EarthSWF

What is a SWF?

Sovereign Wealth Funds are governmental entities typically set up with excess national funds. This IMF working paper describes briefly how a nation might set up a Sovereign Wealth Fund. The mandate of a SWF is to promote an owner nation's economic and developmental goals, thereby growing its overall wealth. They are capable of making foreign investments and generally operate in a much more active capacity than a traditional mutual fund, which is largely restricted to passive investment. Many people have heard of SWFs in the context of oil rich countries like Norway, whose SWF has over 1 trillion in assets.

Why an Earth focused SWF?

Nations must cooperatively allocate capital in the service of ecological stewardship. Extending the notion of a national SWF to the world as a whole can serve as a vehicle whereby nations can intelligently mitigate human climate impact. The overall objective is to take the most effective global economic action that serves the goal of meeting world climate and emissions targets.

Two Aspects of a fund

Structural Considerations

Achieving worldwide cooperation on matters of urgent ecological need is exceedingly difficult. In response to this, the primary purpose of this document is an attempt to outline at least one path forward starting at the grassroots level, not reliant on worldwide political will. However, it is still an ideal whereby the world's governments collectively, with a political mandate driven by citizen engagement, pool collective resources in a formal sense. This construct would legally extend the notion of a national SWF operating in service of a particular nation's interest to a worldwide SWF operating with a mandate of optimal ecological stewardship.

One key aspect of such a fund is the necessity of considering a multi-tiered structure having different share allocation, governance, and objectives for the respective tiers. In this way such a fund can successfully accommodate the needs of its diverse constituents. For example, v-citizens (see below) may not care whether money they directly invest returns a profit if they value the ecological impact of their contribution--hence allocations made at this tier can have no direct economic value. An example of such an allocation could be purchasing a forest for conservation. In a different tier, institutional investors with a social mandate may seek to invest in companies working on green technologies. These investors will expect some ROI, perhaps reduced, as an incentive for making investments. Another tier is one in which sovereign nations enter into formal collective cooperation. Nation states may accept a mix of no/reduced/market return on monies allocated, which will necessitate a separate optimal objective function.
There is a science of fund management, which in this application will result in ecologically focused policy and allocation decisions. This science can involve all manner of data— from standard economic releases to real-time satellite remote sensing.

Irrespective of whether the legal or political constructs currently exist for the creation of such a fund, it is this aspect, the scientific characterization of economies and their ecological impacts that must proceed. Taking a view of economies from the perspective of capital allocation constrained by an ecological objective function (meeting climate goals with lowest global cost) can be an optimal way to think and work collectively on matters of global environmental urgency. A modern *ecologically aware systems theory of economies* can be constructed and refined through the open efforts of interested parties worldwide. Sophisticated mathematical and computational models can illuminate the complex network interactions of national economies, with a focus on the precise understanding of ecological impacts of diverse economic activity.

Previous efforts that constructed world economic system models can serve as inspiration for modern de novo projects. These new efforts will employ heterogeneous methodologies, with some examples that might include applied category theory, mechanism design, symbolic dynamics, statistical learning, agent-based models, constrained optimization, and portfolio optimization.

**Individual action**

**Can individual citizens help? An abstract nation**

Can a nation be abstract or virtual? In other words, is it possible to envision a kind of virtual citizenship not constrained or defined by physical borders? The concept is not so unlike the notion of a homotopy type that defines higher levels of equalities— this would be something analogous for citizenship, defining higher levels of citizenship— a higher abstract citizenship. A charter for a virtual nation can be constructed, a digital Pangaea, which can inspire collective action on climate change. This nation’s charter will clearly formalize that members explicitly allocate all national economic resources towards efforts that will mitigate deleterious human climate impact. Tools like Free & Fair can enable democratic governance. Every v-citizen can have an e-identity similar to that of Estonia. Further, public banks can be chartered with mandates to make loans based on projected positive ecological outcomes.

The main purpose of virtual citizenship is to galvanize private individual fund contributions from all humans, bringing them together formally under the auspices of a shared community purpose. Virtual national membership can be mediated through networked applications existing on smartphone devices, allowing for the further leveraging of collective power.

**Leveraging collective power**

Distributed networked applications can utilize each individual’s smartphone as a compute node to perform analysis, modeling, and scientific calculations in the service of the overall fund goals. In this way many can participate even without financial contribution. The computational power distributed throughout the world on smartphone platforms is staggering, far exceeding the most powerful special purpose supercomputers by at least an order of magnitude.
In sum

Our Earth needs a trust, an entity capitalized and chartered to take economic action in the service of sustainability. We can extend the notion of an SWF to the whole Earth, with the SWF having a mandate to serve this global ecological effort. Complementary to the EarthSWF is the idea of extending citizenship further beyond the borders of physical nation-states, to a virtual nation, whose citizens pool their resources into the EarthSWF.