Are There Limits to Economic Growth?

Political and Economic Thought

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Economic growth has for centuries been a topic of interest in economic thought. In ancient Greece, philosopher Aristotle deemed it unnatural to make profit through trade because it meant making gains at the expense of others (Backhouse, 2002). Needless to say, a lot has changed since then. Economic growth has been a way of improving the wellbeing of society, enabling us to satisfy basic needs and increase our quality of life. Since the Industrial Revolution, economic growth has accelerated, leading economic thinkers to question if growth can continue indefinitely. Adam Smith said “It is the great multiplication of the productions (..) which occasions in a well-governed society” (Lepenies, 2016, p. 22). Economic growth has through history been measured in different terms of material expansion, such as Smith’s ‘annual produce’ and more recently GDP or income per capita. But are there any limits to this growth? This assignment will argue that there are limits to economic growth if it continues to entail further material expansion. This will be done by first analyzing and comparing the ideas and arguments of selected classical thinkers. These will include Adam Smith, Thomas Malthus, David Ricardo, John Stuart Mill, and William S. Jevons. Despite speculations of others before, these must be regarded as the main precursors of modern growth theory (Harris, 2007). Secondly, this assignment will consider the modern perspective on limits to economic growth, followed by a presentation and refutation of opposing arguments. Finally limits to growth will be discussed focusing on the desirability of growth and the concept of the stationary state.

One of the most influential economic thinkers of the 18th century was moral philosopher and father of classical economic liberalism Adam Smith. Smith took inspiration from the French physiocrats who were among the first to treat economics as a natural science (Lund, 2020a, p. 11). Economic growth was, according to Smith, generated by technical progress and accumulation of capital. The division of labor and the infamous invisible hand were behind Smith’s optimistic growth theory from 1776, with market mechanisms and people’s self-interest independently propelling economic growth to the benefit of society as a whole (Zweig, 1979). Still, Smith did not predict that growth could continue indefinitely. Accumulations of wealth would be invested into new capital, increasing the division of labor and demand for workers. This would lead to higher wages and population growth resulting in higher productivity and profits. This growth trajectory would eventually halt as he argued “high wages of labor and high profits of stock are things which scarce ever go together indefinitely” (Zweig, 1979, p. 514), and growth would therefore come to an end when a country’s full growth potential had been reached. Smith argued that people would naturally continue to procreate and increase productivity, however decreasing returns on agriculture and exhaustion of resources would eventually overpower growth efforts. At this point, society will descend into the stationary state, where wages are reduced to the bare minimum for survival and profits are so
low that accumulation is not worthwhile (Zweig, 1979). Thus, Smith saw clear limits to economic growth, with a dreadful stationary state looming in the distant future.

While Smith anticipated the stationary state as a result of resource exhaustion and decreasing returns and profit, the British clergyman Thomas R. Malthus two decades later proposed another limit to economic growth in his influential *Essay on the Principle of Population* from 1798. By looking at the North American colonies, Malthus argued that what would eventually limit growth was overpopulation. Specifically, that the population will outgrow the means of subsistence. Malthus’ arguments were in response to the optimistic views on human society promoted by thinkers such as Jean-Jacques Rousseau (Jackson, 2016, p. 9) and William Godwin, who were enthusiastic about the intellectual capacity of man to overcome population problems (Zweig, 1979). Malthus, on the other hand, was quite the pessimist and although he agreed with Smith on the main drivers of growth, he argued that the population would eventually expand beyond the available food supply and people would as a result suffer the struggle for existence (Jackson, 2016). He based his argument on the claim that if unchecked the population will grow according to a geometric progression, whereas food supply will grow only arithmetically leading to overpopulation (Zweig, 1979). Once the population outgrows food supply, it will be reined back into equilibrium through checks such as war, famine, and postponement of marriage, which will in turn end economic growth (Backhouse, 2002, p. 134).

Compared to Smith, Malthus had bleak prospects for the economy as he argued that suffering was inherent in nature and that it would arise directly from population pressure – a view prompting Thomas Carlyle to describe economics as a dismal science (Jackson, 2016, p. 10). The historical contexts of Smith and Malthus might explain these different levels of optimism with Smith making his career in a time of unequivocal economic expansion and technological progress while Malthus witnessed decline and crisis coupled with immense population growth and rising inequality (Lund, 2020b, p. 13).

British classical economist David Ricardo too saw limits to economic growth. Ricardo’s theory was devised with the backdrop of the Napoleonic Wars, with increases in the price of corn and agricultural rent, why it might not be a surprise that Ricardo regarded rent on land as a limit to economic growth (Backhouse, 2002, p. 137). Like Malthus, Ricardo agreed with Smith on the conditions for growth, and he also similar to Smith saw economic growth as a self-sustaining process elevating overall wealth in society. However, where Smith saw all economic activity as contributing to growth, Ricardo argued that land rent was counterproductive to growth. He held that land profits would end up in the pockets of landowners where it would serve no productive purpose. Ricardo thus argued the very opposite of Malthus, who saw landowners as the solution to market gluts and
overproduction, as their accumulated wealth enabled them to make up for excess supply in the market (Lund, 2020b, p. 17). Still, Ricardo like both Smith and Malthus anticipated the stationary state where the limit to economic growth would be reached. While Smith and Malthus argued empirically from their own observations, Ricardo argued more theoretically and inductively. Basing his arguments on evident propositions, he used abstract reasoning to arrive at his conclusions (Galbraith, 1987). Central to Ricardo’s reasoning was his law of diminishing returns, in which a decreasing quality of input would continuously diminish return. His law was based on agriculture, which was the largest sector of his time, arguing that less and less fertile land would be brought into cultivation making the yield of each additional acre smaller (Zweig, 1979). By successively cultivating land of inferior quality, prices on food and rent would rise and profits would fall, leading to the cessation of economic growth (Cannan, 1892).

Ricardo’s economic theory would later influence British social liberalist John Stuart Mill in his 1848 Principles of Political Economy (Backhouse, 2002, p. 154). Like his predecessors, Mill also predicted limits to economic growth such as resource exhaustion and declining profits, and he was among the first to vaguely anticipate deleterious consequences of industrialization such as pollution (Zweig, 1979). He agreed that “the increase of wealth is not boundless” (Mill, 1848), however what separates Mill from the others was his vision of the future stationary state. While his predecessors looked to the stationary state with distain and fear, Mill was much more optimistic. He challenged whether the progress of society really would "end in shallows and in miseries" (Mill, 1848), and instead proposed that the stationary state would be an improvement to that of growth (Zweig, 1979, p. 519). Mill argued that there was no reason to desire continual growth if it gave little or no added pleasure, which would be the case for rich people. Here we see Mill’s utilitarian qualities, which were arguably instilled in him through his education in line with utilitarian Jeremy Bentham (Backhouse, 2002, p. 153). Mill held that only developing countries would benefit from increased economic growth, while advanced countries instead needed better distribution of wealth (Mill, 1848). This was not to say that there would be no development in the stationary state. Mill foresaw great opportunities for “mental culture, and moral and social progress” (ibid.), however he realized that this kind of stationary state would require social transformations in all layers of society (Zweig, 1979).

After Mill’s contribution to the question of limits to growth in the mid-19th century, the topic fell out of central interest in economic theory until after World War Two (Zweig, 1979). Yet, some still contemplated on economic growth such as William Stanly Jevons. Jevons was one of the founders of the marginal school of economics, using statistical and inductive applied economics to make his arguments. (Backhouse, 2002, p. 172) In 1865, he too
argued that there were limits to economic growth. By looking at the British coal reserves, he proposed the Coal Question, which stated that the rising demand and price of coal would incentivize the development of new extraction techniques. This would increase supply of coal and decrease the price, only to once again increase demand (Lund, 2020c, p. 19). Using detailed statistics on coal stocks and the industrial expansion, Jevons therefore argued that there are clear limits to growth due to depletion of natural resources (Backhouse, 2002).

Looking in the history of economic thought we thus find several arguments stating that there are considerable limits to economic growth due to factors such as depletion of natural resources, overpopulation, and diminishing returns. According to the classical thinkers, this will eventually lead society to a stationary state, which was envisioned by most with dread and concern, only Mill looking to it with optimism. In order to answer the posed question, the assignment will now move on to consider the modern perspective on economic growth and how the classical arguments have held up in time.

The modern perspective

Contrary to the classical thinkers, contemporary economic theory on the limits to growth has the advantage of modern science and computer models to make their arguments. Many contemporary economists therefore base their arguments on scientific evidence and data such as that presented in the influential 1972 report, The Limits to Growth. The report analyzed the relationship between population, technology, industrial capital, agriculture, and environmental quality to assess the limits to growth. At the core of their findings, Donatella Meadows and her colleagues established that material growth cannot continue indefinitely as the planet is physically limited (Jackson, 2016). Likewise, a few decades later scientist Johan Rockström and his colleagues published an extensive audit of society’s proximity to nine “biophysical boundaries”, which if breached will risk destabilizing the earth’s critical life-sustaining systems (Rockström, et al., 2020). If economic growth continues to push these boundaries with overconsumption and material expansion, the consequences may be catastrophic for the habitability of the earth (Rockström, 2009). As The Limits to Growth concluded, all the available evidence suggests that out of “unrestricted growth, a self-imposed limitation to growth, or a nature-imposed limitation to growth – only the last two are actually possible” (Meadows, et al., 1972, p. 168). This bears much resemblance to J. S. Mill when he wrote: “I sincerely hope (..) that they will be content to be stationary, long before necessity compels them to it” (Zweig, 1979, p. 519).

Using the evidence presented above, current economists are – like the classical thinkers – arguing that there are clear limits to economic growth. Professor and ecological economist Tim Jackson states that economic growth,
as it is currently understood in material terms, is inherently limited on this finite planet. The deteriorating impact of economic growth on the environment is drastic, and even if the current trajectory could be adjusted to alleviate environmental issues, Jackson argues that the world would still face the fact that economic growth causes more people to achieve higher levels of affluence and thus consume more of the world’s finite resources (Jackson, 2016). The limit is however not that the world will run out of resources, as several of the classical thinkers anticipated, but rather that increasing scarcity of resources will cause higher extraction costs, rendering extraction unfeasible, and thus constraining economic growth (Bardi, 2014). In addition to the physical arguments, Jackson also considers continued economic growth a moral question, namely “how much of the world’s resources does any one nation (..) have a right to in the pursuit of human well-being?” (Jackson, 2011). According to Jackson, the limits to growth place moral pressure on the affluent West to “make room for growth” in the poorest nations (ibid.). These moral contemplations on economic growth were seldom seen in classical theory on economic growth. Quite the opposite with thinkers such as Malthus and Ricardo passionately objecting to the poor laws of the Speenhamland System in 1793-1815 (Lund, 2020b). Because of the environmental limits to growth and his moral considerations, Jackson argues for a society in which growth is measured in human wellbeing and not purely in material terms. And like J. S. Mill, he realizes that this will require significant social transformations in the current consumerist system.

Although the classical thinkers did not anticipate the deteriorating effects of economic growth on the environment specifically, much of the current perspective is mirrored in the trajectory rooted in classical economic thought (Zweig, 1979). While Malthus’ population theory clearly underestimated the technological advancements in agriculture, which have enabled society to support a population seven times the size of when Malthus lived, the rising population is still a factor pressuring the planetary limits of growth (Perloff, 2018). Furthermore, although diminishing returns have largely been counteracted by technical progress and efficiency, the classics’ concern about depletion of natural resources is still very relevant in the modern perspective. So, although the specific limits have changed and moral considerations have entered growth theory, there are still clear limits to economic growth if it continues to entail further material expansion.

The arguments presented in this assignment have not gone unchallenged. Theorists through history have contested the limits to growth perspective and argued for ways of enabling limitless growth. Economist Joseph Schumpeter argued in 1912 that economic stagnation could be prevented by technological progress (Howitt, 2005). He placed entrepreneurs at the center of his theory, who in cycles would innovate new products, supply new sources, and new production methods, which would keep the economy growing (Backhouse, 2002). The
basis of this argument prevailed and was also employed by several economists to counter the conclusion of *The Limits to Growth*, by stating that the report underestimated the capacity of investment in research (Jacobs & Šlaus, 2012). However, as argued by Italian economist Orio Giarini, there is inherent risk in all research and it is unrealistic to simply rely on research to generate desired results (ibid., p. 62). Furthermore, Donatella Meadows and her colleagues behind *The Limits to Growth* anticipated the technology argument and created a world model not only assuming that technology would indeed solve the world’s resource problem, but also assuming that we would no longer use fossil fuels for power, that we would withhold as many pollutants as possible, and that we would mine the most remote reserves and recycle resources. Even if all these conditions were in place, the result would still be an end to growth before the year 2100 (Meadows, et al., 1972, p. 141). Sheer faith in the progress of technology will thus not likely be enough to enable limitless growth.

The more recent argument for limitless economic growth is that of decoupling, which holds that through technological innovations, economic growth can be disconnected from its environmental impact. In a critical analysis, however, Tim Jackson found this to be highly unrealistic (Urhammer & Røpke, 2017). While it has been possible to decrease the ecological impact per unit of economic output and thereby achieve relative decoupling, absolute decoupling, whereby the ecological impact declines in absolute terms, is still a long way off. Energy use, carbon emissions, and deforestation are among some of the damaging factors still increasing despite technological investments (Jackson, 2011). To achieve the absolute decoupling needed to sustain economic growth, the ecological impact of growth would have to decrease at such a rate that it would outrun increases in both population and income per capita. Nothing in the data suggests that this is feasible. Since 1990 the ecological impact has declined on average by 0.7%, while the population and income per capita have increased by 1.3% and 1.4% (ibid.). Relative decoupling is thus nowhere near absolute decoupling. Instead, CO2 emissions have grown almost 40% since 1990, only pushing society closer to its planetary boundaries (ibid.). As Jackson concludes, for decoupling to solve the limits to growth, it would require a transformation and dematerialization well beyond anything ever achieved in history. And it would need to do so in a society that is based on consumption and material expansion, making it an insurmountable task unlikely to enable limitless economic growth.

**The desirability of growth and the stationary state**

Today, the question of limits to economic growth has begun to cast doubt on whether continued growth is even desirable. In the historical context of the classical thinkers, no doubt was given to the fact that economic growth
was desirable (Zweig, 1979). Although growth was argued to be limited, scarcity and hunger were the condition for many people and economic growth was needed to satisfy the basic needs of the population. Although most thinkers through history did not doubt the need for economic growth in their own time, several did anticipate that a time would come when growth would no longer be in society's best interest. John S. Mill, as mentioned, hoped that society would willingly accept a stationary state before limits would force them to. Similarly, economist John Maynard Keynes anticipated that a time would come when accumulation of wealth would no longer be of social importance – even describing the endless pursuit of money as “a somewhat disgusting morbidity” (Keynes, 1932, p. 368). Although we have not reached that point yet, with an economy still based on growth and material expansion (Jackson, 2011), thinkers are beginning to question the desirability of continued growth. Current mainstream economists such as the 2019 winners of the Nobel Prize in Economics, Abhijit Banerjee and Esther Duflo, are an example of this, writing “nothing in either our theory or the data proves the highest G.D.P. per capita is generally desirable” (Cassidy, 2020). Living standards in most of the world have improved significantly and as Carl Menger’s law of diminishing marginal utility predicts, the advantage of economic growth for rich nations shows diminishing returns. In their book Good Economics for Hard Times, Banerjee and Dulfo argue that economic growth does not necessarily increase wellbeing, especially if it is distributed unequally. Clear parallels are here seen to Mill when he wrote: “In most advanced countries, what is needed economically is a better distribution to relieve poverty” (Zweig, 1979, p. 519).

Questioning the desirability of growth has also caused many contemporary economists to speculate on the stationary state like the classical thinkers did. The thought of a stagnant or decreasing economy still causes significant concern for economists and policy makers, as it did for several of the classical thinkers (Jackson, 2011). However, Mill’s optimistic view still resonates and has inspired several thinkers to envision a stationary society that adheres to the planetary limits of economic growth. In The Limits to Growth, Meadows et al., for instance, proposed the equilibrium state, where society is based on technological innovation and social progress, and people are released from struggling with the problems caused by growth (Pestel). More recently, economist Kate Raworth presented the concept of so-called doughnut economics, where society can flourish in the space between a stable social foundation and the ecological ceiling (Raworth, 2017). Clear limits to economic growth in its material understanding have thus prompted current economists to rethink some of the basic assumptions underlying our current economic system, resulting in theories with great resemblance to Mill’s 1848 vision of the stationary state.
In conclusion, there are limits to economic growth if it continues to entail further material expansion. Since the sweeping growth of the Industrial Revolution, classical economic thinkers including Smith, Malthus, Ricardo, and Mill as well as Jevons all argued that economic growth would not be limitless. They anticipated that diminishing returns and depletion of natural resources, as well as overpopulation in the case of Malthus, would eventually halt economic growth and lead society to a stationary state. This state was viewed by most with dread and dismay, only social liberalist J. S. Mill looking to it with optimism, arguing that it would be an improvement to the growth-based society. The thoughts of the classical economic thinkers resonate in the modern perspective on limits to growth, which states that continued economic growth is limited by biophysical conditions on the planet. Continued material expansion and consumption will pressure natural resources and put life-sustaining planetary systems at risk, deteriorating the habitability of the earth. Limits foreseen by the classical thinkers like overpopulation and depletion of resources are in combination with pollution and overconsumption pressuring these planetary boundaries and limiting economic growth. Although thinkers through time, such as Joseph Schumpeter, have argued that technological advancements can prevent stagnation, and recent theories of decoupling put faith in green innovation, the sheer scale of the task is daunting and does not solve the fact that if economic growth continues to entail material expansion, it cannot continue indefinitely on a finite planet. This has led current economic thinkers to question whether economic growth is really desirable anymore. Times have changed since the Industrial Revolution with significantly higher living standards. So, in the face of risking to breach planetary boundaries, it may be time to rethink the growth orthodoxy in our economic system and consider a better way of realizing Bentham’s principle of “the greatest happiness of the greatest number” (Burns, 2005).
Bibliography


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