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Avengers: Age of Actuaries – the Case for Natural Capital

The Avengers franchise has been an unprecedented success; at the time of writing, the latest instalment has broken countless box office records, including the fastest film to gross \$2.5bn. Whilst the superstar cast (and promise of cutting-edge CGI action scenes) have attracted the big audiences, I want to highlight to the reader (and especially the actuarially trained reader!) the role of natural capital in the franchise.

For those who aren't familiar, Thanos is the principal antagonist throughout the films with a master plan to wipe out half of the universe's population. His actions are motivated by the concern that a growing population is depleting finite resources to the extent that, if left unchecked, the universe will ultimately destroy itself.

When we consider the current environment and climate emergency, as has been declared in the UK, it is not hard to draw parallels between the challenges faced on Earth and the fictional Marvel universe. It is no surprise that fans have been able, at least to a degree, to sympathise with Thanos' concerns and buy in to the storyline.

Therefore, besides the heroics, the franchise serves as a timely reminder of the significant challenges that we face regarding economic growth and, central to this, the preservation of Earth's natural capital.

What do we mean by natural capital?

Natural capital is defined as the world's stocks of natural assets such as water, air, geology, soils and all living organisms. Like other forms of capital, natural capital can be a factor of production. What makes it natural is that nature provides it to us for free. There are two types:

1. Non-renewable natural capital assets are those that can only be used once (e.g. North Sea oil and minerals).
2. Renewable natural capital assets are those that nature continues to give to us, subject to them not being depleted to the point that they can no longer reproduce themselves in human timescales (e.g. rainforests and fish stocks).

The concept of natural capital is typically positioned in contrast to traditional economics. Traditional economics ignores all assets through its focus on Gross Domestic Product (GDP), which is essentially a measure of income. Furthermore, depleting natural assets can, in fact, increase GDP; for example, the extraction of North Sea oil produces a flow of income, which increases output.

Ultimately, GDP growth does not necessarily mean sustainable economic growth.

How can natural capital underpin sustainable economic growth?

Thanos' proposed intervention in the films, namely, to track down the power necessary to halve the universe's population at the click of his fingers, has a very 'Malthusian check' feel to it – an event or action to bring populations down to a level that meets agricultural production outputs. Closer to home, fans are likely to want solutions that allow the global population to avoid a negative 'check' (famine or war), alongside continued improvements in living standards.

Many argue that changing the way we account for, measure, and value natural capital would be a significant step towards a sustainable growth path.

Chief amongst the proponents is Professor Dieter Helm, the Chair of the UK's Natural Capital Committee. He proposes an asset-based rule that the "aggregate value of natural capital should not decline"¹. Under the 'strong' version of the rule, "the aggregate level of renewable natural capital should be kept at least constant and the value of the economic rents from the depletion of non-renewable natural capital should be invested in renewable natural capital"². Implementing the policies to meet this rule would require significant institutional change.

Hollywood would never have entertained the thought that Thanos would arrive on Earth proposing policy reform placing natural capital at the heart of a sustainable growth path. However, today's policymakers are waking up to the issues. For example, the UK Government's 25 year plan sets out measures so that the current UK population can "become the first generation to leave [the] environment in a better state than we found it and pass on to the next generation a natural environment protected and enhanced for the future"³.

From an actuarial perspective, there is an opportunity to frame natural assets as a form of capital through our actions and advice. This may help to make them more visible to businesses and investors. Highlighting the importance of natural assets should improve the likelihood that they are taken into account in corporate and investment decisions. Furthermore, improvements in data collection and manipulation will help governments, companies and investors to judge whether we are maintaining our natural capital stocks.

Fingers crossed we are not in the 'Endgame' for natural capital just yet!

References

¹ Dieter Helm (2015); Natural Capital; Valuing the Planet, p8

² Dieter Helm (2015); Natural Capital; Valuing the Planet, p64

³ UK Government (2018); A Green Future: Our 25 Year Plan to Improve the Environment

Further reading

<https://naturalcapital.finance/>
<https://naturalcapitalcoalition.org/>

Author: Jonathan Cross, investment actuary at Mercer, and member of the Research & CPD Subcommittee of the Resource & Environment Board of the Institute and Faculty of Actuaries.

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