhun Elgin
[Bogazici University, Turkey]

Abstract
This paper is a reflective case study on the pedagogical approaches and teaching practices applied in an elective course "Economics of the Covid-19 Pandemic" taught during the Fall 2023 semester at the American University in Bulgaria. It explores how various pedagogies, such as active learning, collaborative learning, and web-based interactive exercises, were seamlessly integrated into the course structure to cultivate critical thinking and a profound understanding of the economic policy issues arising from the pandemic. Additionally, the paper discusses the challenges and opportunities presented by the university constraints, and the impacts of academia's increasing precarization on pedagogy.

Keywords: Covid-19; economic policy; education economics; teaching economics

1. Introduction

Pedagogy serves as a cornerstone in shaping students' comprehension of economic issues, especially within the realm of radical political economics. This paper aims to provide a comprehensive exploration of the pedagogical practices employed in the course "Economics of the Covid-19 Pandemic" and how they align with the Anti-Capitalist Pedagogies and Teaching Radical Economics.

The course presented here was offered in Fall 2023 for third and fourth year advanced undergraduate students (not necessarily economics majors), centered on contemporary policy issues stemming from the Covid-19 pandemic. Due in part to the personal circumstances of the instructor the course was largely taught in a hybrid teaching mode with several in-person classes at the campus (which students could still attend online) and entirely online sessions on Zoom. Topics covered in the course included policy responses to the pandemic, labor market issues, macro/financial effects, public health aspects, and sectoral impacts. The course also embedded an extensive reading list that includes a large number of academic articles from a highly pluralistic perspective, as well as some semi-academic texts in the form of UNDP, ILO, WB and IMF texts. 18 students ultimately registered for the course.

This course's pedagogical approach draws upon several strands of educational theory and practice, particularly those aligned with critical pedagogy and experiential learning in economics education.

The foundation of our approach aligns with the principles of critical pedagogy as articulated by scholars like Freire (1970) and Giroux (2011). Critical pedagogy emphasizes the importance of developing students' critical consciousness and their ability to question dominant narratives, particularly relevant when examining economic policies during a global crisis. As Spotton Visao (2019) argue, critical pedagogy in economics education can help students understand the power relations embedded in economic systems and policies. The course's emphasis on collaborative learning and real-world application is informed by the experiential learning theory developed by Kolb (2014) and its applications in economics education (Hawtrey, 2007). This approach is particularly relevant in teaching about dynamic, real-time events like the COVID-19 pandemic. As Wooten and Lynch (2021) note, experiential learning in economics can bridge the gap between abstract models and real-world complexities.

The integration of technology and web-based exercises in our course builds on the work of Allgood et al. (2015), who emphasize the potential of technology to enhance economics education. Our approach aligns with their suggestion that technology can be used to create more engaging and interactive learning experiences. The service-learning component of our course draws inspiration from the work of McGoldrick (1998), who demonstrate the effectiveness of service-learning in economics education. They argue that service-learning can help students develop a deeper understanding of economic concepts and their real-world applications. Finally, our approach to fostering critical thinking in economics aligns with the framework proposed by Brant (2015), who argues for a more pluralistic approach to economics education that encourages students to question assumptions and consider alternative perspectives.

By synthesizing these various theoretical strands, our course aimed to create a learning environment that not only conveyed economic concepts related to the COVID-19 pandemic but also fostered critical thinking, real-world application, and a deeper understanding of the complexities of economic decision-making in times of crisis. This paper will provide detailed, implementable examples of the teaching strategies used in the 'Economics of the Covid-19 Pandemic' course. Each strategy will be accompanied by specific instructions, assessment goals, and reflections on implementation challenges to aid educators in adapting these methods for their own classrooms.

2. Adopted Strategies

To elevate student engagement and critical thinking, an array of pedagogical strategies were embedded into the course structure.

2.1. Active Learning and Collaborative Learning:

A significant and enriching component of the course was the dedicated emphasis on in-depth in-class discussions, purposeful activities, and collaborative projects, fostering an environment where students actively engaged with the material. The "Policy Responses during the Pandemic" module emerged as a focal point, where students were seamlessly organized into small groups.

For example, in one collaborative activity, students were divided into groups of 3-4 and assigned different countries (e.g., South Korea, New Zealand, Sweden, Brazil). Each group researched their country's key policy responses to COVID-19, focusing on economic measures like stimulus packages, unemployment benefits, and business support. Groups then presented their findings to the class, followed by a structured debate comparing the effectiveness and trade-offs of different approaches. This exercise allowed students to apply economic concepts to real-world scenarios while developing critical analysis and presentation skills.

For this exercise, instructions provided to students were as follows:

1. Research your assigned country's economic policy responses to COVID-19 from March 2020 to present.
2. Focus on three main areas: fiscal policy (e.g., stimulus packages), monetary policy (e.g., interest rate changes), and labor market interventions (e.g., unemployment benefits, job retention schemes).
3. Prepare a 15-minute presentation outlining these policies and their economic impacts.
4. Be prepared to defend your country's approach in a class debate.

Moreover, assessment goals were designed to be as follows:

- Demonstrate understanding of various economic policy tools used during the pandemic
- Develop skills in data collection and analysis from reputable sources
- Enhance ability to critically compare different policy approaches
- Improve presentation and argumentation skills

There were also some challenges in the implementation. For example, some groups initially struggled with finding reliable, up-to-date data. To address this, we provided a curated list of reputable sources including the IMF Policy Tracker, OECD country profiles, and official government websites. Time management during the debate portion was also challenging. In future iterations, we plan to implement a more structured debate format with clearly defined speaking times for each group.

Another key collaborative activity was the COVID-19 Economic Impact Simulation. In this activity, students were divided into teams representing different economic sectors (e.g., healthcare, hospitality, technology, manufacturing). Each team was given a set of economic indicators and policy options. Over three rounds, teams made decisions on resource allocation and policy implementation, then observed the simulated outcomes on their sector and the overall economy. This exercise fostered critical thinking about policy trade-offs, interconnectedness of economic sectors, and the challenges of decision-making under uncertainty. Students reported that this activity significantly enhanced their understanding of the complex economic dynamics during the pandemic.

This strategic grouping aimed not only to analyze but also to present policy responses implemented by different countries in response to the ongoing pandemic. The collaborative approach transcended traditional boundaries, acting as a catalyst for vibrant knowledge exchange within the student cohort. The dynamism of these collaborative projects went beyond the mere transmission of information; it became a platform for the cultivation of diverse perspectives. Drawing inspiration from Liverpool-Tasie et al. (2019) and Yin et al. (2020), the course encouraged students to actively participate in dissecting and comprehending the complexities of policy responses. Drawing inspiration from the above-mentioned paper, the course utilized a blend of interactive discussions, role-playing exercises, and case study analyses. For instance, students were assigned to policy-making roles in a simulated economic crisis scenario, where they had to propose and defend policy measures based on real-time data. This approach encouraged active participation by requiring students to critically evaluate policy responses and anticipate potential outcomes. Moreover, these small-group endeavors served as incubators for the incubation of critical analytical skills. The multi-dimensional discussions and collaborative projects enabled students to navigate the complexities of economic policies, fostering a deeper understanding of the global economic landscape. It was not merely about acquiring information; rather, it was about synthesizing diverse viewpoints, a skill crucial for any aspiring economist navigating the challenges of the real-world economic terrain. Beyond the traditional classroom setup, this collaborative exploration created a dynamic space where students could articulate their perspectives, challenge existing notions, and collectively construct a richer understanding of policy responses. The interactive nature of these sessions transformed passive learners into active participants, setting the stage for a more profound comprehension of the nuanced economic theories underpinning policy decisions. The impact of this collaborative learning approach rippled beyond the confines of the classroom. It not only contributed to the development of critical analytical skills but also nurtured a sense of collective responsibility among students. Engaging with real-world policy responses underscored the relevance of economic theories in addressing contemporary global challenges.

2.2. Web-Based Interactive Exercises:

Recognizing the critical importance of real-time data analysis in the ever-evolving landscape of the COVID-19 pandemic, our course seamlessly incorporated web-based interactive exercises. These exercises served as a conduit for students to navigate the dynamic terrain of economic indicators and pandemic-related datasets. In an era where the pace of information dissemination is rapid, relying solely on traditional teaching methods becomes a limitation. Web-based interactive exercises, however, transcend these constraints. They empower students to explore, analyze, and interpret economic trends as they unfold, fostering a level of engagement that extends beyond the boundaries of a static curriculum. The online platforms utilized in this course were not just tools; they became portals to an expansive realm of economic data and policy simulations. Through these platforms, students were not passive recipients of information; they were active participants in the exploration of economic theories applied to real-world scenarios. This real-time engagement added a layer of relevance to the learning experience. It went beyond the theoretical underpinnings of economic concepts, grounding them in the practical realities of the pandemic. The interactive nature of these exercises encouraged students to synthesize theoretical knowledge with practical insights, fostering a holistic understanding that transcended the confines of traditional instruction.

One specific web-based exercise involved using the Our World in Data COVID-19 tracker. In this exercise, students were tasked with analyzing the relationship between GDP per capita and vaccination rates across countries. They created scatter plots, calculated correlation coefficients, and wrote short reports interpreting the results and discussing potential causal factors. This hands-on data analysis allowed students to engage with real-time global data, apply statistical concepts, and critically evaluate the complex relationships between economic development and public health outcomes.

For this exercise the following instructions provided to students:

1. Access the Our World in Data COVID-19 tracker.
2. Download data on GDP per capita and vaccination rates for all available countries.

3. Use Excel or Google Sheets to create a scatter plot of these two variables.
4. Calculate the correlation coefficient between GDP per capita and vaccination rates.
5. Write a 500-word report interpreting your findings, discussing potential reasons for the observed relationship, and considering limitations of the analysis.

Assessment goals of this exercise were:

- Develop skills in accessing and manipulating real-world economic data
- Apply basic statistical concepts (scatter plots, correlation) to economic analysis
- Enhance critical thinking about the relationship between economic indicators and public health outcomes
- Improve written communication of data analysis results

Similar to the first exercise there were also some challenges in the implementation of this exercise. For example, some students were initially unfamiliar with data manipulation in spreadsheet software. To address this, we provided a brief tutorial session and created a step-by-step guide for basic data analysis tasks. We also encouraged peer support, allowing students with more advanced Excel skills to assist their classmates.

Moreover, to illustrate how web-based exercises empowered students beyond simple internet searches, consider the 'Policy Impact Dashboard' project. Students used tools like Tableau and R Shiny to create interactive visualizations of COVID-19 policy impacts. For instance, one student developed a dashboard comparing the effects of different lockdown strategies on GDP growth and infection rates across countries. This required students to curate data from multiple sources, apply statistical analysis, and create user-friendly interfaces. The process of building these tools deepened students' understanding of the data and encouraged them to think critically about how to present complex economic information effectively. Unlike passive consumption of online information, this exercise positioned students as active creators and analysts of economic knowledge.

In alignment with the works of Damron and Mott (2005), the integration of web-based interactive exercises was not merely a technological augmentation. It was a deliberate strategy to bridge the gap between theory and application. The exercises were not isolated tasks; they were dynamic gateways for students to explore the complex dimensions of economic decision-making and policy implications. Moreover, this approach instilled a sense of adaptability in students – a crucial skill in an era where the economic landscape can transform swiftly. Navigating web-based resources became more than just a technical proficiency; it became a cognitive tool for students to navigate the complexities of real-world economic scenarios. In essence, the integration of these exercises was a conscious effort to equip students with the skills and mindset needed to thrive in a landscape where data-driven decision-making is paramount.

2.3. Service and Experiential Learning:

In a deliberate effort to intertwine theoretical understanding with hands-on experiences, the course incorporated service-learning projects. These projects were not just about assimilating abstract economic concepts but about immersing students in the real-world implications of economic policies, particularly those responding to the challenges posed by the Covid-19 pandemic. The service-learning component was multi-dimensional, challenging students to move beyond the confines of the classroom and engage with the socio-economic realities of local communities. Their mission: to assess the tangible impact of Covid-19 policies, unraveling the complex threads that wove together economic decisions and their repercussions on society. This approach transcended traditional learning boundaries, compelling students to confront the complex interplay between economic theories and the lived experiences of individuals in their communities. At its core, the service-learning initiative was designed to instill a sense of civic responsibility. It wasn't just an academic exercise; it was a call to action, urging students to recognize the role they play as aspiring economists in shaping a socially responsible and equitable economic landscape. This transformative experience sought to cultivate a deeper understanding of the interconnectedness between economic choices and the broader fabric of society. The pedagogical inspiration for such an approach draws from Jacoby's (1996) foundational work on service learning. The author emphasizes that service learning is not merely about doing something for others; it is a reciprocal process where students and the community both benefit. This reciprocal nature aligns seamlessly with the course's philosophy of creating an educational experience that goes beyond the individual, fostering a collaborative dynamic between learners and their communities.

As part of the service learning component, students partnered with local small businesses affected by the pandemic. Each student conducted interviews with business owners, gathered financial data (where possible), and analyzed the impact of various economic policies on these businesses. For instance, one student worked with a local restaurant to assess how government-backed loans and shifting consumer behavior affected their operations. Students then presented their findings to the class and provided recommendations to the businesses, integrating economic theory with practical, community-based experience.

The following project guidelines were given to students in the service learning component:

1. Identify and partner with a local small business affected by the pandemic.
2. Conduct at least two interviews with the business owner or manager.
3. Collect relevant financial data (e.g., monthly revenue, expenses) for the periods before and during the pandemic.
4. Research local and national economic policies that may have affected the business.
5. Analyze the data and interview responses to assess the impact of the pandemic and related policies on the business.
6. Prepare a 5-page report and 15-minute presentation summarizing your findings and providing evidence-based recommendations for the business.

Assessment criteria of this component was as follows:

- Depth and quality of data collection and analysis
- Application of relevant economic concepts to the real-world case
- Critical evaluation of policy impacts
- Quality and feasibility of recommendations
- Professionalism in interactions with community partners

Again, there were some implementation challenges. For instance, some students had difficulty finding businesses willing to share financial data. We addressed this by providing a letter explaining the project's academic nature and confidentiality measures. We also allowed students to use publicly available data or estimates when necessary, with appropriate caveats in their analysis.

As students ventured into the field to assess the socio-economic impact of Covid-19 policies, they weren't just collecting data; they were unraveling narratives, understanding the nuances of how economic decisions resonate in the day-to-day lives of people. The service learning projects, therefore, became a vehicle for experiential learning, challenging students to move beyond theoretical abstractions and engage with the messy, real-world implications of economic policies. In conclusion, the incorporation of service-learning projects was a deliberate move to elevate the course from a theoretical exercise to a transformative journey. It wasn't just about acquiring knowledge; it was about applying that knowledge in ways that contribute to the well-being of local communities. The students weren't passive recipients of information; they were active contributors to societal understanding, embodying the principles of civic responsibility espoused by the course.

3. University Constraints: Pedagogical Adaptations and Innovations

The course design also considered the challenges posed by the modern university context, including the increasing precarization of academia. The use of online platforms for recording lectures and delivering content acknowledged the evolving landscape of higher education, aiming to make educational resources accessible while addressing issues of time constraints and the temporality of recorded content (Huang, 1997; Greenhow, Greham and Koehler, 2022).
The impact of neoliberal policies on academia, with its emphasis on market-driven education, has been a subject of scholarly debate (Connell, 2013). The increasing reliance on precarious academic labor and the shifting dynamics of the educational infrastructure necessitate a reevaluation of pedagogical practices (Gallas, 2018; Bone 2021) In the "Economics of the Covid-19 Pandemic" course, efforts were made to address these challenges by adopting a student-centered approach that recognized the diverse learning needs and circumstances of students. However, I should also emphasize that, while critique of the neoliberal university and its context is important, the primary focus of this paper is to provide practical classroom strategies for teaching the economics of the pandemic. Therefore, the discussion on neoliberalism will be brief, and more emphasis will be placed on detailed lesson plans, specific examples, and implementation challenges.

3.1. Beyond Pedagogy: Adapting to Changing Academic Landscapes

In the modern university context, where market-oriented principles often influence decision-making, it is essential for educators to critically examine how these dynamics impact pedagogy. The commodification of education, coupled with the increased emphasis on measurable outcomes, poses challenges for educators seeking to provide a comprehensive and critical understanding of economic issues. The "Economics of the Covid-19 Pandemic" course consciously grappled with these challenges, adopting pedagogical strategies that aimed to transcend mere skill acquisition, encouraging students to engage critically with the economic issues at hand.

One key aspect of the course's pedagogical design was its student-centered approach. Recognizing the diversity of student backgrounds, learning styles, and accessibility constraints, and the fact that most students were also working part-time or full-time in addition to studying, the course leveraged technology to offer flexibility without compromising educational quality. The recording of lectures and their availability on the cloud server addressed concerns related to remote learning and time constraints, allowing students to revisit materials at their own pace (Huang, 1997; Greenhow, Greham and Koehler, 2022).

Moreover, the course acknowledged the precarity faced by many students and educators in the neoliberal university. The emphasis on service-learning projects, which required students to engage with local communities, not only provided a real-world application of economic theories but also fostered a sense of social responsibility. This student-centered approach aimed to empower students as active participants in their learning journey, moving beyond the traditional model of passive reception of information.

The integration of web-based interactive exercises and online platforms for collaborative projects presented both opportunities and challenges. On one hand, these technologies facilitated dynamic and interactive learning experiences, enabling students to engage with real-world data and scenarios. On the other hand, concerns about the digital divide and unequal access to technology needed to be navigated thoughtfully. The course addressed these challenges by providing alternative options for students with limited access to technology. Additionally, the course design prioritized asynchronous learning components, allowing students to engage with the materials at their convenience. This dual approach aimed to strike a balance between leveraging technology for enhanced learning experiences and ensuring equitable access for all students.

Service-learning projects embedded in the course design aimed to transcend the boundaries of the classroom, fostering a sense of civic responsibility among students. The projects required students to collaborate with local communities, applying economic theories to assess the socio-economic impact of Covid-19 policies. This experiential learning approach not only enriched students' understanding of the real-world implications of economic decisions but also encouraged them to critically evaluate the ethical dimensions of policy choices (Bringle and Hatcher, 1996.) By engaging in service learning, students became active participants in addressing local challenges, aligning with the call for a democratization of the classroom and a broader societal impact (Connell, 2013). This pedagogical approach sought to instil a sense of agency in students, encouraging them to view their education not solely as a means of individual advancement but as a tool for contributing to the well-being of their communities.

The course design was informed by radical pedagogical literature, particularly drawing on the works of Freire (1970, 2020) and Hooks (2014). Freire's concept of 'problem-posing education' influenced the structure of class discussions, where students and instructor collaboratively explored economic issues rather than following a top-down, 'banking' model of education. Hooks' emphasis on engaged pedagogy and the importance of linking theory to practice shaped the service learning component. For instance, when studying unemployment during the pandemic, students not only analyzed statistics but also interviewed local unemployed individuals, connecting macro-level policies to lived experiences. This approach aimed to develop what Hooks calls 'critical awareness and engagement,' encouraging students to question dominant narratives about the economy and consider alternative perspectives.

3.2. Experiential Learning and Critical Analysis:

In addition to service learning, the course incorporated experiential learning components, encouraging students to engage in critical analyses of economic policies and their effects. The emphasis on reading reports based on recent economic papers aimed to keep students abreast of the current state of economic policy and applications. These reports, focused on leading journals and institutions, required students to synthesize complex information, hone their analytical skills, and communicate their findings concisely (Smith, 2023).

Furthermore, the requirement for students to prepare presentations on relevant papers added another layer of experiential learning. This formal exposition not only deepened their understanding of specific economic issues but also developed their ability to communicate complex concepts effectively. The presentation format encouraged collaboration and fostered a collective approach to learning, aligning with the call for collaborative and participatory pedagogies (Damron and Mott, 2005).

3.3. Critical Thinking in Assessments:

The course intentionally incorporated radical economic perspectives alongside mainstream views. For example, when discussing labor market impacts, students read both conventional papers on unemployment insurance effects and critical analyses of worker exploitation during the pandemic. One assignment required students to compare neoclassical and Marxist interpretations of the crisis, encouraging them to question fundamental assumptions about market efficiency and capital-labor relations. By juxtaposing these viewpoints, students were challenged to critically evaluate the strengths and limitations of different economic paradigms in explaining real-world phenomena.

The course assessments were structured to reflect a commitment to nurturing critical thinkers. The absence of a prescribed textbook allowed for a diverse range of readings from leading journals and institutions. This intentional choice aimed to expose students to a plurality of perspectives, encouraging them to critically evaluate and synthesize information from various sources.

The reading reports, requiring students to analyze recent economic papers, served as a bridge between theoretical concepts and their practical applications. The analytical exercises demanded a deeper engagement with the material, prompting students to question assumptions, evaluate methodologies, and articulate their understanding coherently. This emphasis on critical thinking aligns with the broader goal of teaching radical economics and challenging mainstream ideas that may perpetuate oppressive structures (Smith, 2019).

The requirement for students to prepare and deliver presentations further enhanced their critical thinking and communication skills. Each student was responsible for three presentations on papers related to the course material, promoting a thorough understanding of specific topics. The formal exposition format also encouraged students to engage with economic theories deeply, fostering a nuanced comprehension that goes beyond surface-level understanding (Greenhow, Greham and Koehler, 2022).

Collaborative learning was at the forefront during these presentations, as students were expected to work together to prepare and deliver the presentations. This collaborative approach not only encouraged knowledge sharing but also facilitated the development of teamwork and communication skills. By adopting a collaborative learning model, the course embraced a participatory approach that mirrors the ideals of radical pedagogies, breaking away from traditional hierarchical structures in education (Jacoby, 1996)

The grading policies of the course were designed to align with the broader pedagogical goals of fostering equity, encouraging participation, and supporting student growth. The inclusion of class participation as a graded component acknowledged the importance of active engagement in the learning process. Class participation, accounting for 5% of the final grade, aimed to create a supportive and inclusive learning environment. The flexibility in attendance policies recognized the varying circumstances and responsibilities of students, aligning with the call for democratization of the classroom and a student-centered approach (Connell, 2013).

Reading reports, accounting for 20% of the final grade, were structured to provide students with opportunities for self-directed learning. These short reports, based on recent economic papers, required students to delve into specific topics, critically assess research methodologies, and articulate their understanding concisely. The emphasis on individual work for reading reports aimed to balance collaborative learning activities, encouraging students to develop independent research and analytical skills.

The final exam, comprising 30% of the final grade, was designed to assess students' comprehensive understanding of the course material. The comprehensive nature of the exam reflected the interdisciplinary approach of the course and provided students with a platform to synthesize their learning and demonstrate their mastery of key concepts.

Presentations, constituting 45% of the final grade, underscored the importance of collaborative learning and effective communication. Each student's responsibility for three presentations allowed for a comprehensive exploration of different topics related to the course material. The weighting given to presentations acknowledged their significance in fostering a deeper understanding of economic issues and promoting a collective approach to learning.

While equipping students with data-driven decision-making skills aligns with conventional employability, the course also emphasized critical thinking about economic structures. For instance, students engaged in debates on the ethical implications of economic policies and their impact on social inequality. This approach aimed to develop a critical consciousness, encouraging students to question and challenge mainstream economic paradigms, rather than merely preparing them for employment.

The above-described grading framework adopted for this course went beyond mere assessment; it was a testament to the commitment to fairness and fostering individual growth. While maintaining the conventional grading categories, the instructor introduced a level of flexibility that allowed for the adjustment of cut-off points, potentially elevating letter grades based on percentages achieved. This departure from rigidity was intentional; it aimed to create an evaluative space that acknowledged the diverse strengths and learning styles of students. By retaining the option to lower cut-off points, the instructor signaled a commitment to recognizing and rewarding not just final outcomes, but the journey of improvement and growth undertaken by each student. In essence, the grading scale embraced a growth mindset, valuing progress and development over a static, one-size-fits-all approach. This nuanced grading philosophy aligned with the broader call for pedagogical practices that prioritize equity within the neoliberal university context (Smith, 2019). The acknowledgment that students navigate different circumstances and challenges necessitated an approach that considered the individual rather than adhering strictly to predetermined benchmarks. Moreover, this commitment to equity extended to the evaluation of student presentations. Recognizing that a holistic assessment requires varied perspectives, the grading process included not only the instructor's evaluation but also contributions from fellow students in the audience. This dual evaluation, with 60% from the instructor and 40% from peers, aimed to ensure a comprehensive and fair judgment that considered diverse viewpoints and interpretations.

The ethos underlying this grading strategy was clear: the course sought to be a platform for collective learning, acknowledging the individual journey of each student within the broader tapestry of the class. It aspired to be more than a conventional academic exercise; it aimed to be an inclusive and supportive environment where students felt empowered to strive for excellence, recognizing that excellence manifests differently for each learner. At the end of the course all 18 students passed.

3.4. Student Feedback and Reflection

To gauge the effectiveness of the pedagogical approaches, anonymous feedback was collected from students at the midpoint and end of the course. Student reflections highlighted the perceived benefits of the web-based exercises. One student noted, ‘‘The interactive nature of the exercises made the theoretical concepts more tangible and easier to understand. It felt seamless because we were actively engaging with the material rather than passively receiving information.’’ Yet another student reflected, ‘‘This course challenged me to think beyond textbook theories. Creating our own economic impact dashboards made me realize how much interpretation goes into presenting economic data.’’ Another noted, ‘‘The service learning project opened my eyes to the real-world complexities of economic policies. It's one thing to read about unemployment figures, but it's another to speak with people who've lost their jobs due to the pandemic.’’ Finally, another student commented, ‘‘Comparing mainstream and radical economic analyses of the crisis made me realize how much our assumptions shape our understanding of economic events. I now approach economic news with a more critical eye.’’ These reflections substantiate the instructor’s interpretation of the course’s effectiveness.

Students reported high levels of engagement with the collaborative projects and web-based exercises. One student commented, 'The group presentations on country policies really helped me understand how economic theories play out in the real world.' Another noted, 'Working with actual COVID data made the concepts much more tangible.'

However, some students found the workload challenging, particularly balancing the service learning component with other coursework. This feedback led to adjustments in the project timeline and increased support for time management. Overall, 85% of students rated the course as 'highly effective' in developing their critical thinking skills about economic issues.

It's important to note that this course had only 18 students, which facilitated intimate discussions and personalized feedback. Scaling these methods to larger classes would present challenges. For instance, in a class of 50 or more students, collaborative projects might need to be restructured into larger groups or peer-reviewed assignments. Web-based exercises could be adapted using automated grading tools and discussion boards to manage higher volumes of student work. The service learning component might shift to group projects or a selection of students rather than individual placements. Moreover, digital platforms can be leveraged to manage larger groups by utilizing breakout rooms for discussions and peer review mechanisms for feedback. However, maintaining the quality of interaction and ensuring individual student attention may require innovative solutions and increased administrative support.

Students provided detailed feedback on individual activities. For the country policy comparison project, one student noted, 'Researching New Zealand's policies and comparing them with other countries really helped me understand how economic theory translates to real-world decisions.'

Regarding the web-based exercises, another student commented, 'Creating our own visualizations of COVID data made the economic impacts feel more tangible. It was challenging but rewarding to interpret the results.' For the service learning component, a student reflected, 'Working with a local bookstore opened my eyes to the real-world complexities of economic policies. It's one thing to read about small business loans, but it's another to see how a real business navigates these programs.' We used this feedback to refine the course. For instance, based on student suggestions, we incorporated more structured peer review sessions for the service learning projects and extended the time allocated for in-class discussions of web-based exercise results

4. Conclusion

This course demonstrated the effectiveness of several key strategies in teaching the economics of the COVID-19 pandemic:

1. Collaborative country policy comparisons enhanced students' ability to apply economic concepts to real-world scenarios.
2. Web-based interactive exercises using real-time data improved data analysis skills and made abstract concepts more concrete.
3. Service learning projects with local businesses provided invaluable real-world experience and deepened understanding of policy impacts.

While implementing these strategies presented challenges, particularly in the context of remote learning and diverse student needs, the overall impact on student engagement and learning was significant. Educators can adapt these approaches to their own contexts, using the detailed examples and implementation notes provided as a starting point

In conclusion, this reflective case study of the "Economics of the Covid-19 Pandemic" course aims to contribute to the ongoing discourse on pedagogical innovations in radical political economics. The lessons learned from this course can inform future efforts to create inclusive, student-centered, and critically engaged learning environments within the evolving landscape of higher education.

References

Allgood, S., Walstad, W. B., & Siegfried, J. J. (2015). Research on teaching economics to undergraduates. Journal of Economic Literature, 53(2), 285-325.

Bone, K. D. (2021). Cruel optimism and precarious employment: The crisis ordinariness of academic work. Journal of Business Ethics, 174(2), 275-290.

Bringle, R. G., & Hatcher, J. A. (1996). Implementing service learning in higher education. The Journal of Higher Education, 67(2), 221-239.

Brant, J. W. (2015). What's Wrong with Secondary School Economics and How Teachers Can Make It Right--Methodological Critique and Pedagogical Possibilities. Journal of Social Science Education, 14(4), 7-16.

Connell, R. (2013). Neoliberalism and higher education: The Australian case. Universities in Crisis: Blog of the International Sociological Association, 20.

Damron, D., & Mott, J. (2005). Creating an interactive classroom: Enhancing student engagement and learning in political science courses. Journal of Political Science Education, 1(3), 367-383.

Freire, P. (1970). Pedagogy of the oppressed. New York: Continuum.

Freire, P. (2020). Pedagogy of the oppressed. In Toward a sociology of education (pp. 374-386). Routledge.

Gallas, A. (2018). Introduction: the proliferation of precarious labour in academia. Global Labour Journal, 9(1).

Giroux, H. A. (2011). On Critical Pedagogy. New York: Continuum.

Greenhow, C., Graham, C. R., & Koehler, M. J. (2022). Foundations of online learning: Challenges and opportunities. Educational Psychologist, 57(3), 131-147.

Hawtrey, K. (2007). Using experiential learning techniques. The Journal of Economic Education, 38(2), 143-152.

Hooks, B. (2014). Teaching to transgress. New York: Routledge.

Huang, A. H. (1997). Challenges and opportunities of online education. Journal of educational technology systems, 25(3), 229-247.

Jacoby, B. (1996). Service-Learning in Higher Education: Concepts and Practices. The Jossey-Bass Higher and Adult Education Series. Jossey-Bass Publishers, 350 Sansome St., San Francisco, CA 94104.

Kolb, D. A. (2014). Experiential learning: Experience as the source of learning and development. FT press.

Liverpool-Tasie, L. S. O., Adjognon, G. S., & McKim, A. J. (2019). Collaborative learning in economics: Do group characteristics matter?. International Review of Economics Education, 31, 100159.

McGoldrick, K. (1998). Service-learning in economics: A detailed application. The Journal of Economic Education, 29(4), 365-376.

Spotton Visano, B. (2019). Defying the dominant discourse: why contesting neoliberalism needs critical pedagogy in economics education. Critical Studies in Education, 60(3), 321-339.

Wooten, J., & Lynch, B. (2021). Teaching economics using scenes from Superstore. International Journal of Pluralism and Economics Education, 12(3-4), 308-321.

Yin, K. Y., Bing, K. W., Hadi, F. S. A., & Bakar, M. S. A. (2020). The effect of video-based collaborative learning among economics' undergraduates in Malaysia. International Journal of Advanced Science and Technology.

Author contact: ceyhun.elgin@bogazici.edu.tr

SUGGESTED CITATION:
Ceyhun Elgin, "Fostering Critical Inquiry: Radical pedagogies in teaching the economics of the COVID-19 Pandemic", *real-world economics review*, issue no. 110, March 2025, pp. 98–110, http://www.paecon.net/PAEReview/issue110/Elgin110.

You may post and read comments on this paper at https://rwer.wordpress.com/comments-on-rwer-issue-110/.

End Matter

Board of Editors

ISSN 1755-9472

EDITOR: Edward Fullbrook,
ASSOCIATE EDITOR: Jamie Morgan

PAST CONTRIBUTORS: James Galbraith, Frank Ackerman, André Orléan, Hugh Stretton, Jacques Sapir, Edward Fullbrook, Gilles Raveaud, Deirdre McCloskey, Tony Lawson, Geoff Harcourt, Joseph Halevi, Sheila C. Dow, Kurt Jacobsen, The Cambridge 27, Paul Ormerod, Steve Keen, Grazia Ietto-Gillies, Emmanuelle Benicourt, Le Movement Autisme-Economie, Geoffrey Hodgson, Ben Fine, Michael A. Bernstein, Julie A. Nelson, Jeff Gates, Anne Mayhew, Bruce Edmonds, Jason Potts, John Nightingale, Alan Shipman, Peter E. Earl, Marc Lavoie, Jean Gadrey, Peter Söderbaum, Bernard Guerrien, Susan Feiner, Warren J. Samuels, Katalin Martinás, George M. Frankfurter, Elton G. McGoun, Yanis Varoufakis, Alex Millmow, Bruce J. Caldwell, Poul Thøis Madsen, Helge Peukert, Dietmar Lindenberger, Reiner Kümmel, Jane King, Peter Dorman, K.M.P. Williams, Frank Rotering, Ha-Joon Chang, Claude Mouchot, Robert E. Lane, James G. Devine, Richard Wolff, Jamie Morgan, Robert Heilbroner, William Milberg, Stephen T. Ziliak, Steve Fleetwood, Tony Aspromourgos, Yves Gingras, Ingrid Robeyns, Robert Scott Gassler, Grischa Periono, Esther-Mirjam Sent, Ana Maria Bianchi, Steve Cohn, Peter Wynarczyk, Daniel Gay, Asatar Bair, Nathaniel Chamberland, James Bondio, Jared Ferrie, Goutam U. Jois, Charles K. Wilber, Robert Costanza, Saski Sivramkrishna, Jorge Buzaglo, Jim Stanford, Matthew McCartney, Herman E. Daly, Kyle Siler, Kepa M. Ormazabal, Antonio Garrido, Robert Locke, J. E. King, Paul Davidson, Juan Pablo Pardo-Guerra, Kevin Quinn, Trond Andresen, Shaun Hargreaves Heap, Lewis L. Smith, Gautam Mukerjee, Ian Fletcher, Rajni Bakshi, M. Ben-Yami, Deborah Campbell, Irene van Staveren, Neva Goodwin, Thomas Weisskopf, Mehrdad Vahabi, Erik S. Reinert, Jeroen Van Bouwel, Bruce R. McFarling, Pia Malaney, Andrew Spielman, Jeffery Sachs, Julian Edney, Frederic S. Lee, Paul Downward, Andrew Mearman, Dean Baker, Tom Green, David Ellerman, Wolfgang Drechsler, Clay Shirky, Bjørn-Ivar Davidsen, Robert F. Garnett, Jr., François Eymard-Duvernay, Olivier Favereau, Robert Salais, Laurent Thévenot, Mohamed Aslam Haneef, Kurt Rothschild, Jomo K. S., Gustavo Marqués, David F. Ruccio, John Barry, William Kaye- Blake; Michael Ash, Donald Gillies, Kevin P.Gallagher, Lyuba Zarsky, Michel tmoerBauwens, Bruce Cumings, Concetta Balestra, Frank Fagan, Christian Arnsperger, Stanley Alcorn, Ben Solarz, Sanford Jacoby, Kari Polanyi, P. Sainath, Margaret Legum, Juan Carlos Moreno-Brid, Igor Pauno, Ron Morrison, John Schmitt, Ben Zipperer, John B. Davis, Alan Freeman, Andrew Kliman, Philip Ball, Alan Goodacre, Robert McMaster, David A. Bainbridge, Richard Parker, Tim Costello, Brendan Smith, Jeremy Brecher, Peter T. Manicas, Arjo Klamer, Donald MacKenzie, Max Wright, Joseph E. Stiglitz. George Irvin, Frédéric Lordon, James Angresano, Robert Pollin, Heidi Garrett-Peltier, Dani Rodrik, Marcellus Andrews, Riccardo Baldissone, Ted Trainer, Kenneth J. Arrow, Brian Snowdon, Helen Johns, Fanny Coulomb, J. Paul Dunne, Jayati Ghosh, L. A Duhs, Paul Shaffer, Donald W Braben, Roland Fox, Stevan Harnad, Marco Gillies, Joshua C. Hall, Robert A. Lawson, Will Luther, JP Bouchaud, Claude Hillinger, George Soros, David George, Alan Wolfe, Thomas I. Palley, Sean Mallin, Clive Dilnot, Dan Turton, Korkut Ertürk, Gökcer Özgür, Geoff Tily, Jonathan M. Harris, Jan Kregel, Peter Gowan, David Colander, Hans Foellmer, Armin Haas, Alan Kirman, Katarina Juselius, Brigitte Sloth, Thomas Lux, Luigi Sapaventa, Gunnar Tómasson, Anatole Kaletsky, Robert R Locke, Bill Lucarelli, L. Randall Wray, Mark Weisbrot, Walden Bello, Marvin Brown, Deniz Kellecioglu, Esteban Pérez Caldentey, Matías Vernengo, Thodoris Koutsobinas, David A. Westbrook, Peter Radford, Paul A. David, Richard Smith, Russell Standish, Yeva Nersisyan, Elizabeth Stanton, Jonathan Kirshner, Thomas Wells, Bruce Elmslie, Steve

---

Articles, comments on and proposals for should be sent to the editor at
pae_news@btinternet.com

Subscriptions to this email journal are free to all members of the World Economics Association (WEA). WEA memberships are free at http://worldeconomicsassociation.org/

Back issues of this journal and material related to the PAE movement are available at
www.paecon.net.

To subscribe to this journal go **here** (http://www.feedblitz.com/f/f.fbz?Sub=332386)

To unsubscribe to this journal go to

http://www.feedblitz.com/f/f.fbz?EmailRemove=_NDUzNDkzMHwzMzIzODZ8cGFlX25ld3NAYnRpbnRlcm5ldC5jb218MTA5OTU4_