

Environmental Audit Committee inquiry into Aligning the UK's Economic Goals with Environmental Sustainability

The Institute and Faculty of Actuaries (IFoA) is a royal chartered, not-for-profit, professional body. We represent and regulate over 32,000 actuaries worldwide, and oversee their education at all stages of qualification and development throughout their careers.

Past economic growth has relied on running down natural capital^{1,2} and therefore measurement of economic growth has been overstated by not taking this impact into account. This implies extrapolating past growth trends into the future may be unreliable. In addition, the risks associated with destruction of the environment and loss of biodiversity are hard to quantify due to their long-term, uncertain and intangible nature. Therefore, biodiversity risk, alongside climate risk, represents a systemic risk to the economy, both with regards direct physical risks as well as transition risks³.

Given the likely extent of these material risks, the Institute & Faculty of Actuaries welcome the opportunity to respond to the call for evidence by the Environmental Audit Committee on aligning the UK's economic goals with environmental sustainability. Actuaries are experts in modelling the financial impacts of potential future scenarios and in identifying risks. Over the past two years, the Institute has set up a Biodiversity & Natural Capital Working Party which has collated evidence and hosted discussions across the profession to solicit a better understanding of biodiversity risk. This sits alongside a wider set of work on the need to reform economic theory and approaches to better enable a transition to a more sustainable economy.

We focus our responses on the following questions and offer the following headline responses:

¹ Brandt, N., Schreyer, P. & Zipperer, V. (2017), Productivity Measurement with Natural Capital, Review of Income and Wealth, 63, S7– S21

² England, R.W., (2000), Natural capital and the theory of economic growth, Ecological Economics, 34 (3), 425-431

³ PRA, (2019), Enhancing banks' and insurers' approaches to managing the financial risks from climate change, Bank of England: Prudential Regulation Authority, Supervisory Statement SS3/19, London, UK, Available online: <https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/supervisory-statement/2019/ss319> [Accessed 7 April 2021]

<p>1. <i>How does the way the Government currently uses GDP in setting macro-economic policy affect the development of environmental policy and of cross-departmental action to achieve the UK's environmental goals?</i></p>	<p>Where environmental degradation and biodiversity loss are not priced, this creates a fundamental and irreconcilable mismatch between macro-economic policy and preservation of natural capital.</p> <p>It may be possible to limit the most egregious environmental damage through regulation, but the fundamental incentive remains to maximise the exploitation of natural capital.</p>
<p>2. <i>How could GDP, or other current measures of macro-economic activity, more fully account for human and natural capital assets? What are the challenges and/or opportunities in moving to a way of measuring economic progress which takes greater account of such assets?</i></p>	<p>We very much support the framework proposed within the Dasgupta report of the aggregate of 3 capitals – Productive, Natural and Human.</p> <p>There is much work to be undertaken in developing these principles. But measurement of these activities – across governmental and business sectors – would be a start to develop into goals and ultimate system incentives.</p>
<p>3. <i>How might the public, businesses, financial institutions and the financial system react to any move away from GDP as the primary indicator of prosperity? What challenges could this present for policymakers, and how might these be overcome?</i></p>	<p>Tax revenues at the Treasury are GDP related. This creates a significant political incentive to grow GDP (productive capital) at the expense of the other capitals.</p> <p>We need to reorient the measurement process and then the incentives. This will take significant political and societal education and engagement to develop a far more pluralistic approach to understanding the economy and the role of nature.</p> <p>Professional bodies can help in the measurement, governance and risk management of the natural and human capitals. Policymakers and regulators can tackle the need to realign incentives within the system.</p>

All of these represent seismic shifts in the financial and economic framework that we currently use. But we wish to highlight the importance and urgency in reframing natural capital within our macro-economic policy:

- *Importance:* Limits of finance on sustainability can be illustrated through simple examples such as the “devil and the farmer”⁴. In this thought experiment, a tripling of a farmer’s profits costs 1% of topsoil. Financially, the tripling of profits can make sense but leads to a complete exhaustion of topsoil over 200 years. In 2017, the Secretary of State warned that the UK is 30 to 40 years away from ‘eradication of soil fertility’⁵ - due to incentives that have direct parallels with this process.
- *Urgency:* We are currently observing a biodiversity collapse and 6th mass extinction event. The Dasgupta report⁶ illustrated the use of Impact Inequality $Ny/\alpha > G(S)$ ⁷, commenting that the current estimate of use of resources was 1.7 times the sustainable rate. Dasgupta highlights that to rebalance the system by 2030 would require α to grow by 10% pa whereas historically it has grown by only 3.5% pa. Using numbers within the report, it is possible to illustrate the quantum of change required to rebalance if 3.5% pa remains the α growth rate:
 - By 2030, the pathway of global GDP would need to be lower by approximately 45%⁸
 - The high-income countries have 16% of people but consume 47% of the GDP. If GDP was pro-rata on the planetary resources this would represent a need to reduce the consumption of resources in high income countries by 80%⁹. At this level of consumption, the sustainable population is 1.6 billion compared to nearly 8 billion today. Any desire for an incremental adjustment should be set against the challenge of 84% of the global population aspiring to grow their consumption to high-income levels. Rich country levels of GDP consumption reflect five times the sustainable level.

These figures highlight the large quantum of change required. It also highlights the urgent need as the damage continues to accumulate, the gap widens and transition will take some time. Failure to urgently engage in the macro-economic shifts to more sustainable outcomes risks national prosperity (and GDP) at all levels – economic stability, geo-political stability, environmental security, food security and border security.

Observations of the damage from current macro-economic policies is quite straightforward. Graphically these are illustrated in work of the great acceleration¹⁰ and observations of natural world impact from deforestation to levels of plastics in the ocean. Determining the appropriate alternative measures and system incentives is harder. We support the Dasgupta review, and the three capitals framework, as a foundation for broader, sustainable measures. However, more work is required to develop these further.

Whilst a move to a three capitals framework would require seismic shifts, there are interim steps that could be undertaken to improve our current financial and economic approach:

- Given the long term nature of biodiversity risks and that many of the benefits may not be attributable to any one individual, there is a need for regulation to shape action so that everyone is playing by the same rules and neither free-riding off the back of others in the industry taking action, nor continuing business as usual with other market players bearing the consequences of negative externalities.

⁴ Fig 7 <https://www.cisl.cam.ac.uk/system/files/documents/jeremy-grantham-living-on-a-finite-planet-sosl12-h.pdf>

⁵ <https://www.theguardian.com/environment/2017/oct/24/uk-30-40-years-away-eradication-soil-fertility-warns-michael-gove>

⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957292/Dasgupta_Review_-_Abridged_Version.pdf

⁷ N - global population, γ - global GDP per capita, α - efficiency converting biosphere’s goods into products, G - biosphere’s regenerative rate, S - biosphere’s stock expressed in \$

⁸ $1-(1.035/1.1)^{10}$

⁹ The higher service orientation of high income economies is likely to mitigate this 1:1 relationship to some extent. However, this is likely to be marginal relative to the broader challenge of equalising shares relative to a multiple of sustainable consumption.

¹⁰ https://www.antropocene.org/images/PDF/13_great_acceleration.pdf

- The role of the regulator should be considered including market-based disclosures. A capital-based regime should be developed that helps capital flow to areas of the economy that are compliant with biodiversity preservation (e.g. higher capital requirements for assets related to areas that are disruptive to biodiversity).
- Direct prohibition of financing and underwriting activities may be needed for business activities that hasten biodiversity loss where inadequate transition plans are in place.
- Transparency is required and this means a need for disclosures that focus on not only risks to a business from biodiversity loss but *also* the impact the business has on biodiversity loss. A challenge here is scope – we need to develop something akin to scope 1, 2 & 3 carbon emissions but for biodiversity loss.
- Regulation should consider which stakeholder voices get heard and should reflect differences in terms of valuation from different points of view.

We would encourage work on all these points as well as a fleshing out of the measurement of three capitals as a precursor to incentivising their future growth.

The limitations of GDP, the development of nature-related metrics and the role of finance

In our considerations relating to GDP as a measure of progress, we have noted the following shortcomings¹¹:

- Evidence shows that happiness derived from “having” is reasonably fleeting, and there are other factors that have a more substantial bearing on happiness¹².
- Absolute levels of wealth and material possessions are less important than relative wealth/possessions. Simply producing more and more stuff will not achieve overall happiness, especially in an increasingly connected world where things like social media exacerbate the effects of conspicuous consumption and “keeping up with the Jones’s”. Distribution matters, and inequality has been increasing in recent decades.
- GDP summarises all economic activity into a single figure, with no distinction between activities that increase or reduce the overall happiness and wellbeing of a society. There are activities that arguably have negative societal impacts, such as smoking and gambling addiction, but contribute to GDP.

GDP growth is an appealing metric because it is familiar and quantifiable. However, for the reasons given above, a wider portfolio of metrics is needed in order to maximise societal wellbeing and ensure it is achieved in a way that can be sustained over the long term. We therefore welcome the commitment that HM Treasury will provide further funding to expand the metrics used by ONS.

In general, we welcome the approach by government to include legally binding targets to halt the decline in species abundance by 2030 contained within the Environment Bill and the Nature Recovery Green Paper which will outline future plans. We also welcome plans to develop a set of indicators by 2024. However, it is important that such targets and indicators are translated into business relevant actions and understanding. The Taskforce for Nature Related Financial Disclosure (TNFD) will help with this framing.

¹¹ <http://blog.actuaries.org.uk/blog/problems-targeting-gdp-growth>

¹² <http://blog.actuaries.org.uk/blog/what-goal-we-build-back-better-aftermath-covid-19>

We also welcome the commitment for the Government Economic Service (GES) to incorporate the economics of biodiversity into the revised GES Technical Framework and as a profession we have identified the need to expand our training and professional development to include alternative economic approaches, climate change and biodiversity.

Practice and supportive responses to the alternative measures from public, businesses, financial institutions, and the financial system are harder to project. While we welcome these moves to improve and expand metrics, we also note that there is a perceived barrier to a transformation due to mindsets. The finance sector has become excessively mathematical over the past few decades and there is a lack of a governance process associated with the potential downsides of managing decision-making based solely on quantitative measures. This reflects a deep-set “economism” present across institutional investment professionals, reducing risk assessment to mere financials and narrower investment performance¹³. Indeed, we would argue that it is not merely a problem of a different set of quantitative measures that are required, but that we should be more comfortable in the use of qualitative measures of progress, as not all risk or progress can be quantified in a simple and comparable way.

There is also a concern that finance professionals are facilitating the problems that exist in today's economy rather than challenging or highlighting them. When the future is very different from the past, our existing methodologies may not be fit for purpose, but there is a lack of culture or process within the sector to allow a critique of how things are done. While this is true at the professional level, it was also felt to be true at an institutional or individual level. This can also be extended to policy appraisal and development. Importantly when exploring the expansion of measures beyond GDP, we must be open to challenging our own mindsets during this process.

At a recent workshop¹⁴ exploring the future of finance, an issue that was stressed at several points was the need for more qualitative measures and skills¹⁵. Not all risk or measures can be, or have to be, quantified. When quantification occurs some of the context and nuance associated with the risk can be lost. However, the move to rendering risk in financial and investible terms drives the work of quantification among intermediaries¹⁶.

As an underlying set of assumptions that dominates the discourse and analysis, neoclassical economic theory has been highlighted¹⁷. It is felt that the dominance of neoclassical economics, and its understanding of uncertainty, treatment of time, resources, finance, government, and actor behaviour, limits the ability of the finance and risk experts to challenge organisations to better manage long-term value. New tools are needed to broaden the scope of professional advice, but importantly the limitations of current tools need to be clearly articulated and understood.

The tendency for financial markets to be self-governing in many aspects, including in relation to sustainability concerns, is not a historical accident but the result of political choices. Schemes for addressing environmental issues in the financial sector are overwhelmingly private, voluntary and self-governing¹⁸. It was generally agreed that financial regulation has to do much more than currently conceived by relevant bodies, including those managing macroprudential risk¹⁹. Currently, much hope is pinned by governments

¹³ Christophers, B. (2019). Environmental Beta or How Institutional Investors Think about Climate Change and Fossil Fuel Risk, *Annals of the American Association of Geographers*, 109(3), 754-774

¹⁴ Jones, A., Taylor, N., Hafner, S., Kitchen, J., 2021, 'Finance for a future of sustainable prosperity', *AREA*, 53 (1), 21

¹⁵ Baccher, J.S., Dixon, A.D., and Monk, A.H.B. (2016). *The New Frontier Investors*, London: Palgrave Macmillan

¹⁶ Mawsdley, E. (2018). Development geography II: Financialization. *Progress in Human Geography*, 42(2), 264-274

¹⁷ Clacher, I. (2019). Economic Thought and Actuarial Practice, Actuarial Research Centre Working Paper, Institute and Faculty of Actuaries

¹⁸ Thistlethwaite, J., and Paterson, M. (2016). Private Governance and Accounting for Sustainability Networks, *Environment and Planning C: Government and Policy*, 34(7), 1197–1221

¹⁹ D’Orazio, P., and Popoyan, L. (2019). Fostering green investments and tackling climate-related financial risks: Which role for macroprudential policies?, *Ecological Economics*, 160(C), 25-37

and others on one such scheme – the Taskforce for Climate-Related Financial Disclosure (TCFD). There is a real risk, however, that the TCFD will encourage a proliferation of information without any substantial action; a risk manifest in the assumption that disclosure automatically engenders market disciplining of climate laggards²⁰. The same may be true of TNFD. Therefore, consideration is needed now around the fact that risk disclosure in itself is not sufficient to change business practice and that further direct action or regulation may be needed to ensure business change takes place as a result of those risk disclosures.

It is important to consider the hierarchy of decision-making within business and where responsibility for decisions, or advice that those decisions are based on, falls. Effective change is often down to well-placed individuals rather than anything systematic. There is currently very little integration between business decisions and sustainability at a strategic finance level (the Chief Sustainability Officer, if they exist, does not talk to the Chief Finance Officer and departments work in silos). This becomes even more complicated when considering responsibility down supply chains.

Governmental policy, and society, need to find their preferred balance in the trade-off between efficiency and resilience. A system with low unused capacity can be efficient but has less resilience than a system with more spare capacity. This is particularly true of nature which needs to be managed for resilience over time.

The fundamental challenge is the scale of change that is envisaged. With this complex set of challenges it may be important to allow more disagreement to exist, to prioritise direction over precision and to use a proliferation of perspectives to inform decisions. We hope this response provides useful input into this debate.

Should you wish to discuss any of the points raised in this submission in more detail please contact Caroline Winchester, Policy Manager (caroline.winchester@actuaries.org.uk).

²⁰ Christophers, B. (2017). Climate Change and Financial Instability: Risk Disclosure and the Problematics of Neoliberal Governance'. *Annals of the American Association of Geographers*, 107(5), 1108–27