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Competition Policy, Sustainability, and Inclusive Wealth

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Abstract

The regulatory shift by competition and antitrust authorities, allowing limited industry collusion in sustainability-related investments to align markets with broader environmental and social objectives, suggests a re-evaluation of competition as a mechanism for promoting collective welfare. Drawing on Adam Smith's classical works as presented in *The Wealth of Nations* and *The Theory of Moral Sentiments*, this paper explores this issue through a historical lens while at the same time showing how this innately connects to the established literature on sustainable development, in particular justice and inclusive wealth. Combined, we discuss the role of modern competition policy in adjudicating and evaluating trade-offs in societies' overall welfare function that comprises negative externalities and natural capital.

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1 Introduction

The objectives of competition and antitrust regulation have traditionally focused on promoting and maintaining efficient markets, preventing monopolies and abuse of market power, and safeguarding consumer welfare (Motta 2004). These regulations have primarily sought to ensure that firms compete fairly, warding off anti-competitive practices that could harm consumers by raising prices. At the same time, competition policy has been employed to create market conditions that incentivize firms to engage in research and development (R&D), with potential downstream benefits for consumers through innovation. However, there is an emerging discourse on whether competition and antitrust policy should go *beyond* merely promoting competitive markets and also aid other social objectives such as environmental sustainability (e.g., Shapiro 2021).

In many senses Adam Smith can be seen as the intellectual forefather of both interpretations of modern competition policy. Smith saw competitive free markets favouring 'equality, liberty, and justice' and saw the provision of 'extraordinary privileges' to certain industries (such as the case under mercantilism) as a violation of this system (Kurz, 2016). One of the most cited passages from the *The Wealth of Nations* refers to the dangers of collusion: '*People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices. It is impossible, indeed, to prevent such meetings, by any law which either could be executed, or would be consistent with liberty and justice.*' While the first part of this quote is widely known, the second is equally significant and somewhat echo the broader aspirations now being debated in competition discourse. How can competition policy be enforced in a manner that preserves both the efficiency of free markets and the principles of equitable justice?

The principle of modern competition policy is based on welfare theory which stresses that markets are competitive and lead to welfare gains for consumers. However, the trade-off between efficiency and equity are becoming more pertinent in competition policy discussions (e.g. OECD 2015; Stiglitz 2017; Ezrachi et al. 2023; OECD 2024); albeit with some strong defence of the traditional welfare standard approach (Ducci and Trebilock 2019; Vickers 2025). A key underpinning of the drive towards a more inclusive interpretation of competition law is a Rawlsian conceptualisation of justice (Pike 2021; Bietta 2025). Rawls saw his theory as a challenge to classical and utilitarian views of justice, such as those of Adam Smith. But this view has been challenged by Sen (2009), who argued that Smith's other masterpiece, *The Theory of Moral Sentiments*, is relevant to this debate. Smith was first and foremost a moral philosopher, a virtue ethicist, and therefore ethics underpins his approach. Reading Smith's work more broadly then can allow us to more fully appreciate the scope of his contributions (Salvador and Signorino 2014). The question of relevance that this paper aims to reflect on is how justice (or fairness) can be thought of in the context of competition policy.

One domain where this is particularly pertinent is sustainable development, a concept which has been defined in terms of intergenerational justice (Rawls 1971; Solow 1974, 1986, 1993; Sen 2009). Given the intensifying pressures on societies resulting from climate change, pollution, and environmental degradation (Pörtner et al. 2023; Rockström et al. 2023), competition and market authorities in Australia, the United Kingdom, the Netherlands, and the European Union more widely are proactively revisiting competition rules to stimulate sustainability-oriented industrial activity. To accommodate this, a specific policy approach to restrain competition which has gained traction is that of (horizontal) sustainability agreements between firms (Schinkel and Treuren 2021). These cooperative agreements allow for explicit collaboration among competing firms, which would be permissible when they contribute to overarching public interests. In the realm of environmental sustainability, the objectives of such agreements could be to enhance firms and industries' ability to invest in products and/or processes that align with principles of corporate social responsibility (CSR) and/or more sustainable consumption and production (SCP) (Schinkel and Spiegel 2017; Schinkel et al. 2022; Schinkel and Treuren 2024).

In 2023, the EU introduced exemptions to Article 101(1) of the *Treaty on the Functioning of the European Union* (TFEU) to horizontal cooperation agreements. The European Commission (2023) guidelines state that: 'Horizontal cooperation agreements can lead to substantial economic benefits, including sustainability benefits, in particular where they combine complementary activities, skills or assets. Horizontal cooperation can be a means to share risk, save costs, increase investments, pool know-how, enhance product quality and variety, and launch innovation faster. Similarly, horizontal cooperation can be a means to address shortages and disruptions in supply chains or reduce dependencies on particular products, services and technologies.' At the same time, horizontal agreements could also lead to reduced competition (Veljanowski 2022). The analytical framework then is a case of assessing whether horizontal agreements lead to an anticompetitive outcome and if the benefits of the horizontal agreement justify this outcome.

However, the main challenge with incorporating normative issues such as 'sustainability' (for what, for whom, and under what criterion) in competition policy is that it can be in conflict with traditional efficiency goals. Sustainable development is a normative concept, and while we can use a traditionally accepted definition, such as the 1987 Brundtland Commission, it is still subject to debate. A standard criticism is the 'Friedman doctrine' where Friedman (1970) criticised nascent concepts of CSR for their *'analytical looseness and lack of rigor'*. Friedman (1962) was classically liberal in that his view was based on the competitive outcome of markets resulting in the socially optimum outcome: '*there is one and only one social responsibility of business — to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition, without deception or fraud.*' Friedman thus saw business interests preventing free competition through the use of the state (Smith 2025). In this sense, it was drawing on a 'narrow' reading of Adam Smith; narrow in the sense that it is a reading that sees the *Wealth of Nations* as independent of the *Theory of*

Moral Sentiments. More recent scholarship has emphasised Smith's views based on a close reading of both of his masterpieces (e.g., Sen 2009, 2010; Kurz 2016).

These issues are directly relevant for competition policy today as illustrated by the case of horizontal block exemption regulations briefly mentioned above. These cooperative agreements allow firms to collude on sustainability initiatives in the pre-competition stage while continuing to compete in the final output market. The underlying idea here is to leverage competition policy such that sustainability benefits are generated for society at large while at the same ensuring that consumer surplus is protected. Fundamentally, this translates into a broadening of the social welfare function by not only considering consumer surplus but also other components, in particular environmental quality. A case which exemplifies the competition-sustainability 'balance' is that of the shrimp industry in the early 2000s where a horizontal agreement between shrimp wholesalers to limit the shrimp harvested to encourage sustainable fishing methods was denied by the Netherlands Competition Authority (NMa), arguing that the agreement was not required to achieve this sustainable objective (NMa 2003). An example of cooperative agreement that was allowed to proceed is the CEDED case, where in 1999 the European Commission approved an agreement among washing machine manufacturers to phase out less energy-efficient models. The Commission justified the exemption under Article 101(3) TFEU on the grounds that the environmental benefits, mainly reduced energy and water consumption, would directly benefit consumers and outweighed the potential loss of competition. Importantly, the agreement was found not to eliminate competition in other dimensions such as price or performance. This approval was later extended to similar agreements involving dishwashers and water heaters (European Commission 1999, 2001).

In another case, the Dutch Authority for Consumers and Markets (ACM) evaluated the environmental benefits in comparison to consumer surplus for a proposed agreement on closing old coal power plants to fasten the energy transition. Based on their analysis (see ACM, 2013), the ACM decided against the proposal, arguing that the expected loss in consumer surplus (i.e., higher energy prices as a result of reduced energy capacity) would not be sufficiently compensated for by the improvement of environmental quality (i.e., reduced pollution). From a social welfare maximization perspective, utilising competition policy to serve multiple welfare components simultaneously—here consumer surplus versus environmental quality—is a challenging regulatory balancing act. This is amplified by the fact that environmental quality is a non-market good for which generally no market prices exist. One way to overcome this problem is by using shadow prices. Kloosterhuis and Mulder (2015) is one of the few studies that demonstrates, for the above case study, how this can be done, thereby explicitly recognizing the inclusion of environmental benefits in the economic welfare function.[1]

[1] See Schinkel and Spiegel (2017, pp. 372-374) for a succinct overview of illustrative and informative cases; Vickers (2025) provides an overview of the traditional approach.

Regardless, the above examples highlight how arbitrarily applying a 'sustainability criterion' on an ad hoc basis can lead to some inconsistencies. What is needed is a clearer consistent theoretical approach that can be used systematically in a case-by-case basis and thereby providing a more solid foundation for policy objectives. The current EU assessment guidance for 101(1) exemption, while detailed, lacks a consistent theoretical framing. The European Commission (2023) is aware that, given the range of likely cooperative agreements, it would not be possible to provide specific guidance that satisfies each agreement, leading to uncertainty for firms engaging in cooperative behaviour. Therefore, a consistent theoretical framing can assist in this endeavour. Building on these case studies, our paper aims at proposing a dynamic and more systematic framework for integrating sustainable development into competition policy. The economics of sustainable development suggests that maintaining non-declining wealth over time satisfies the sustainability criterion, with wealth defined inclusively to encompass manufactured, human, social and natural capital (Arrow et al. 2003; Polasky et al. 2015). This implies taking both a dynamic and inclusive view of economic welfare, i.e., it is total as well as future welfare that matters and not only protecting consumer surplus in a static sense (Motta 2004).

This approach ensures that economic progress does not compromise these forms of capital, securing broader well-being for future generations. Following such an approach, we argue that broadening the regulatory remit for competition policy should also take an inclusive wealth approach. This automatically brings us back to Adam Smith's *Wealth of Nations* (1776) as well as his *Theory of Moral Sentiments* (1759).[2] We shall explore whether competition and antitrust policy can be an effective regulatory tool for advancing inclusive wealth. By linking Smith's classical economic theories with contemporary challenges in industrial organization and sustainable development, our paper seeks to explore the potential for competition and antitrust policy to contribute to a more inclusive form of wealth creation.

In doing so we follow Sen (2010) in proposing that Adam Smith's insights can shed light on the use competition policy for sustainability. This was also the view of Boulding (1971) (one of the key thinkers in the emergence of modern sustainability science) who argued that it was possible to return to Smith and find new insights that may have been missed on first reading. A key distinction though is that we see Smith as a 'two-book man', and observe that many lines of departure proposed by Smith have not been fully explored. We examine one such line of inquiry, the role of ethics in competition policy, an issue that lies at the heart of Smith's work as both a virtue ethicist and economist. Drawing on the full corpus of Smithian thought, we show how an 'inclusive' competition policy could potentially be compatible with the views of modern competition policy and illustrate how this approach can be seen through the conceptualisation of 'inclusive wealth of nations' (McLaughlin 2026).

[2]There were five editions of *The Wealth of Nations*, the last edition was published in 1789. There were 6 editions of *The Theory of Moral Sentiments* with the last edition published in 1790 just before Smith died; the final edition underwent significant revision (Matson 2020).

In what follows, we first discuss the ideas of competition and free trade as presented in *The Wealth of Nations*, and then extend the discussion to the concept of justice as presented both in *The Wealth of Nations* and *The Theory of Moral Sentiments*. We subsequently introduce the theory of inclusive wealth, which is based on intergenerational welfare, and conclude with some thoughts relating back to modern day issues in competition policy.

2 Competition, Free Markets, and the *Wealth of Nations*

Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations*, published on 9 March 1776, was an inspirational treatise that set the foundation for modern economic theory and policy. The *Wealth of Nations* is considered a classic in academic and financial circuits, but as Barber (1967) wryly surmised, it 'has suffered the fate accorded to most classics: it is more talked about than read.' A similar point was made by Sen (2010) that there is a greater tendency to quote Smith than to actually read his arguments. The *Wealth of Nations* is a book of books (5 in total) that makes several complex arguments. While the central focus of Smith is on division of labour, capital accumulation and the importance of free markets, there is more to the arguments. In fact, book 5 lays out the limits of markets (Sen 2016) and, as a consequence, the importance of regulation (Salvadori and Signorino 2014; Kurz 2016).

The division of labour and specialisation is core to Smith's theory and is central to Book I (although here he drew on the ideas of the moral philosopher Francis Hutchenson, his predecessor at the University of Glasgow). The division of labour requires free and competitive markets for people to specialise in particular occupations. This is best illustrated using the iconic butcher, brewer, and baker passage:

> 'It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity, but to their self-love, and never talk to them of our own necessities, but of their advantages.' (WON, I, ii).

Note here the example is of different trades operating in their own self-interest, when people of the same trade met Smith saw this as a 'conspiracy against the public' and Smith saw this manifested as higher prices (and thus reduced welfare) for the public (WON, I, x). Smith also raised the prospect of how conspiracies across industries that could reduce the welfare of society. For example, through the collusion of employers against labour:

> 'We rarely hear, it has been said, of the combinations of masters, though frequently of those of workmen. But whoever imagines, upon this account, that masters rarely combine, is as ignorant of the world as of the subject. Masters are always and everywhere in a sort of tacit, but constant and uniform, combination, not to raise the wages of labour above their actual rate... Masters, too, sometimes enter into particular combinations to sink the wages of labour even below this rate. These are always conducted with the utmost silence and

> secrecy till the moment of execution; and when the workmen yield, as they sometimes do without resistance, though severely felt by them, they are never heard of by other people.' (WON, I, VIII).

Smith disliked market distortions more generally, particularly import restrictions, which he believed led to the creation of domestic monopolies and reduced competition. These monopolies while beneficial to some interest groups, did not benefit the nation as a whole. The biggest issue that Smith had was that government intervention could distort markets and create incentives, and that it was uncertain whether the 'artificial direction is likely to be more advantageous to the society than that into which it would have gone of its own accord'. Without government interference Smith saw capital (investment) being allocated according to where the owners of capital saw best fit:

> 'As every individual, therefore, endeavours as much as he can, both to employ his capital in the support of domestic industry, and so to direct that industry that its produce maybe of the greatest value; every individual necessarily labours to render the annual revenue of the society as great as he can. He generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it. By preferring the support of domestic to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain; and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest, he frequently promotes that of the society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the public good. It is an affectation, indeed, not very common among merchants, and very few words need be employed in dissuading them from it.' (WON, IV, ii).

This is the famous passage referring to 'an invisible hand' of the market. Ironically, the 'invisible hand' that Smith is now equated with was only mentioned once in *The Wealth of Nations*, although so much has been built around this powerful image. But given the possibility of collusion both within and across industries it was sometimes necessary to regulate competition in some way.

What is seldom mentioned is that the metaphor of 'an invisible hand' first graced the pages of *The Theory of Moral Sentiments*, yet modern economics has largely distanced itself from this original context. Smith first invoked the metaphor of an 'invisible hand' as the mechanism that 'advance the interest of the society'. Smith saw this as a way that society had ordered itself through the actions of the poor to emulate the rich as this had led to:

> 'It is this deception [that the poor can emulate the rich in achieving convenience] which rouses and keeps in continual motion the industry of mankind.

> It is this which first prompted them to cultivate the ground, to build houses, to found cities and commonwealths, and to invent and improve all the sciences and arts, which ennoble and embellish human life; which have entirely changed the whole face of the globe, have turned the rude forests of nature into agreeable and fertile plains, and made the trackless and barren ocean a new fund of subsistence, and the great high road of communication to the different nations of the earth. The earth by these labours of mankind has been obliged to redouble her natural fertility, and to maintain a greater multitude of inhabitants... They consume little more than the poor, and in spite of their natural selfishness and rapacity, though they mean only their own conveniency, though the sole end which they propose from the labours of all the thousands whom they employ, be the gratification of their own vain and insatiable desires, they divide with the poor the produce of all their improvements. They are led by an invisible hand to make nearly the same distribution of the necessaries of life, which would have been made, had the earth been divided into equal portions among all its inhabitants, and thus without intending it, without knowing it, advance the interest of the society, and afford means to the multiplication of the species (Smith 1756, *TMS*, Part iv, Chapter i).

In sum, it was an 'invisible hand' that Smith envisaged was what drove economic growth and overcame limits. Note, in both the TMS and WON Smith refers to 'an invisible hand' and not 'the' invisible hand.[3]

3 Generational and Intergenerational Justice in the *Wealth of Nations*

Some have been critical of the originality of the *Wealth of Nations*, arguing that the main achievement of Smith was in synthesising a wide range of perspectives into a coherent body of thought for the first time (Barber 1967). Yet, one of the biggest changes in the twentieth century has been the re-appreciation of Adam Smith the moral philosopher. Writing at the 150th anniversary of the *Wealth of Nations*, Bonar (1926) completely disregarded the *Theory of Moral Sentiments* and argued that the 'memory was kept alive' because of the success of the *Wealth of Nations*. This view was shared by Barber (1967) who dismissed

[3]The adoption of a *definite* instead of an *indefinite* article to represent the concept of an invisible hand changes the connotation of the idea. With the definitive article, 'the invisible hand' as the canonical phrase symbolises the self-regulating nature of markets or systems, whereas the indefinite article, 'an invisible hand', suggests less certainty in the self-regulating nature of markets and that the outcome is not a realised in all cases. This is an important distinction when it comes to competition policy: the former implies market outcomes are best and minimal interference is necessary, while the latter suggests an element of regulatory oversight may be required. The use of 'an' continued in Edwin Cannan's 1904 compilation of the fifth edition of the *Wealth of Nations*, where Cannan highlighted the various changes that occured in the editions 1 to 5 (most edits had been minor 'such as 'is' for 'it,' 'that' for 'than,' 'becase' for 'because"). Thus, the choice of 'an' and not 'the' in both works written close to two decades apart was a purposeful decision by Smith.

the *Theory of Moral Sentiments* as having had, 'little distinction as a contribution to philosophy'. Whereas Backhouse (2002) and Mochrie (2024) see the arguments that were developed in the *Theory of Moral Sentiments* as being pivotal in Smith's understanding of markets and capital formation. The shift in appreciation came around the bicentenary of the publication of the *Wealth of Nations*; for example, Hutchinson (1976) placing emphasis on the intellectual journey of Smith as a moral philosopher, with *Theory of Moral Sentiments* a key part of Smith's identity.

The dismissal of the *Theory of Moral Sentiments* by Barber is not surprising as many economists have seen the two as unrelated works. Indeed, criticism of Smith tends to also overlook the *Theory of Moral Sentiments*. For example, at the bicentennial of the *Wealth of Nations*, Franklin (1976) argued that Smith had a 'pernicious legacy', but here it is clear that Franklin has had a narrow reading of Smith from the *Wealth of Nations* and not what is elaborated in the *Theory of Moral Sentiments*. There is a clear connection, as was illustrated by the use of both the *Theory of Moral Sentiments* and the *Wealth of Nations* in the work of Rawls (1971) and Sen (2009).

There was thus a clear link between both of Smiths works as he made clear in the preface of the sixth (and final) edition of the *Theory of Moral Sentiments* where he reflected on how he had promised to write on the principles of law and government and the 'different revolutions' that society had undergone in terms of justice and 'what concerns police, revenue and arms, and whatever else is the object of the law'. Smith said he had 'partially executed his promise' in the *Wealth of Nations* and had hoped to continue it but he was already at an advanced age at that point.

Underpinning the *Wealth of Nations* was a framework of justice, without which society would collapse (Backhouse 2002). One of the most famous quotations from the *Wealth of Nations* relates to 'natural liberty', but what is equally important is the adherence to the 'laws of justice':

> 'All systems, either of preference or of restraint, therefore, being thus completely taken away, the obvious and simple system of natural liberty establishes itself of its own accord. Every man, as long as he does not violate the laws of justice, is left perfectly free to pursue his own interest his own way, and to bring both his industry and capital into competition with those of any other man, or order of men.' (WON, IV, c ix).

Justice was seen as one of the essential roles of the state in Book V of the *Wealth of Nations*, the other roles being national defence and the provision of public goods and institutions. Notably, as Sen (2016) highlights, these are the roles that are not performed by the free market. These roles Smith argues are for the 'general benefit of the whole society'. Sen (2016) describes Adam Smith's view of development as 'market-inclusive' because Smith recognized a role for the state, particularly in providing education. This aligns with Sen's own perspective, in which development involves building human capabilities to enable participation in a growing economy.

What Smith implied by justice is clearly laid out in the *Theory of Moral Sentiments*. Justice is central to Smithian thought as it 'is the main pillar that upholds the whole edifice [of society]. If it is removed, the great, the immense fabric of human society, that fabric which to raise and support seems in this world, if I may say so, to have the peculiar and darling care of Nature, must in a moment crumble to atoms' (TMS, Part II, Section II, Chapter 3).

Smith saw justice as a negative virtue because society does not reward good behaviour, it only punishes infractions on liberty. For positive virtues, 'we may often fulfil all the rules of justice by sitting still and doing nothing' (TMS, Part II, Section II, Chapter 1). While Smith was an advocate for liberty, this was not to come at the expense of wider society. Noting that, 'though every man may according to the proverb, be the whole world to himself, to the rest of mankind he is a most insignificant part of it. Though his own happiness may be of more importance to him than that of all the world besides, to every other person it is of no more consequence than that of any other man.' Justice for the individual, therefore, cannot be greater than society.

Smith outlined a framework for judging one's actions based on the perception of an 'impartial spectator' and that to 'disturb the happiness' of others because it stands it the way of our own would be intolerable to the impartial spectator (TMS, Part II, Section I, Chapter 1). Smith had a clear hierarchical structure to justice, with the greater the crime the worse the punishment. Murder 'is the most atrocious of crimes', followed by theft and breach of property, the latter were greater crimes than breach of contract. It is through the application of justice:

> 'that man, who can subsist only in society, was fitted by nature to that situation for which he was made. All the members of human society stand in need of each others assistance, and are likewise exposed to mutual injuries. Where the necessary assistance is reciprocally afforded from love, from gratitude, from friendship and esteem, the society flourishes and is happy. All the different members of it are bound together by the agreeable bands of love and affection, and are, as it were, drawn to one common centre of mutual good offices.' (TMS, Part II, Section II, Chapter 3).

Justice was of great importance to society and injustice could potential destabilise and 'destroy society' (TMS, Part II, Section III, Chapter 3). Negligence, stemming from an absence of care regarding all possible outcomes of an individual's action, were a key concern. For example, 'a person [who] happens to occasion some damage to another, he is often by the law obliged to compensated it... [As] nothing, we think, can be more just than that one man should not suffer by the carelessness of another; and that the damage occasioned by blamable negligence should be made up by the person who was guilty of it.' (TMS, Part II, section III, Chapter 3; Part II, Section III, Chapter 2). This is reminiscent of what we think of today as a negative externality, a public cost arising from a private gain.

This line of thinking was continued in the *Wealth of Nations*. As highlighted by Ogilvie (2025), Smith also alludes to externalities: ‘when those exertions of natural liberty of a few individuals, might endanger the security of the whole society, are, and ought to be, restrained by the laws of all governments’ (WON, II ii). That is negative externalities were an example of costs arising from market based activities. In *Wealth of Nations*, the context of the discussion was in relation to the issue of bank notes by private-banks but Smith also thought it was analogous to the ‘building party walls’ to prevent the spread of fire. In another example, Smith used the example of controls of infectious disease through a restriction of natural liberty (by quarantining individuals or restrictions on markets), ‘though, perhaps, no other public good might result from such attention, besides the prevention of a public evil’ (WON, I, i part III). Thus, it was clear that private benefit should not come at the expense of the social good. While Smith’s views of justice have been criticised as being too thin, as they do not consider broader welfare, others see Smith’s views as having wider applicability (Otteson 2017).

Smith’s idea of justice was challenged by Rawls (1971), one of the most influential texts on justice in modern times. In setting out his theory of justice, Rawls sought to distinguish his approach from the utilitarian tradition that had come before him, and he grouped Smith (and Hume) in with utilitarians such as Bentham and Mill. While Smith does place weight on utility, this was not the primary basis for action and, in this sense, Smith is closer in thinking to earlier classical thinkers (Gill 1976). Or, as McCloskey (2008) argues, Smith was a virtue ethicist. Moreover, Smith’s work on moral theory has tended to be analysed in isolation from his canonical text on political economy, but together they help inform the other and helps to reconcile Smithian and Rawlsian theories of justice (Cowen 2021).

One important aspect of Rawls work was an idea of intergenerational justice and a ‘just savings principle’ whereby each generation makes a contribution towards future generations and subsequent generations receive a bequest from their predecessors. Rawls (1999) revised his theory of just saving in an attempt ‘to make it clearer’, but the essence of Rawls explanation of intergenerational justice remains the same:

> ‘Each generation must not only preserve the gains of culture and civilization, and maintain intact those just institutions that have been established, but it must also put aside in each period of time a suitable amount of real capital accumulation. This saving may take various forms from net investment in machinery and other means of production to investment in learning and education.’ (Rawls 1971, 1999).

There are no guidelines for how this intergenerational accumulation and distribution of real wealth should be allocated but Rawls does provide some ethical constraints. Rawls contrasts a utilitarian view with his own view of contracts. In the utilitarian view, future generations may have higher wellbeing if capital accumulation and technological improvements lead to improved conditions in the future (and an ability to support a larger population). Therefore, higher savings in the poorer generations could disadvantaged them. Rawls then compares the utilitarian approach to the contract approach, or the 'veil of ignorance', where people do not know what generation they belong too. In that context it is better to develop a consistent savings rule as every generation, apart from the first, would gain if a 'reasonable rate of saving is maintained' (Rawls 1971, 1999).

The Rawls interpretation of justice is very similar to one of the most influential interpretations of sustainable development, Brundtland Commission (1987), which stated that: 'sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.' While Rawls is not cited in the Brundtland report, the Brundtland definition has a clear Rawlsian fingerprint.

The Rawlsian approach to intergenerational justice has also influenced how economists have approached the issue. Both Arrow (1973) and Solow (1974), two key figures in how economists have thought about the idea of sustainability, explicitly draw on a Rawlsian approach to analyse intergenerational allocation of resources. Arrow focuses primarily on capital as conventionally defined whereas Solow expanded the definition of capital and also includes finite natural resources. Solow also operationalised the Rawlsian approach as maintaining constant consumption per capita across generations. The application of Rawls' ethical approach adds greatest nuance when the role of non-renewable natural resources are considered as this creates a challenge when trying to balance constant consumption per capita in perpetuity when resources are finite. Ultimately, in the case of non-renewable natural, technological progress is the saviour, because, as Solow notes, 'unlimited technological progress may be unlikely, but it is not, like unlimited population growth on a finite planet, absurd'. This proves to be key to Solow's application of Rawlsian intergeneration justice, but one of the problems is that it is maintained by the assumption of perfect substitution between physical and natural capital. Following Solow, the economist John Hartwick (1977) showed how intergenerational equity could be achieved by a savings/investment rule whereby, 'investment all net returns from exhaustible resources in reproducible capital'. This is what Solow (1986) later referred to as a the 'Hartwick Rule'.

Sen (2009), who sees his own work in the tradition of Smith and other enlightenment thinkers, indicates that Adam Smith was aware that there are 'several different meanings' of justice (TMS, Part IV, Section II, Chapter 1). Sen (2009) draws on traditions of Indian jurisprudence to make a distinction between *niti* and *nyaya*; the former is the 'organisational propriety and behavioural correctness' of justice, while *nyaya* refers to 'realised justice'. The example that Sen uses to illustrate the distinction is the declaration of, 'Fiat justitia, et pereat mundus' by the Holy Roman Emperor Ferdinand I. This translates as, 'let justice be done, and let the world perish' making it an extreme example. There is clear *niti* but the consequences in terms of justice is catastrophic. In terms of applicability of *niti* and *nyaya*, Sen sees Rawlsian justice as a form of *niti* while Smith and other enlightenment thinkers are more in the *nyaya* approach.

In terms of sustainability, Sen defers to Solow particularly praising his contribution to the field of sustainability especially as Sen believed that Solow applied the conceptualisation of sustainable development from the Brundtland committee to economics; or rather he applied Rawlsian concepts. However, the original influence was Rawls (1971) *Theory of Justice* and Solow's later work (1974 and 1986) pre-dated the Brundtland Commission, so it was in fact applied Rawlsian concepts that is at the core of sustainable development and the economic approaches to it. Sen, however, applies a broader approach, that sustainable development should refer to 'without compromising the *capability* of future generations'. Here then we return to 'just saving', because it is by maintaining capital (broadly defined) that we can provide future generation with the capability to develop. This inclusive capabilities based definition is therefore a compromise of Smithian and Rawlsian concepts of justice.

The connection to the *Wealth of Nations* lies in the broader ethical and social framework that underpins Smith's thinking on competition. Concepts such as justice, as articulated by Smith, and 'just saving', as articulated by Rawls, imply responsibility to account for the wider societal impacts of economic actions. Externalities should be taken into consideration in the present ('Nothing, we think, can be more just than that one man should not suffer by the carelessness of another') but combined with the intergenerational perspectives drawn from thinkers like Rawls, Solow, and Sen, this view suggests that competition policy should not only maximize current welfare but also safeguard the welfare of present and future generations. In this sense, traditional competition policy, typically focused on present-day efficiency and consumer welfare, is extended to include long-term, intergenerational justice. Therefore, alongside considering present generations, competition policy must also ensure that equity for a 'just' outcome for future generations is included in assessing cooperative agreements. In this sense there need not be an incompatibility between a focus on the present or future generations if the criterion is to ensure a just outcome.

This section has shown that recent calls to broaden the remit of competition authorities towards societal and economic reform are rooted in a long-standing tradition of moral and economic thought developed by some of the discipline's leading thinkers. In essence, they reflect an evolving understanding of intertemporal justice and welfare. Yet for competition policy to move in this direction, normative claims alone are not sufficient. It requires a robust theoretical foundation capable of providing operational guidance. Recent work has taken steps toward formalising sustainability as a policy criterion. To these contributions we turn next.

4 The Sustainability Criterion and Cooperative Investment Agreements

To evaluate whether an investment is sustainable, or rather if a 'just saving' criterion is achieved, we propose a framework based on the work of Arrow, Dasgupta, Mäler, and colleagues (Arrow et al. 1995; Dasgupta and Mäler 2000; Dasgupta 2001; Arrow et al. 2003; Arrow et al. 2004) and Hamilton and practitioners at the World Bank on the other (Hamilton 2000, 2002; Hamilton and Clemens 1999). These, in turn, are based on the aforementioned Rawlsian (1971) view of 'just saving' as operationalised by Arrow and Solow (Hanley et al. 2015).

Welfare is central to this framework. The criterion of 'just saving' is so that the welfare of society is maintained over time. It is also intuitive, as it rests on the widely accepted principle that current decisions should not compromise the well-being of future generations. The framework provides a theoretically grounded basis for assessing sustainability (Polasky et al. 2015). This principle is reflected in the above cited definition of sustainable development put forward by the Brundtland Commission (WCED, 1987) but also the inclusive capabilities definition proposed by Sen (2009).

Analytically, the framework encompasses an intertemporal welfare function, V_t, which captures the present value of the stream of utility derived from consumption over time. By consumption we refer to a broad or *inclusive* concept that encompasses not only the consumption of goods and services, but also the enjoyment of recreational activities, environmental quality, and other non-market contributors to well-being. In this context sustainability implies that V_t must not decline over time. This is the sustainability criterion introduced by Arrow et al. (2004), which is satisfied when proposed *inclusive* investments lead to a development path along which intertemporal welfare is maintained or improved. This framework is analogous to welfare as used in competition policy, albeit with a more inclusive and dynamic interpretation.

Formally, the intertemporal welfare function is defined as

$$V_t = \int_t^{\infty} U\left(C(\tau)\right) e^{-\delta(\tau-t)} ds, \tag{1}$$

where V_t is the intertemporal social welfare at time t, $C(\tau)$ denotes inclusive consumption of the entire society at time τ (where $\tau \geq t$), $U(\cdot)$ is the instantaneous utility function, and δ the social rate of pure time preference.

The level of V_t depends on the society's productive base at time t, which includes man-made capital (e.g., infrastructure and equipment), natural capital (e.g., ecosystems, air, and water), human capital (e.g., health and education), knowledge (both technological and organisational), and institutions (e.g., laws, norms, and market structures). Institutions can be treated either as distinct capital assets or as the underlying systems that govern the allocation and use of other assets. For simplicity, here we follow Dasgupta (2001) and Arrow et al. (2004) which adopt the latter interpretation. Crucially, the framework recognises that consumption, $C(\tau)$, depends on the vector of capital stocks $K(\tau) = (K_1(\tau), K_2(\tau), \ldots, K_n(\tau))$. As a result, the intertemporal welfare function depends indirectly on the evolving stock of capital assets $i = 1, \ldots, n$ over time.

Formally applying the sustainability criterion, this requires that intertemporal welfare must not be falling at the moment of evaluation, that is

$$\frac{dV_t}{dt} \geq 0. \tag{2}$$

This is a point-in-time condition, i.e., it does not require that V_t always increases or never decreases in the future; only that it is non-decreasing at time t. To operationalise this condition, we can relate changes in V_t to changes in the capital assets on which it depends

$$\frac{dV_t}{dt} = \sum_{i=1}^{n} \frac{\partial V_t}{\partial K_{it}} \frac{dK_{it}}{dt}. \tag{3}$$

This leads to the concept of inclusive investment, or in our context sustainable investment, defined as the total change in the productive base weighted by the shadow price of each asset, $p_{it} = \partial V_t / \partial K_{it}$,

$$\frac{dV_t}{dt} = \sum_{i=1}^{n} p_{it} \frac{dK_{it}}{dt}. \tag{4}$$

Following (2), the sustainability criterion is satisfied if the expression in (4) is non-negative. In other words, social welfare is on a non-decreasing path if the aggregate value of changes in all capital assets, evaluated at their shadow prices, is non-negative. In Adam Smith terms, whether inclusive wealth is non-declining.

This framework provides theoretical guidance for assessing the sustainability of private investments. Consider, for instance, a firm engaged in intensive poultry farming that proposes to replace an existing facility with a new production site designed to significantly improve animal welfare. The new infrastructure constitutes an increase in man-made capital. The environmental impact may be lower than that of the old facility and could be further mitigated through improved waste management systems, potentially resulting in only modest reductions in natural capital. Furthermore, alignment with enhanced animal welfare standards may strengthen the firm's reputational and institutional capital, particularly when these standards are in line with prevailing social norms and consumer preferences. If society assigns a positive value to the improved treatment of chickens, the associated welfare gains may be regarded either as a component of natural capital or as a direct contribution to inclusive consumption. Provided that shadow prices adequately reflect these valuations, and the aggregate shadow-value-weighted change in capital is non-negative, the investment would qualify as sustainable within this framework.

Now consider the application of this criterion as a guide for competition authorities that are serious about sustainability and wish to assess whether horizontal cooperation between firms, actions that might otherwise considered anticompetitive, can be justified on sustainability grounds, in line with the modified article 101 of the TFEU (European Commission 2023). While such coordination may entail a reduction in price competition and lower consumer surplus, the question is whether the net effect of the agreement, evaluated through its impact on the productive base of the economy, leads to an increase in intertemporal welfare. If the agreement can be shown to generate non-negative *sustainable* investment, then horizontal cooperation may be compatible with long-run social welfare objectives.

For instance, consider the case of several manufacturers in the cement industry jointly agreeing to adopt a low-carbon production technology. The technology in question is more expensive than existing alternatives and would not be profitable for any single firm to adopt unilaterally, given the competitive pressure from firms still operating with conventional methods. Cooperation would likely lead to higher prices (at least in the short term), hence a reduction in consumer surplus. From a narrow competition law perspective this may be viewed as a restriction of competition. However, the proposed joint action may also change various assets in ways that merit a more careful assessment. The new production processes involve substantial investment in new equipment and retrofitting, which increases man-made capital. Importantly, the adoption of low-carbon technology reduces emissions significantly, leading to an improvement in natural capital, particularly in the form of lower greenhouse gas concentrations and associated ecological benefits. Human capital may also be positively affected through the training of workers in the new technology and the development of technical expertise. Moreover, the coordinated nature of the agreement may improve institutional capital if it is seen to foster long-term planning, and alignment with public sustainability goals.

What this framework shows is that these effects are not captured in conventional measures of consumer surplus but are essential components of inclusive wealth. In other words, reliance on market prices and conventional measures of consumer surplus alone provides at best a partial and potentially misleading assessment of consumer welfare if competition authorities intend to take sustainability seriously. A competition authority applying the sustainability criterion would instead evaluate whether there is an aggregate change in *total wealth* using shadow prices that reflect the true social value of all forms of capital, including environmental and human assets.

Crucially, this framework not only offers conceptual clarity but also forces a clearer understanding of the consequences of embracing sustainability for competition authorities in evaluating and assessing cooperative agreements. On one hand, it provides a more consistent and rigorous foundation for evaluating sustainability than the current case by case approach. On the other, as Arrow and colleagues note, its implementation is empirically demanding, estimating shadow prices for non-market assets and tracking their evolution across time and policy scenarios is a significant challenge (Dasgputa 2001; Arrow et al. 2003; Polasky et al. 2015).

A particularly acute empirical challenge arises from the limited knowledge about how substitutable different capital assets truly are. In mathematical terms, the shadow price $p_{it} = \partial V_t / \partial K_{it}$ reflects the marginal contribution of asset K_i to intergenerational welfare V_t. If other assets cannot substitute for K_i, even small declines in its quantity can cause large losses in welfare, which means the partial derivative, and thus the shadow price, rises steeply. In the extreme case of zero substitutability (i.e., essential assets), this value can approach infinity. Moreover, these dynamics are often shaped by non-linearities, threshold effects, or irreversibilities that are poorly understood or difficult to model (Arrow et al., 2004). For example, if natural ecosystems that regulate the climate (such as tropical forests or oceanic carbon sinks) degrade past a certain tipping point, their lost function may not be recoverable or substitutable by technological means.

This theoretical framework ultimately raises a broader and more fundamental question: are competition authorities genuinely prepared to move in this direction, one that demands the systematic integration of sustainability into their analytical foundations in a rigorous and transparent way, while also confronting difficult empirical challenges such as the estimation of shadow prices?

5 Concluding Remarks

Competition policy involves the collection of regulations and laws designed to prevent restrictions on market competition that could lower overall economic welfare (Motta 2004). However, beyond protecting total economic surplus—comprising producer and consumer surplus—there is a shift of using competition policy as a tool to encourage investment in sustainability initiatives by firms and industries with the objective to generate wider public benefits (European Commission 2023). This implies that the standard economic welfare concept is implicitly being broadened to account for environmental quality, or any other social benefit that accrues to the wider public as a result of sustainability investments. This can include reductions in polluting emissions, improvement in biodiversity, 'green' R&D, acceleration of energy transition, or any other effort targeted at sustainability improvements under the broad header of (credible and effective) corporate social responsibility.

This growing focus on sustainability has introduced an expanded role for competition policy. One concrete arrangement allowed under competition policy is that of horizontal agreements where competing firms are permitted to cooperative collude on sustainability investments so long as consumers can reap a 'fair' share of the (expected) public benefits to be generated. A critical aspect in evaluating such cooperative agreements is determining what constitutes sustainability improvements. Relatedly, investments typically take time to materialize, implying that the public benefits may not be instantaneous. That is, future welfare as well as current welfare is relevant and would need to be taken into account in any investment project evaluation. In this paper, we show how an inclusive wealth framework incorporates the capital stock over time. As such, this framework can support competition authorities in assessing to what extent (horizontal) cooperative agreements can meet the fundamental sustainability criterion ensuring that current generation's resource use does not compromise future generation's ability to meet their needs.

Through an intergenerational lens, an inclusive wealth approach towards measuring sustainability embeds an ethical dimension into assessing market functioning, underscoring Adam Smith's emphasis on justice, market failure and the State's role in providing and sustaining public goods. In *The Wealth of Nation*s, Smith identifies justice as the foremost duty of the State, where justice involves preventing harm (e.g., external effects) to individuals and society, and ensuring that those responsible for harm are held accountable. This directly aligns the idea of sustainability fairness across generations. In *The Theory of Moral Sentiments*, Smith argues that negligence that causes external effects (harm) must be compensated to restore justice. This aligns sustainability with the 'polluter pay' principle, hence fostering fairness. One approach could be to draw more on the virtue ethics approach of Smith and to think in terms of an 'impartial spectator' as though they were either to judge based on the inclusive welfare of future generations; or the inclusive welfare today rather than on conventional traditional consumer welfare or total welfare (i.e., lower prices are preferred but these prices often exclude the external costs of the goods and services consumed and produced).

Without robust sustainability criteria, the application of competition policy risks the introduction of other market distortions. A growing body of literature on horizontal sustainability agreements does not only show that more directed investments are not guaranteed (e.g., Schinkel and Treuren 2021), but also that it may 'spill over' to higher prices (e.g., Cason et al. 2025). This begs the question whether competition policy is adequately equipped as a tool to address sustainability or environmental externalities? Whether it is wise to use competition policy as 'quasi' environmental policy tool to internalise negative externalities is highly questionable and subject to increasing academic and policy debate. We argue that if competition policy is to be used in this way, it requires a more rigorous analytical foundation; one that makes the trade-offs between strict consumer price protection and broader societal welfare more transparent. For instance, by clarifying that, in some cases, higher prices may be a necessary condition for delivering long-term sustainability gains. Rather than keeping these tensions implicit, policy should confront them openly allowing for a more informed reflection on whether the antitrust regulatory framework is the appropriate tool for addressing them. In this regard, the inclusive wealth framework offers a valuable starting point.

References

[1] ACM (2013), Analysis of the Planned Agreement on Closing Down Coal Power Plants from the 1980s as Part of the Social and Economic Council of the Netherlands' SER Energy Agreement, [Energieakkoord].

[2] Arrow, K.J. (1973), Rawls's principle of just saving, *The Swedish Journal of Economics* 75(4), 323-335.

[3] Arrow, K.J., Bolin, B., Costanza, R., Dasgupta, P., Folke, C., Holling, C. S., Jansson, B.-O., Levin, S., Mäler, K.-G., Perrings, C., and Pimentel, D. (1995), Economic growth, carrying capacity, and the environment, *Science* 268, 520-521.

[4] Arrow, K.J., Dasgupta, P., and Mäler, K.-G. (2003), Evaluating projects and assessing sustainable development in imperfect economies, *Environmental and Resource Economics* 26(4), 647–685.

[5] Arrow, K., Dasgupta, P., Goulder, L., Daily, G., Ehrlich, P., Heal, G., Levin, S., Mäler, K.-G., Schneider, S., Starrett, D. and Walker, B. (2004), Are we consuming too much?, *Journal of Economic Perspectives* 18(3), 147-172.

[6] Backhouse, R.E. (2002), *The Penguin History of Economics*, London: Penguin.

[7] Barber, W.J. (1967), *A History of Economic Thought*, Middlesex: Penguin.

[8] Bietti, E. (2025), Rawlsian Antitrust, Northeastern University School of Law Research Paper No. 461 (revised 2025).

[9] Bonar, J. (1926), The Theory of Moral Sentiments by Adam Smith, 1759. *Journal of Philosophical Studies* 1(3), 333-353.

[10] Cason, T.N., Kiso, T. and de Vries, F.P. (2025), Price competition and cooperation on sustainable investments, Working Paper, Purdue University.

[11] Cowen, N. (2021), Basic economic liberties: John Rawls and Adam Smith reconciled. The Independent Review, 26 (2): 263–285.

[12] Dasgupta, P. (2001), *Human Well-Being and the Natural Environment*, Oxford University Press, Oxford and New York.

[13] Dasgupta, P., and Mäler, K.-G. (2000), Net national product, wealth, and social well-being, *Environment and Development Economics* 5(2), 69–93.

[14] Ducci, F. and Trebilock, M. (2019), The revival of fairness discourse in competition policy, *The Antitrust Bulletin* 64(1), 79-104.

[15] European Commission (1999), Commission Decision of 24 January 1999 relating to a proceeding under Article 81 of the EC Treaty (Case IV.F.1/36.718 — CECED). Official Journal of the European Communities, L 187, 12–20.

[16] European Commission (2001), Commission Approves Agreements to Reduce Energy Consumption of Dishwashers and Water Heaters, IP/01/1659, Brussels, 26 November.

[17] European Commission (2023), Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements, Official Journal of the European Union.

[18] Ezrachi, A., Zac, A., and Decker, C. (2023), The effects of competition law on inequality—an incidental by-product or a path for societal change?, *Journal of Antitrust Enforcement* 11(1), 51-73.

[19] Franklin, R.S. (1976), Smithian economics and its pernicious legacy, *Review of Social Economy* 34(3), 379-389.

[20] Friedman, M. (1962 [2002]), *Capitalism and Freedom*, 40th anniversary edition, University of Chicago Press, Chicago.

[21] Friedman, M. (1970). A Friedman doctrine–The Social Responsibility of Business Is to Increase Its Profits, New York Times Magazine, 13 September 1970.

[22] Gill, E. R. (1976). Justice in Adam Smith: The right and the good. Review of Social Economy, 34(3): 275-294.

[23] Hamilton, K. (2000), Genuine saving as a sustainability indicator, Working Paper, Environment Department, World Bank.

[24] Hamilton, K. (2002), Savings rules and sustainability, Working Paper, Environment Department, World Bank.

[25] Hamilton, K., and Clemens, M. (1999), Genuine savings rates in developing countries, *World Bank Economic Review* 13(2), 333–356.

[26] Hanley, N., Dupuy, L., and McLaughlin, E. (2015), Genuine savings and sustainability, *Journal of Economic Surveys* 29(4), 779-806.

[27] Hartwick, J. (1977), Intergenerational equity and the investing of rents from exhaustible resources, *American Economic Review* 67(5), 972-974.

[28] Hutchison, T. (1976), Adam Smith and the wealth of nations. The Journal of Law and Economics, 19(3), 507-528.

[29] Kloosterhuis, E. and Mulder, M. (2015), Competition law and environmental protection: The Dutch agreement on coal-fired power plants, *Journal of Competition Law & Economics* 11(4), 855–880.

[30] Kurz, H.D. (2016), Adam Smith on markets, competition and violations of natural liberty, *Cambridge Journal of Economics* 40(2), 615-638.

[31] Matson, E. (2020), A Brief History of the Editions of the TMS; Part 2, Adam Smith Works.

[32] McCloskey, D. (2008), Adam Smith, the last of the former virtue ethicists, *History of Political Economy* 40(1), 43–71.

[33] McLaughlin, E. (2026), *The Inclusive Wealth of Nations*, Bloomsbury, London.

[34] Motta, M. (2004), *Competition Policy: Theory and Practice*, Cambridge University Press, New York.

[35] NMa (2003), NMa Fines Shrimp Wholesalers and Shrimp Fishery Industry Due to Price Agreements.

[36] OECD (2015), Competition Law and Responsible Business Conduct, OECD, Paris.

[37] OECD (2024), Global Forum on Competition. Session 1: Competition and Inequality (Background note by Eleanor M. Fox), DAF/COMP/GF(2024)5.

[38] Ogilvie, S. (2025), *Controlling Contagion: Epidemics and Institutions from the Black Death to Covid*, Princeton University Press, Princeton.

[39] Otteson, J.R. (2017), Adam Smith on justice, social justice, and ultimate justice, *Social Philosophy and Policy* 34(1), 123-143.

[40] Pike, C. (2021), *Rawlsian Antitrust*, CPI Antitrust chronicle.

[41] Pörtner, H.-O. et al. (2023), Overcoming the coupled climate and biodiversity crises and their social impacts, *Science* 380, eabl4881.

[42] Rawls, J. (1971), *A Theory of Justice*, Harvard University Press, Cambridge, MA.

[43] Rawls, J. (1999), *A Theory of Justice*, revised edition, Harvard University Press, Cambridge, MA.

[44] Rockström, J. et al. (2023), Safe and just Earth system boundaries, *Nature* 619(7968), 102-111.

[45] Salvadori, N. and Signorino, R. (2014), Adam Smith on monopoly theory: Making good a lacuna, *Scottish Journal of Political Economy* 61(2), 178-195.

[46] Schinkel, M.P. and Y. Spiegel (2017), “Can Collusion Promote Sustainable Consumption and Production?” International Journal of Industrial Organization, 53: 371-398.

[47] Schinkel, M.P., Y. Spiegel and Treuren, L. (2022), Production agreements, sustainability investments, and consumer welfare, *Economics Letters*, 216: 110564.

[48] Schinkel, M. P. and Treuren, L. (2021), Green antitrust: Friendly fire in the fight against climate change. In Holmes, S., Middelschulte, D., and Snoep, M. (editors), *Competition Law, Climate Change & Environmental Sustainability*, Concurrences.

[49] Schinkel, M.P. and Treuren, L. (2024), Corporate social responsibility by joint agreement, *Journal of Environmental Economics and Management* 123: 102897.

[50] Sen, A. (2009), *The Idea of Justice*, Harvard University Press, Camrbridge MA.

[51] Sen, A. (2010), Adam Smith and the contemporary world, *Erasmus Journal for Philosophy and Economics* 3(1), 50-67.

[52] Sen, A. (2016), Adam Smith and Economic Development. In Hanley, R.P. (editor), *Adam Smith: His Life, Thought, and Legacy*, Princeton University Press, Princeton.

[53] Shapiro, C. (2021), Antitrust: What went wrong and how to fix it, *Antitrust* 35(3), 33-45.

[54] Smith, A. (1790), *The Theory of Moral Sentiments*, 6th edition.

[55] Smith, A. (1776), *An Inquiry into the Nature and Causes of the Wealth of Nations*, Edited with an introduction and notes by Kathryn Sutherland (1993), Oxford World's Classics, Oxford University Press, Oxford.

[56] Smith, D.C. (2025), The intellectual history of Milton Friedman's criticism of Corporate Social Responsibility, Modern Intellectual History, 22 (1-2), 184-210.

[57] Solow, R.M. (1974), Intergenerational equity and exhaustible resources, *Review of Economic Studies* 41, 29-45.

[58] Solow, R.M. (1986), On the intergenerational allocation of natural resources, *Scandinavian Journal of Economics* 88 (1), 141-149.

[59] Solow, R.M. (1993), An almost practical step toward sustainability, *Resources Policy* 19(3), 162-172.

[60] Stiglitz, J.E. (2017), Towards a broader view of competition policy. In Bonakele, T., Fox, E. and Mncube, L. (editors), *Competition Policy for the New Era: Insights from the BRICS countries*, Oxford University Press, Oxford.

[61] Veljanovski, C. (2022), Collusion as environmental protection—-An economic essessment, *Journal of Competition Law and Economics* 18(3), 523-550.

[62] Vickers, J. (2025), Competition policy and the consumer welfare standard, *Journal of Antitrust Enforcement* 13(1), 6-16.

[63] WCED (1987), *Our Common Future*, World Commission on Environment and Development, Oxford University Press, Oxford.

[64] World Bank (2024), *The Changing Wealth of Nations 2024: Revisiting the Measurement of Comprehensive Wealth*, World Bank Group, Washington, D.C.