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National Policies to Support Sustainable, Equitable Economies

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Economic wellbeing is inadequately being measured across countries using market output (GDP) and per capita income. Economic policies are then formulated to grow GDP and total income rather than actual wellbeing. Here we assume a broad array of policies, called the Sustainable, Shared-Prosperity Policy Index (SSPI), are required to create wellbeing within and across countries. The SSPI integrates three Pillars (Sustainability, Market Structure, and Public Goods) that measure the system of national policies that represent the government functions of protecting the environment, structuring markets, and delivering public goods and services, respectively. Nations vary widely in their national policies to provide for the common good and support the well-being of people and the environment. For a specific social goal, a variety of outcome or performance indices exist to compare countries, but to our knowledge, no index exists of the *national policies* created to guide and support these outcomes. For example, metrics compare the *economic performance* of countries in terms of inequality, greenhouse gas emissions, health and longevity, education, and productivity. Therefore we created the SSPI to compare national policies and provide a road map to guide policymakers seeking to design an economic system that generates universal well-being. Overall, the Sustainability Pillar has the weakest policies and the Public Goods the strongest. We also measure the statistical relationship of the SSPI with well-known metrics of national outcomes and find that the SSPI policies track most performance metrics across countries. The SSPI provides detailed data and rankings of how countries vary in their policies in terms of where they are weak or strong, and of possible improvements in a country's weaker policies.

I. Introduction

The Sustainable, Shared-Prosperity Policy Index (SSPI) structures and measures national policies across three Pillars, which are composed of sixteen categories representing broad policies:

- Sustainability: protection of ecosystems, and regulation of land use, waste, energy, and greenhouse gases;
- Market Structure: regulation of employment, taxes, property; provision of economic security and financial system;
- Public Goods: programs for healthcare and education; provision of infrastructure, rights, public safety, and global role.

Together the sixteen categories contain fifty-seven policy indicators. Each indicator measures how well a country's policy supports a specific social goal by comparing it to two reference values: an upper goalpost representing an ideal policy and a lower goalpost representing a very weak policy[2]. The policy indicators, which use publicly available data, are normalized (between 0 and 1) based on the upper and lower goalposts. Then the policy indicators are aggregated into the categories, which are aggregated into the three Pillars, which are aggregated into the SSPI. (See SSPI Indicators, Table 10.) We present the SSPI ranking of forty-nine countries (Table 1) and their ranking by Pillar (Tables 2-4) for 2018. Overall the European countries dominate the top rankings with strong national policies.

[1] Ekaterina Fedorova, Tai Lohrer, Sangcheol Moon, Uma Krishnaswamy, Simon Saellstroem, Ryusuke Kondo, Jeff Suzuki, McCoy Cantwell, Michelle Tan, and Minh Nguyen contributed to an earlier working paper on SSPI version 1. The paper benefitted from comments from Steve Vogel, Matthew Potts, Steve Raphael, Kurt Bayer, Wayne Chen, Brent Dixon, Ed Dolan, Teresa Ghilarducci, Jonathan Hall, Marlene Kim, Milorad Kovacevic, Eli Lazarus, Gordon McCord, Dan Nixon, Zachary Wendling, and Laszlo Zolnai. The Institute for Labor and Employment and the Undergraduate Research Apprenticeship Program at UC Berkeley provided administrative and financial support for this research project.

[2] The lower goalpost represents very weak policies as a zero. Countries with even weaker policies are capped at zero, primarily because in some cases their policies may represent noisy data.

Next we explore how well policies track measures of socioeconomic performance and well-being across countries by analyzing the statistical relationship of the SSPI with eight well-known metrics of national outcomes. (See Table 8.) The SSPI significantly and positively tracks the eight measures of national performance: the Human Development Index (HDI), the Sustainable Development Index (SDG), the Legatum Prosperity Index (LPI), the Social Progress Index (SPI), Environmental Performance Index (EPI), Ecological Footprint Index, the Cantril Life Satisfaction Ladder (CL), and Gross Domestic Product per capita (GDP), with variations across the performance regressions in the t-statistic and the proportion of variance explained. Below we discuss interesting differences on the tracking of the three SSPI pillars across the eight performance measures.

We created the SSPI to help us understand the national policies used to deal with the major crises of climate change, inequality, racism, and democracy, and more broadly the policies that care for both the people and the planet. Our goal is to create an index that provides a useful framework for analyzing country policies both to learn about the policies within a specific country and to compare policies across countries.

II. Background

National policies (regulations, public goods and services) along with culture and norms structure economic and social life. We view markets as embodying the institutions and rules that govern the economy and society and are inseparable from their functioning (Polanyi 1944; North 1990). SSPI documents the policies adopted by countries to create an economy that focuses on the well-being of people and the environment. By measuring the strength of these policies, the SSPI can be interpreted as measuring the degree to which government policy is aligned with the interests of people and the planet.

Of course, governments may choose to align their policies with other interests that seek to capture power and extract private gain. In regimes of political patronage and corruption, government policy is set to benefit the private interests of individual government functionaries and their cronies. Even in the absence of corruption, governments interested in structuring policy to promote the wellbeing of people and the planet face pressure from corporations to align policy with corporate interests for private gain. When such corporate interests conflict with public wellbeing, governments face a choice. A major difference across countries is the degree the private sector succeeds in influencing government policy to promote its own interests. Usually either large corporations or the government play the dominant role in setting market rules for an industry, and the resulting economic outcomes tend to disproportionately benefit either company profitability or societal wellbeing.

All economies require government rules so that markets operate with rule of law, enforcement of contracts, protection of private property, monetary and banking systems, and capital markets. Governments also provide an array of social programs, such as health care and education, and raise revenue through taxation to pay for these programs. However governments vary in their participation in private markets and in the regulations imposed on employers.

The result is that the rules that structure private markets can be set by large corporations and not the government. Overall nations vary in their policies that structure markets and in their social programs, as well as their economic and social outcomes.

To understand the role that economic policies play, economists and political scientists have studied a variety of policies and how they influence specific outcomes. (Vogel 2018; Fligstein 2021; Hall and Soskice 2001; Sachs 2017). Joseph Stiglitz (2012, 2016) and Tony Atkinson (2015) explain how capitalist systems choose their level of inequality through their economic policies and how policies can create an economy that reduces inequality and shares prosperity. Climate scientists provide roadmaps that show how countries choose their carbon emissions, and how to transform their economies to be carbon free. (Jacobson 2020; Jacobson et al 2017; Waisman 2015). However the neoliberal economists pushed the economic growth imperative focused on market output and ever-increasing average income per person, and relied on the free market argument that market regulation negatively affects economic performance, including lower growth and higher poverty.

(Dawson and Seater 2013; Chambers, et al 2019; Friedman and Friedman 1982; Hayek 1944; Stedman Jones 2012; Steger and Roy 2010). Across countries, the observed patterns of GDP, inequality, and carbon emissions are outcomes that reflect government policies.

"Who is in charge" of the policies that structure markets and deliver basic goods and services will largely determine socioeconomic outcomes. (Vogel 1996, 2018; Polanyi 1957)[3] Dominant companies and the rich generally favor a "free market" (deregulated) approach that provides the rich with higher incomes, lower taxes, and market power, while providing fewer resources and less security to the rest of society. This is not truly a free or competitive market economy, but presents a powerful smokescreen that rigs the market rules in their favor. (Vogel 2020; Stiglitz 2024).[4]

The power to set the market rules determines how markets operate and how resources are distributed. Market rules can be set by the government for the common good (social democracy), or they can be handed off to dominant companies to make the rules in a "free market" (neoliberalism). When markets are concentrated with a few large companies dominating an industry, deregulation does not increase competition. Instead deregulation replaces government rules with company policies, and this reregulation shifts power from the government to the large companies and their wealthy executives and rich shareholders. (Vogel 2019; Coyle 2024).[5]

For the SSPI, we follow Amartya Sen(1999) in presuming the goal is to guarantee a comfortable dignified life with full opportunities for everyone, now and future generations. Government provides social services to enhance people's well-being, and these services, such as education and health care, can be comprehensive or scaled back to provide minimal levels. Taxation policies to pay for government programs vary in what is taxed, e.g., people's income or wealth, or business income, and the degree of progressivity, which directly affects fairness and inequality. (Saez and Zucman 2019; Scheve and Stasavage 2016). Government oversees stewardship of the environment, *e.g.*, the carbon emissions from energy, depletion of groundwater, and use of pesticides. Thus, national policies directly affect market production and distribution, provision of basic consumption and services, and degradation of the environment. The policy choices determine the well-being of the country, now and in the future. (Brown 2016; Raworth 2017)

Stiglitz (2013) and Piketty (2020) explain how countries choose their level of inequality through their regulations and social programs, so economists know the policies to achieve shared prosperity domestically. Climate scientists explain how countries choose their level of carbon emissions through their energy policies, and have provided policy roadmaps on how to transition to zero carbon emission economies. (Deep Decarbonization Pathways Project 2015; Jacobson et al 2017). The United Nations Millennium Development Goals (2015a) demonstrated how to reduce global suffering, followed by the UN Sustainable Development Goals that measure how well countries are doing in their socioeconomic performance. The added bonus of creating an equitable, sustainable, caring economy is that the country's well-being improves with lower inequality, people's happiness increases, and the health of people and the planet improve together.

A large literature exists of economic research on creating broad measures of well-being as economic performance, which includes the seven outcome variables used below. The Organization for Economic Co-operation and Development lays the foundation for a new systematic approach that considers national policies to support well-being, rather than focus on average GDP and its growth . Their report *Beyond Growth* discusses policies to structure markets and argues that nations must go beyond growth and "rethink the role of the economy in improving the well-being of people and the planet" in order to achieve environmental sustainability,

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[3] Vogel, Steven K. *Marketcraft: How Governments Make Markets Work.* Oxford University Press, 2018; Vogel, Steven K. Freer markets, more rules: Regulatory reform in advanced industrial countries. Ithaca, NY: Cornell University Press, 1996; Polanyi, The Great Transformation [1944] 1957

[4] Vogel, Steven K. Neoliberal Ideology and the Myth of the Self-Made Entrepreneur (August 13, 2020). Available at SSRN: https://ssrn.com/abstract=3698179 or http://dx.doi.org/10.2139/ssrn.3698179

[5] Vogel, Steven K. "The Marketcraft Solution," paper presented at the conference A New Deal for this New Century: Making Our Economy Work for All, New York University Global Academic Center, Washington, DC, October, 2019. https://www.law.nyu.edu/sites/default/files/Vogel%20Steven%20-%20The%20Marketcraft%20Solution.pdf

reduced inequality, greater social welfare and improved resilience. (OECD 2020 pp 22-27).[6] A major goal of the OECD is to build better policies for better lives by shaping OECD standards and policies across countries on specific issues. Socioeconomic goals are measured by well-being indicators, which are used to guide policies.[7]

Building on the foundation provided by this prior research, SSPI policy variables can be interpreted as indicating the extent to which national markets are structured and government programs are created to support specific outcomes that improve the well-being of the people or protect the environment. High scores indicate that national policies tend to support the desired goals, while low scores indicate weak versions of these policies. Unsurprisingly, socioeconomic policies vary significantly across countries.

A policy index, such as the SSPI, differs from widely used economic indices used to measure economic performance or outcomes, and we analyze how the SSPI tracks the well-known economic performance measures. However, to our knowledge, no other policy index that brings together a broad range of economic policies exists across countries. Some indices may exist for a specific type of policy, such as the Competition Law Index, which measures the competition laws from 1889 to 2010 across 123 countries in order to examine trends in competition regulations. (Bradford and Chilton 2018). Another policy index, the Environmental Conventions Index, evaluates the level of implementation, compliance, and effectiveness of global environmental conventions, and works globally to improve the policy application processes. (Escobar-Pemberthy and Ivanova 2020). The OECD has a survey of how regulations are made by countries, provides an assessment of the positive and negative effects of regulations along with an ex-post evaluation.[8] Taking a bottom up approach to designing policy, Wellbeing Economy Alliance, a global participatory group, created a policy design guidebook that uses five steps that start with developing a well-being vision (goals) and designing a well-being economy strategy, before selecting well-being policies and then implementing the policies and evaluating their impact. (Wellbeing Economy Alliance 2020). Certainly the inclusion of people and communities in articulating their specific needs for improved policies and goals is important in the actual creation and implementation of policies, and the SSPI might provide guidance in the policy design process.

The World Bank is creating a new quantitative index, named B-Ready (World Bank, 2024), that evaluates the private sector and business environment in relation to government programs and regulations. It has three pillars [Regulatory Framework, Public Services, Operational Efficiency] that each have ten topics made up of 1200 indicators considered essential for private sector development that advances a vibrant private sector for firms, workers, consumers, new enterprises, and the environment. Indicators are weighted by firm flexibility and social benefit, and there are two sets of scores: for each topic and for each pillar (scaled 0-100). Economies are then ranked and presented in quintiles for each pillar. Although B-Ready and SSPI both use a three pillar structure that integrates and ranks countries with normalized scores, B-Ready focuses on the private sector and SSPI focuses on both the public and private sectors. Structurally they differ in that B-Ready examines each pillar across their ten topics that reflect the life cycle of a firm, while the SSPI pillars each have unique indicator policies. The most striking difference is in the geographic coverage with little overlap of the B-Ready and SSPI countries; as this changes over time, various parts of SSPI can be compared to B-Ready. For example, both indices indicate weak environmental sustainability policies with inadequate public policies in the SSPI and "good" practices not widely implemented in B-Ready.

The SSPI also describes national policies that would support or regulate corporate goals and actual performance in reducing emissions. In a study titled "Do corporate carbon management practices drive better carbon performance?", the answer is that overall, the practices recommended by the Taskforce on Climate-related Financial Disclosure (TCFD) are not associated with improved emissions performance. However, a

[6] For references and research papers see Stiglitz, Joseph, Jean-Paul Fitoussi and Martine Durand (2018). *Beyond GDP.* OECD https://www.oecd-ilibrary.org/economics/beyond-gdp_9789264307292-en. See also the UN System of Environmental Economic Accounting that includes natural capital in economic reporting. https://seea.un.org/ecosystem-accounting

[7] See https://www.oecd.org/wise/Well-being-metrics-into-policy-action-october-2019-programme.pdf with links to the presentations on well-being metrics and policies for various OECD countries.

[8] http://www.oecd.org/gov/regulatory-policy/indicators-regulatory-policy-and-governance.htm. Reports are issued every three years. 2021 is the most recent report: https://www.oecd.org/gov/regulatory-policy/oecd-regulatory-policy-outlook-2021-38b0fdb1-en.htm

company with strong emission metrics and targets also has future emission reductions. (Moon 2021) From a policy perspective, national regulations that mandate specific emission goals by industry would be warranted. Voluntary adoption of TCFD by companies without required emission goals will not produce the desired emission reduction goals.

We view the SSPI for 2018 as a first step in understanding the economic policies observed within and across countries and the relationship between national policies and socioeconomic outcomes. The outcome or performance metrics point out where national policies can be improved, with the SSPI providing information on the specific policies that are related to the relevant outcomes.

III. Methodology

The SSPI is calculated for forty-nine countries, which comprise the Organisation for Economic Cooperation and Development (OECD), the Group of Twenty (G20), plus another five countries classified as 'High income' (2018) by the World Bank 2018. [9] These forty-nine countries include the largest and the most industrialized economics, for which most of the policy data are available and reliable. Collectively these countries account for 90% of world GDP and approximately 67% of the world population.[10] They also account for the large majority of greenhouse gas emissions.[11]

Our research team relied upon a large body of literature that described and analyzed the various policies and programs, and focused on best practices across countries or in selected countries. We especially relied upon the policies supporting the Sustainable Development Goals.[12] Although we cannot present the studies used in all the SSPI policies, some of the data sources provide references to relevant studies. Some examples of the studies we used in creating specific policy indicators are: labor market policies and how they impact labor market operations (Card and Oreopoulos 2019); policies to protect groundwater with sustainable provision of water (GlobeScan 2019); and land management policies for natural carbon sequestration in forests. (Ni et al 2016)

In selecting data to represent the policy indicators and then aggregating them into a composite index, we followed the OECD recommended practice (OECD 2008). The policy indicators were selected based on data that are well-defined and reliable, plus made publicly available over time. We only used data from credible organizations with extensive data covering many countries. Objective administrative data is selected over subjective survey data. In order to evaluate if two policy variables represented the same information, and were thus interchangeable, correlations of the variables were compared. When indicators are highly correlated and thought to represent the same information, then the indicator with more country observations or higher quality data is used. We also used sensitivity testing to evaluate how sensitive an indicator was to the use of different variables and their aggregation into the relevant category.

In designing policy indicators, we opted for the most direct measurement of policy for which reliable data were available for 2018. Where possible, direct measurements of policy were used to create policy indicators; examples include **Biodiversity** (the proportion of ecologically important areas protected by law), **Tax Revenue** (the amount of revenue raised as a percentage of GDP), and the government expenditure component of **Research and Development** (the proportion of GDP spent on government R&D). Direct

[9] The 37 OECD countries do not include Costa Rica (joined OECD in 2021). The World Bank High Income Countries (2018) have per person incomes above $12,055, and upper-middle income range is $3,896 - $12,055 (GNI per cap, current US$). (https://blogs.worldbank.org/opendata/new-country-classifications-income-level-2018-2019). We follow the World Bank naming convention except use "Russia" instead of "Russian Federation".

[10] World Development Indicators. 2019. "GDP (current $)". https://data.worldbank.org/indicator/NY.GDP.MKTP.CD. Accessed 2 Aug. 2019. "Population, total" 2019, https://data.worldbank.org/indicator/SP.POP.TOTL. Accessed 2 Aug. 2019. In order to include more developing countries, we also collected data for an additional eighteen countries. However their data availability and reliability were spotty, which constrained their comparability with the original forty-nine countries.

[11] *See* https://www.oecd.org/en/publications/2024/11/the-climate-action-monitor-2024_f0f16874.html.

[12] *See* Sustainable Development Solutions Network (2015), and Sustainable Development Reports published annually since 2016. The 2019 report contains a statistical annex with regional data for detailed targets. https://unstats.un.org/sdgs/files/report/2019/secretary-general-sdg-report-2019--Statistical-Annex.pdf. The data collection is updated annually and available online https://unstats.un.org/sdgs/dataportal.

numerical measurements of policy are possible only when governments control the level of a single parameter that determines the strength of a policy.

Many of the policies needed to achieve sustainable and shared prosperity are not so simple, however; some policy goals require a multifaceted package of policies adapted to local circumstances and constraints that work together to achieve the goal. In such situations, we use outcome metrics to proxy for these packages of government policies. For example, although **Deforestation** (percentage change in forest covering from a 1990-1999 benchmark), **Fatal Injuries** (fatal injuries per 10000 workers), and **Primary School Net Enrollment** (percentage of children of primary school age enrolled in formal education) are not specified directly by policy in the same way the amount spent on government research is, government policy nevertheless determines the levels of these variables, especially over the long run. Thus, proxy measures acknowledge the variety and plurality of specific policies, each adapted to a particular geographic, cultural, and political context, that countries may pursue to achieve a universal policy goal.

The Indicator Table describes the data used in constructing the three Pillars. Public Goods is the broadest pillar and includes government programs of the goods and services that are directly supplied by the government. What unifies the Public Goods policies is that they are largely under direct control of the national or regional government. The Public Goods pillar includes six categories: Education, Health Care, Infrastructure, Rights, Public Safety, and Global Role.

The Market Structure pillar brings together a wide array of policies that regulate and structure how markets function. The supply side is regulated through employment policies, taxation, and the protection of property and competition rights. The demand side is supported by economic security policies, with the financial system supporting the effective operation of markets. The five Market Structure categories are Employment, Economic Security, Taxation, Property, and Financial System.

The policies in the Public Goods and Market Structure pillars do not capture the responsibility that governments have to protect the environment for people today and for future generations, which explains the role of the Sustainability pillar. The Sustainability policies relate to the management and direct use of existing natural resources and the externalities resulting from degradation of the country's natural capital. A company's production decisions are based on its costs, which typically do not include external costs related to public health or environmental deterioration. The public ends up paying the external costs of production through worsened health or a degraded environment. Sustainability policies measure the extent to which governments have policies in place to care for the environment. The pillar includes five categories: Ecosystems, Land, Energy, Greenhouse Gases, and Waste.

The Pillars and Categories should be thought of as systems of policies that operate together, rather than as individual policies that can be analyzed separately. For example, many types of policies affect how markets operate, or the health of the environment, or the quality of life. The goal is to have policies that influence the quality of life and the environment within the overall socioeconomic system. For example, the Infrastructure category brings together a wide range of policies that together support daily activities in a community and also impact the environment. Infrastructure policies include access to electricity, water quality, basic sanitation, internet access, and transportation network, with the infrastructure commonly built by governments and service either directly provided by the government or regulated through private companies.

All indicators are set up so that a higher score represents a policy oriented toward a superior outcome. Each policy indicator is normalized to a value between 0 and 1, so that the widely varying data are expressed in comparable units across all indicators. Indicators are normalized based upon lower and upper goalposts, which represent the hypothetical minimum and hypothetical maximum for the policy variable, using the following formula: [13]

[13] Our steps for calculating scores for each indicator aligns with the same methodology of goalposting for the Human Development Index. The HDR 2020 technical explains how these "dimension indices" (our equivalent of indicator scores) are normalized to values between 0 and 1, and these minimum and maximum goalposts are set according to both historical evidence and achievability.

$$Indicator\ Score = \frac{Observed\ Value - Lower\ Goalpost}{Upper\ Goalpost - Lower\ Goalpost}\ .$$

Setting the goalposts of a specific indicator shifts the center and controls the spread of its score distribution while preserving the ranks in the observed data. When possible, we used internationally established norms as goalposts for policies, such as those in the 2022 Sustainable Development Report (Sachs et al 2022). For policy indicators without an established norm, the historical values observed across countries are used as a guide for what is possible for high performers while allowing for continued improvement in future years, and also to benchmark low performance. We used sensitivity testing of the goalposts of a specific indicator to evaluate the distribution and outliers across countries, and used the observed high values as a benchmark of what good policy can achieve as the upper goalpost. A few very high scores were determined to reflect noise, and the scores were capped at the upper goalpost. Setting the lower goalpost too low can penalize countries with insufficient resources or characteristics, such as geography or culture, that may constrain policy. Therefore some of our selected lower goalposts cap the observed values at the lower goalpost, both to minimize noise and to reflect a reasonable lower benchmark for weak country policies.

For example, for the policy to protect biodiversity, benchmarks can be drawn from environmental science. We know that to protect the planet's ecosystems, nations must quit causing extinction and preserve species to maintain their biodiversity. The percentage of important sites covered by protected areas ranges from 0 to 100, with the range given as a percentage of internationally known sites. The maximum observed value is 96.9%, so it is reasonable to expect a maximum of 100%, since ideally we would want a country's policy to protect known important sites.

A more complex example is provided by creating goalposts for policies relating to carbon sequestration. We do not know the maximum amount of carbon that could be sequestered because it varies widely by country and relevant data across countries are sparse. Without clear benchmarks across countries, we rely upon the data, including country land characteristics and historical trends, to guide us in setting goalposts for what a good policy can achieve.

Historical trends of the percentage change in how land is allocated for a particular purpose provides an observable benchmark over time of how well the land use management is doing in achieving specific goals. In the case of carbon sequestration, we rank country policy based on carbon density, i.e., the ratio of carbon stock in living biomass over forest land (hectares) in 2018 compared to the 1990s average, when deforestation became noticeable. Higher (positive) values indicate that a country is prioritizing and allocating land to forests that are sequestering carbon. This method uses the country's existing land characteristics for the benchmark, rather than using a universal benchmark for how good a country's land use should be. The indicator for deforestation follows a similar rationale, and we use data on how well the country has maintained or increased forest coverage over time: the ratio of naturally regenerating forests in 2018 compared to the 1990s average.

Both extremely high and low outliers are censored and assigned the lower or upper goalpost value. Our approach is similar to the approach used by the SDG Index in setting upper targets based on known goals or science, and otherwise based on the average of top performers; and in setting lower targets at the 2.5th percentile of the distribution. Each SDG indicator distribution is censored, with values exceeding the upper bound scored 100, and values below the lower bound scored 0.[14]

The SSPI, Category and Pillar scores are aggregated using the arithmetic mean with equal weighting within each category and within each pillar. Our starting position was to use equal weights to calculate the mean because it is widely used and because it attenuates bias and arbitrariness. Using equal weights implies all policy indicators are equally important within a category, all categories are equally important within a pillar, and the three pillars are equally important within the SSPI. This reflects our assumption that the SSPI integrates a

[14] SDG Index 2020 Report, pp. 67-68, Table 11.
https://s3.amazonaws.com/sustainabledevelopment.report/2020/2020_sustainable_development_report.pdf

system of interrelated and indivisible set of policies that are equally important. The SDG Index also treats each SDG equally and uses fixed equal weights in aggregating the SDGs.[15] We conducted sensitivity tests on the weights used at two levels of aggregation—pillars and categories. For alternative weighting schemes, including unequal weights or geometric average, the rankings of countries were compared to the rankings achieved under equal weighting. The robustness tests indicated that there is little difference in country rankings or scores between scenarios using geometric and simple averages.

IV. Overview of SSPI Data and Rankings

Although social scientists have categorized countries by a variety of political economic systems, from free market to mixed economies to socialist, the SSPI was not created to represent political economies in this way. The government is assumed to play a major role in the economy, and each country's policies are scored by the extent to which each policy supports socioeconomic goals of protecting the environment, structuring markets for the common good, and providing basic goods and services to all residents.

The SSPI allows us to compare countries' national policies in aggregate (Table 1). Policies can also be compared for each Pillar (Tables 2-4) and Category (Tables 5-7), and can even be compared across countries at the indicator level, facilitating detailed comparisons of the strengths and weaknesses of specific policy packages across countries for all fifty-seven SSPI policy indicators.[16]

SSPI Country Rankings[17]

The SSPI scores for 2018 range from top-ranked Denmark (0.760, #1) to bottom-ranked India (0.438, #49). (See Table 1). The mean SSPI score is 0.628, with a median of 0.656 and a standard deviation of 0.090.

Western European countries are known for the role that governments play in structuring their markets and providing public goods and services for all people. The SSPI validates this impression, with European countries taking all ten of the top ten ranks in the SSPI. European countries dominate the top twenty-five ranks, with sixteenth-ranking Japan the only non-European country with an overall SSPI score in the top twenty-five. Most of these European countries belong to the European Union (EU), with Norway, Switzerland, Iceland, and now the United Kingdom being exceptions. We would expect members of the EU to have comparable SSPI scores because they often have comparable or compatible policies, with some relevant policies agreed to by all members (e.g., the Stockholm conventions, the European Convention on human rights.

The bottom twenty-five contain only three European countries (Poland, Portugal, and Greece) and fourteen of the G-20 (including Canada, Australia, Korea, and the United States), along with ten other countries at various stages of development.

The top twenty-five SSPI scores are more tightly clustered than the bottom twenty-four, with top-ranked Denmark (0.760, #1) only 16% higher than twenty-fifth-ranked Poland (0.656, #25) at the SSPI median score. The bottom twenty-four SSPI scores are more disparate, with New Zealand (0.655, #26) 50% higher than the bottom-ranked India (0.438, #49). Overall the top SSPI score is 74% higher than the bottom score.

The Three Pillars and Their Categories

Countries wanting to strengthen their policies in specific pillars or categories may learn from other countries' experiences in implementing the relevant policies. Comparing the scores for the Pillars, we see that country policies are weakest for Sustainability (top-ranked Latvia scores 0.706 and bottom-ranked Saudi Arabia scores

[15] SDG Index 2020 Report, p. 70.

[16] *See* the Main Data File for the data used in the analysis, available at https://docs.google.com/spreadsheets/d/1gI-8oqrsAELaEZzlq_OMsYYtZq7H581YGEHWFuuGRb4/edit?usp=sharing

[17] Throughout the paper, scores and country ranks are given in parentheses. For example, the SSPI score of 0.760 for Denmark, which is ranked #1, would be shown as (0.760, #1).

0.396; median 0.576). Market Structure pillar scores are somewhat higher (top-ranked Austria scores 0.761 and bottom-ranked United Arab Emirates scores 0.342; median .584). Public Goods is the strongest pillar and considerably higher (top-ranked Norway scores 0.907 and bottom-ranked India scores 0.489; median 0.781).

The scores for the categories in each pillar indicate how a country might improve policies in specific areas. For example, when we compare the minimum scores across the five categories in the Sustainability pillar, we see that Waste, Land and Energy policies have lower minima than the other categories. Comparing the categories in the Sustainability pillar, we see that Greenhouse Gases has the highest minimum score and average score, which indicates that these policies across countries are somewhat stronger than the other category policies. Waste stands out as having the lowest maximum and average category score in the Sustainability Pillar, which indicates weak waste policies across countries. Waste also has the lowest score of all the SSPI categories. Overall, the relatively low Sustainability scores reflect the world's important environmental shortcomings, including global deforestation, heavy reliance on fossil fuels for energy, overuse of groundwater, and wasteful consumption.

Comparison of the five Market Structure categories show that scores are lowest in the Inequality category, with a mean of 0.487, and a minimum score of 0.070. These low scores highlight the need for countries to improve their redistributive policies to guarantee shared prosperity for all. The Financial Sector has the highest category scores in the Market Structure pillar, with fairly strong policies across countries (Min 0.339, Max 0.939). Although the categories of Worker Wellbeing, Worker Engagement, and Taxes have similar medians, the maximum and minimum policy scores for Taxes are considerably lower compared to the other two categories, which indicates that countries overall tend to have relatively weak tax policies.

We noted that most countries have strong Public Goods policies, with the exception of the Global Role category. However the vital policies of health care, education, infrastructure, human rights, and public safety show variations in their minimum scores, which indicates the weakest policy observed, ranging from 0.249 for Education to 0.444 for Infrastructure. The strongest policies observed show less variation, ranging from 0.912 for Rights to 0.977 for Education.

Even a high-ranking country can improve specific policies. For example, top ranked Denmark only ranks seventh in Sustainability (0.638, #7). The category scores show that Denmark has relatively weak Waste policies (0.222, #49) and Greenhouse Gas policies (0.700, #21) that can be improved.

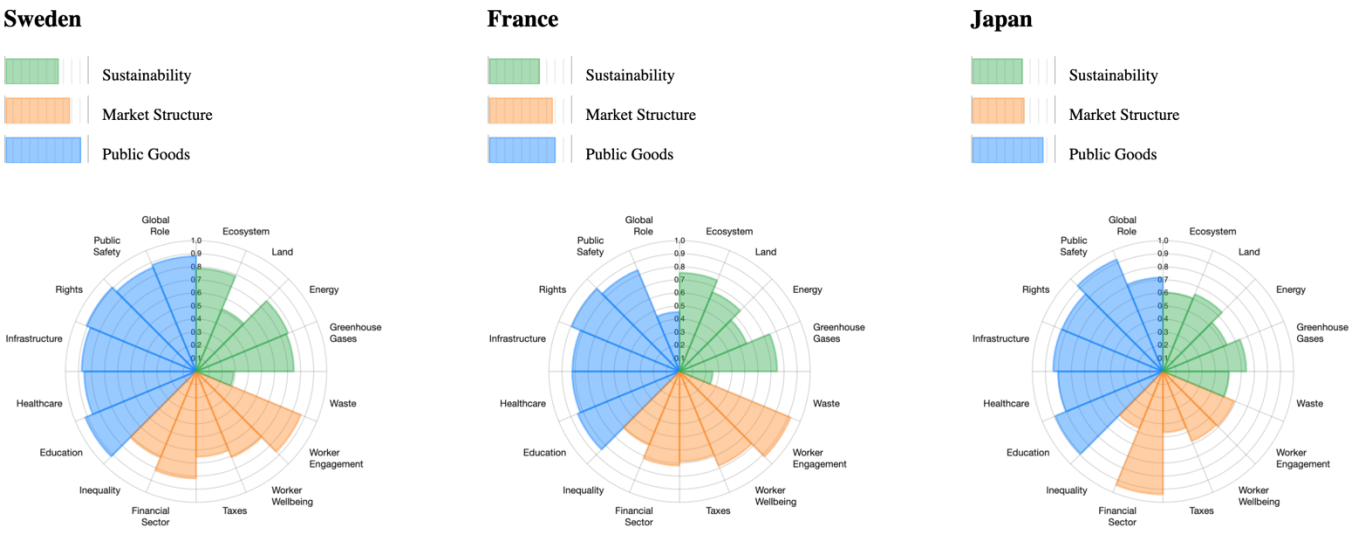
Austria ranks fourth in the SSPI (0.741, #4) and ranks first in Market Structure (0.761, #1), fifth in Public Goods (0.848, #5), and only twelfth in Sustainability (0.641, #12). The five Sustainability categories show that Austria is relatively weak in Greenhouse Gas (0.682, #25), Waste (0.372, #32) and Ecosystem (0.736, #20) policies. We can see that that all countries have some weak policy areas that can be improved, and the SSPI provides a framework to identify those weak policies.

Facilitating a comparative policy analysis across countries is one of the main contributions of the SSPI. The hierarchical structure of the SSPI allows us to analyze the components of the overall SSPI score in an internally coherent way that reflects the strength of country policies at progressive levels of detail as we move through the SSPI hierarchy from pillar down to category down to indicator.

V. Selected Country Comparisons

Next, we compare countries to demonstrate how countries with similar SSPI scores can differ across many policy indicators, or how the SSPI policies of countries that dominate the world scene in various ways compare. In the text below, indicators are noted in bold while categories and pillars are named as such.

Sweden, France, and Japan



Sustainability

Sweden performs well across all three pillars, but its weakest pillar is Sustainability. Despite several high scoring policies (most notably in **Air Quality** and **Energy from Coal**), Sweden's Land and Waste categories drag down its Sustainability Pillar score (0.621, #10). Sweden's middling score (0.517, #27) in the Land Category is driven primarily by its unsustainable forestry policies. Sweden ranks dead last in **Deforestation** among the SSPI countries, and its poor forest management also contributes to its low score of 0.242 in Natural Carbon Capture in forests and middling protections for **Biodiversity** (0.549, #24).[18] High levels of **E-waste Generation** (0.000, #48) and moderately high levels of **Municipal Solid Waste Generation** (0.401, #22) depress Sweden's score in the Waste Category (0.288, #41).[19]

Meanwhile, France (0.594, #20) and Japan (0.583, #23) score within 0.01 of each other on the Sustainability Pillar, but examining the categories shows that these similar scores are driven by two different baskets of policies. Although the Waste Category is Japan's weakest in absolute terms (0.560, #10), it scores well relative to many rich European countries which struggle to regulate wasteful consumption, as exemplified by France' Waste Category score (0.253, #44). Japan achieves top marks in **E-waste generation** and **Municipal Solid Waste Generation**, but a low **Recycling Rate** (0.070, #46) leaves Waste its category in Sustainability.

Japan's relative strength when compared with France and Sweden despite its absolute weakness in the Waste Category reflects a crucial trend identified in the SSPI: waste management and reduction policies are weak across all countries and are in dire need of policymakers' attention, but the problem is especially pressing in rich the countries that generate a disproportionate amount of the world's waste. Of all 16 Categories covered in the SSPI, Waste has the lowest average score, the lowest minimum scores, and the lowest maximum score. Japan's example may help rich European countries improve their policies, but Japan itself has much to learn in crafting sustainable policies for dealing with waste in the 21st century.

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[18] Swedish forestry is characterized by unsustainable levels of clearcutting and replanting under monoculture. *See* https://e360.yale.edu/features/swedens_green_veneer_hides_unsustainable_logging_practices, and https://news.mongabay.com/2022/06/how-unsustainable-is-swedens-forestry-very-qa-with-marcus-westberg-and-staffan-widstrand/.

[19] There is some evidence that Sweden's exceptionally low rank may be due to better accounting for E-Waste in Sweden under the Extend Producer Responsibility program since 1993 and the Sweden Regulation on Producer Responsibility for Electrical and Electronic Equipment of 2005. Accounting aside, Sweden is still known to produces unacceptably high levels of E-Waste. *See* https://smartcitysweden.com/best-practice/337/extended-producer-responsibility-in-sweden-towards-better-waste-management/ and https://www.te.com/en/utilities/product-compliance/e-waste-in-europe/sweden.html.

Japan puts up middling performances across the rest of the categories in Sustainability. Japan underperforms France the Ecosystem and Greenhouse Gases Categories, driven by weak Endangered Species Protection Policies and an overreliance on **Energy from Coal** in the wake of the 2011 Fukushima incident, respectively. France has a few strong points in Sustainability, especially its low reliance on coal (0.927, #13) and its relatively strong performance in the Land Category (0.657, #4).

Market Structure

France (0.743, #4) and Sweden (0.752, #3) have broadly similar baskets of policies in the Market Structure Pillar. Across all categories in Market Structure, France and Sweden differ at most by only 0.1 in score. France's higher **Corporate Tax Rate** (0.833, #2) and far-reaching **Unemployment Benefits Coverage** (1.000, #1) compare favorably with Sweden's (0.550, #25) and (0.602, #14), respectively. Meanwhile, Sweden's wage and redistributive policies are reflected in its outstanding **GINI Coefficient** (0.602, #2) compared to France's (0.449, #11) and generous **Paid Maternity Leave** (0.626, #8) compared with France's (0.346, #28). Both Sweden and France have policy packages to protect and promote **Worker Wellbeing** which rank in the Top 10 among all 49 SSPI countries, but each could learn from the successes of the other.

Japan lags far behind its European counterparts in the Market Structure Pillar (0.608, #21). Despite an exceptional performance in Financial Sector Category driven by a world-leading **Financial Depth** (0.945, #1), Japan's policymakers have much to learn from the taxation, redistribution, and labor-market policies administered by nations like France and Sweden. Japan's Worker Engagement category score, low by comparison with France and Sweden, is weighed down by a low rate of **Collective Bargaining Coverage** (0.170, #35).[20] Japan raises comparatively small amounts of **Tax Revenue** (0.233, #39) and experiences high levels of **Tax Evasion** (0.584, #43), contributing to its weak performance in the Tax Category (0.466, #38) in which Sweden (0.653, #10) and France (0.688) are top performers.

The weak policies indicated in Japan's Market Structure pillar score hold it back from being a top ten performer on the overall SSPI.

Public Goods

Of the three SSPI Pillars, Sweden, France, and Japan diverge most clearly in Public Goods, and most of that divergence is driven by differences in the Global Role Category.

Sweden's strong performance in Global Role (0.881, #2) reflects its strong policies in funding **Research and Development** (0.989, #2) and **Foreign Aid** (0.757, #5). Sweden's absolute score in **Arms Exports** remains high despite its low rank (0.897, #36). Sweden exports more arms than most SSPI countries, but its levels pale in comparison to those of the world's major exporters, of which France is a part (0.000, tied for #49). France's high levels of **Military Expenditure** (0.770, #36) contribute as well, but **Arms Exports** accounts for most of France's poor performance in the Global Role Category (0.455, #45), its weakest by far in the Public Goods Pillar. Japan's relatively strong performance in the Global Role Category (0.791, #10) is driven less by excellent policy than by the absence of bad policy. Japan's Global Role Category Rank of #10 exceeds each individual indicator rank in the category, which suggests that most countries have at least one policy indicator which requires serious attention.

Public Goods is Japan's strongest pillar in absolute and relative terms (0.810, #12). It is the global leader in the Public Safety Category (0.926, #1), with an exceptionally low **Incarceration Rate** (1.000, tied for #1) and **Intentional Homicide Rate** (0.968, #1). Japan's most important areas for improvement in Public Goods involve policies that pertain to gender: Japan lags in the Healthcare Category, dragged down by high Unmet Need for Family Planning (0.025, #46) and in the **Gender Equality Index** (0.676, #41). These weaknesses reflect the interaction between culture and policy in Japan.

20

China, Russia, and the United States

China, the Russian Federation (*hereinafter* 'Russia'), and the United States are the primary geopolitical hegemons on the world stage and significant economic powers in the global economy. Despite their global influence, their policy packages leave much to be desired from the perspective of the SSPI. In overall scores and across all three pillars, none of these global superpowers manage to climb out of the bottom fifteen ranks. This is an unexpectedly woeful performance for such ostensibly powerful countries.

Sustainability

In the Sustainability Pillar, China is the clear laggard (0.427, #46), but Russia (0.498, #36) and the United States (0.497, #37) are no shining examples of sustainable prosperity themselves.

China's low scores in the Sustainability Pillar are explained by its bottom-five performances across the Ecosystem (0.284, #48), Energy (0.253, #46), and Greenhouse Gases (0.521, #44) categories. China's levels of **Air Pollution** (0.000, tied for #49), generation of **Energy from Coal** (0.000, tied for #49), **Alternative Energy Generation** (0.137, #27), and **Energy Intensity** (0.579, #44) point to a package of interlinked policies in the energy sector that need serious policy attention from the CPC. The bright spots for Sustainability in China include comparatively good policies for **Deforestation** (0.563, #7) and **Water Management** (0.780, #9) in the Land Category and low levels of **E-waste Generation** (0.871, #5) and **Municipal Solid Waste Generation** (0.624, #4) in the Waste Category.

Russia (0.498, #36) and the United States (0.497, #37) have nearly identical Sustainability Pillar Scores but look quite different at the Category level. In the Energy Category, the United States (0.544, #26) outperforms Russia (0.384, #41) across all three indicators. In the Land Category, the United States looks like Russia on all indicators except for **Sustainable Nitrogen Management**, on which the US musters a top-ranked performance (0.724, #1) while Russia's policies (0.294, #39) lag behind. Meanwhile, Russia scores well above the United States in the Greenhouse Gases Category with a much better performance in **Beef Market** (0.872, #17) than the US (0.472, #43) and relatively poor showing in **Green Transport Index** (0.467, #41) that still manages to outperform the United States' dead last performance (0.161, #49).

The global superpowers are geographically large, and many of their sustainability challenges stem from their enormous size. Protecting ecosystems, generating and distributing clean energy, sustainably managing land, and facilitating the transportation of people and goods are challenging when operating at enormous scale.

Yet, as stewards of a combined 23.4% of the world's land area, the sustainability policies of these global hegemons are especially important, both because they are responsible for an outsized proportion of the world's land area and because their policies are looked to as models to follow by the rest of the world.

Market Structure

China, Russia, and the United States have similar scores and ranks in the Market Structure Pillar (within 0.015 of each other), but the category scores reveal very different underlying policy strengths and weaknesses.

The countries vary most across the Financial Sector Category. Russia underperforms (0.383, #48), with low-ranking scores across all the indicators in the category and a particularly atrocious **Financial Stability** (0.070, #48). Meanwhile, Financial Sector is the United States's best-ranked category performance (0.846, #6), and China gives a moderately strong (0.725, #20).

Russia offsets some of its poor performance in Financial Sector with a decent score in the Worker Wellbeing Category (0.650, #17), which is a particularly weak area for China (0.335, #43) and the United States (0.408, #40). Russia's biggest policy advantage in Worker Wellbeing is its high level of **Unemployment Benefits Coverage** (0.827, #9), in which the United States (0.283, #30) and China (0.231, #34) lag considerably. The United States stands out in the Worker Wellbeing Category for its abysmal, bottom-ranked score in **Paid Maternity Leave** (0.062, #49).

There are three key areas in which China, Russia, and the United States struggle to structure their markets for the benefit of workers. First, all three countries have insufficient redistributive policies reflected in poor scores in the Inequality Category. Second, these countries do poorly in the Tax, with the United States lagging furthest behind. All three collect a comparatively low proportion of output in **Tax Revenue** and struggle with **Tax Evasion**, with the United States particularly struggling with Evasion (0.482, #45). Third, all three countries score in the bottom 15 for **Senior Wellbeing** and **Fatal Workplace Injuries** in the Worker Wellbeing Category, with China performing especially poorly in both.

Public Goods

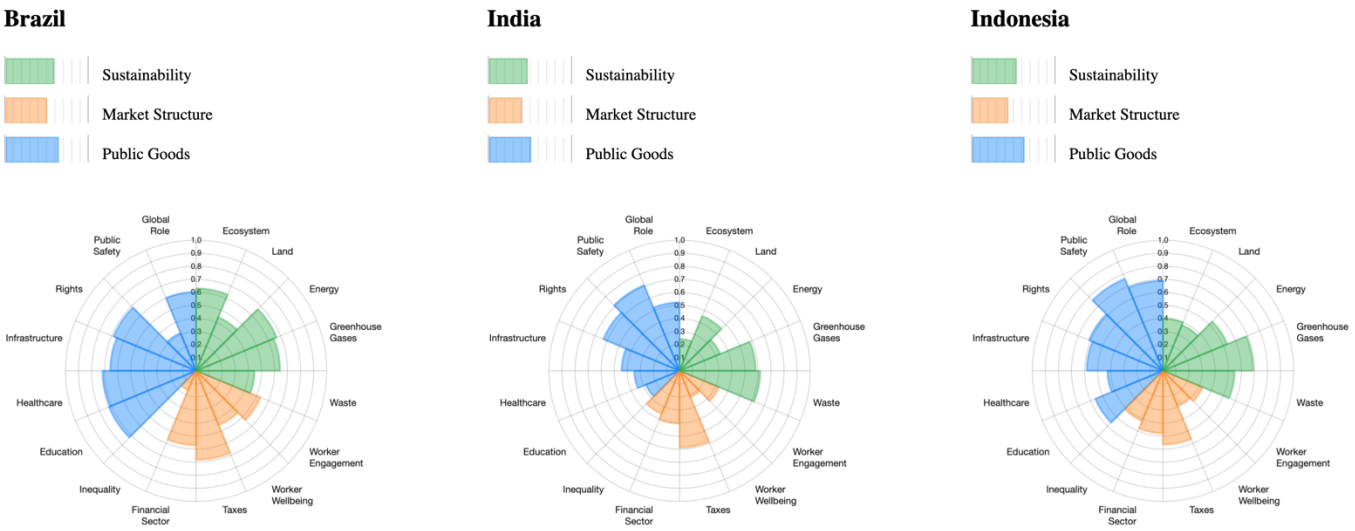
The United States (0.692, #37) leads China (0.647, #41) and Russia (0.567, #46) in the Public Goods Pillar, but all three countries rank in the bottom ten.

The U.S. lead in Public Goods is mainly explained by much better policies in the Rights Category and an edge in the Infrastructure Category. As expected, the United States leads Russia and China by a large margin (about 0.350 in score) in the Rights Category. Russia and China score in or near the bottom 10 for all indicators in the Rights Category, while the United States looks much more like the high performing countries in the SSPI, though it tends to score a bit lower than those top performers across all Rights indicators. The United States edges out China and Russia on nearly all infrastructure indicators as well, which reflects more mature infrastructure in the vast interior relative to its counterparts.

In the Healthcare Category, China leads (0.839, #14) and the US (0.794, #30) trails behind. A silver lining of China's draconian one child policies is world-leading access to family planning goods and services as measured by the **Unmet Need for Family Planning** Indicator (0.941, #1). Despite its huge population, China musters many more **Physicians per 10,000** (0.518, #17) than the United States (0.367, #36). Whether this amounts to a higher quality of and access to care is difficult to measure; what is clear, however, is that the United States is struggling to produce physicians at the rate other countries in the SSPI do. China also scores comparatively well in the Public Safety Category (0.769, #29), while the United States (0.578, #43) and Russia (0.429, #46) lag. China has a comparatively low rate of **Intentional Homicide** (0.969, #10) compared to the high rates policymakers tolerate in the United States (0.733, #40) and Russia (0.459, #45). Moreover, Russia (0.248, #48) and the United States (0.000, #49) are the two most carceral countries among the SSPI 49 as measured by the **Incarceration Rate** indicator.

Russia, China, and the United States are the bottom three countries in the SSPI in Global Role. These global hegemons are the world's major arms exporters (**Arms Exports**) and spend large proportions of their GDP on their militaries (**Military Expenditure**). The ugly practicalities that go into projecting global power may be one thing, but all three countries underinvest in **Research and Development** and **Foreign Aid** given the size and power of their economies as well.

Brazil, India, Indonesia



Brazil, India, and Indonesia are some of the most important lower-middle income countries in the SSPI. With large populations attempting to grow richer in the 21st century, these countries will be some of the world's most crucial laboratories for engineering sustainable and equitable growth. Their success in this project is vital for the planet's health, and the SSPI shows us that they have a long way to go.

Sustainability

All three countries achieve their highest pillar ranks Sustainability, but their low absolute scores show that much room for improvement remains. Each country faces unique policy challenges along its path to sustainable development.

Brazil, India, and Indonesia are strong performers in the Waste Category. All three countries have low **Recycling Rates**, but their rates of **Municipal Solid Waste Generation** and **E-Waste Generation** are lower than those seen in rich countries. Keeping waste generation low as wealth and incomes rise will be a major challenge in the coming decades for Brazil, India, and Indonesia.

India weakest policies in the Sustainability Pillar (0.447, #43) are its atrocious ecosystem protections, its poor control of **Air Pollution**, and its heavy reliance on **Energy from Coal**; its strongest points are in **Beef Market** (0.971, #1) and the Waste Category (0.618, #3). Across the board improvement is needed, and bottom ten scores in Ecosystem (0.243, #49), the Energy (0.337, #43), and Greenhouse Gases (0.582, #39) are good places for policymakers to start.

Indonesia ranks in the lower middle of the Sustainability Pillar (0.510, #33). The Land Category is Indonesia's worst (0.379, #41) in the Sustainability Pillar, driven by an appalling level of **Deforestation** (0.000, #48) and poor **Natural Carbon Capture** (0.188, #35). Indonesia fails to enforce its laws forbidding the slash-

and-burn agriculture practiced to make way for the palm oil /and pulp and paper industries.[21] This failure also leads to lackluster **Air Quality** (0.631, #31) in Indonesia and worsens air quality in neighboring countries. Indonesia must also do more to protect its Ecosystems and to find cleaner means of energy production, especially by reducing its dependence on **Energy from Coal** (0.527, #39).

Brazil does well in Ecosystem compared to India and Indonesia, but it must do more to protect the health of the Amazon basin given its vital importance for global biodiversity. Brazil's poor scores in **Deforestation** (0.104, #44) and **Natural Carbon Capture** (0.159, #37) betray its mismanagement of this crucial global resource. Brazil is also a world leader in **Alternative Energy Generation** (0.552, #5) because of its investments in hydroelectric generation capacity; to remain a global leader, it must find and invest in new ways to generate energy and resist the temptation to rely on its substantial fossil fuel deposits for its growing energy needs.[22]

Market Structure

The scores and rankings in the Market Structure Pillar look much like those of the overall SSPI: all three countries have low scores, with Brazil several ranks ahead of Indonesia, and Indonesia several ranks ahead of India. In general, Brazil's markets look more robust and better structured than those of Indonesia and India, but the government has not done enough to address the severe socioeconomic inequality in Brazilian society.

Brazil has a top ten performance in the Tax Category (0.682, #7), with low levels of **Tax Evasion** (0.943, #4) and the highest **Corporate Tax Rate** (0.850, #1) in the SSPI. India (0.750, #6) and Indonesia (0.625, #15) also score well in **Corporate Tax Rate**, but both could learn from Brazil's example in reducing tax evasion using digital compliance tools.[23] And all three countries must collect more in **Tax Revenue** in order to fund all the policies and programs they will need to continue developing.

Although Brazil manages to outscore India and Indonesia across the Worker Wellbeing (0.579, #31), Worker Engagement (0.451, #38), and Financial Sector (0.570, #36) categories, it still has a long way to go relative to the richer countries in the SSPI. In particular, the SSPI suggests that Brazil would benefit by focusing on irradicating what remains of the market for **Child Labor** (0.230, #42), expanding **Unemployment Benefits Coverage** (0.078, #40) and **Paid Maternity Leave** (0.330, #30), and improving **Public Access** (0.700, #40) to finance. Finally, Brazil must address its extreme and persistent Inequality (0.161, #48), which cuts along racial and geographic lines and presents Brazil's most pressing challenge to continuing development, especially from the perspective of shared prosperity.[24]

Indonesia edges out India across Worker Wellbeing, Inequality, and Financial Sector, but both countries must continue developing markets which promote prosperity without compromising on equity or wellbeing. India could focus on shoring up its **Financial Stability** (0.120, #47) to catch up to Indonesia in the Financial Sector category, but beyond that the policy areas the SSPI suggests that Indonesia and India need to focus on are remarkably similar: reducing **Fatal Workplace Injuries**, enforcing **Child Labor** laws more stringently, promoting **Participation in Paid Employment**, increasing **Collective Bargaining Coverage** and **Financial Depth**, implementing better programs for guaranteeing **Senior Wellbeing**, and designing better redistributive policy to address Inequality. Each of these are major policy improvements, but Indonesia and India will have the benefit of learning from other countries and from each other in creating successful policies along their development paths.

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[21] *See* https://www.greenpeace.org/static/planet4-international-stateless/2019/11/5c8a9799-burning-down-the-house-greenpeace-indonesia-fires-briefing.pdf and https://www.hrw.org/report/2019/09/23/when-we-lost-forest-we-lost-everything/oil-palm-plantations-and-rights-violations.

[22] The IEA explains that there are few economically and environmental viable opportunities for continued expansion of hydroelectric generation in Brazil. *See* https://www.iea.org/countries/brazil.

[23] *See Tax Administration 2022: Comparative Information on OECD and other Advanced and Emerging Economies*, p. 112 on "High Performance Inspection" in Brazil, available at https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/06/tax-administration-2022_5944859e/1e797131-en.pdf.

[24] *See* https://www.worldbank.org/en/topic/poverty/publication/poverty-and-equity-briefs

Public Goods

Brazil, India, and Indonesia all find themselves in the bottom ten for the Public Goods Pillar. They share bottom-ten scores across the Education, Healthcare, Infrastructure, and Rights categories. In each of these categories, Brazil's policies are stronger than those in India and Indonesia, and Indonesia tends to lead India.

India must continue to build out capacity and enhance quality across the core basic public goods of the Education, Healthcare, and Infrastructure categories. India has a bottom-ranked policy indicator in each of these categories: **Pupil-to-Teacher Ratio** (0.070, #49), **Births Attended by Skilled Personnel** (0.070, #49), and **Basic Sanitation Services** (0.442, #49), respectively. These areas are the most pressing, but India needs improvement across all indicators in these categories.

Brazil has a serious problem in the Public Safety Category (0.313, #49), ranking dead last in the SSPI. It has an off-the-charts rates of **Intentional Homicide** (0.000, #48), high **Incarceration Rates** (0.372, #46), and poor **Security Apparatus** and **Cybersecurity**. India and Indonesia have much lower **Incarceration Rates** than Brazil, although both could do with greater investment in their **Security Apparatus** and improvements to **Cybersecurity Policy**, and India could work on reducing **Intentional Homicide** (0.839, #37) though it remains a much safer society than Brazil.

The SSPI indicates several policy areas for Indonesia to address. The Healthcare Category is Indonesia's weakest in the Public Goods Pillar (0.425, #48), with bottom-ranked policy indicators in **Physicians per 10,000** (0.029, #49) and **Infant DPT Vaccine Coverage** (0.160, #49) and poor performances across the other indicators in Healthcare. In the Education Category, **Primary Net Enrollment** and **Secondary Net Enrollment** are low, and investments in **Basic Sanitation Services** and the **Availability and Quality of Electricity** are urgently needed.

All three countries could improve in the Rights Category. Indonesia (0.613, #42), India (0.632, #41), and Brazil (0.685, #39) teeter in the liminal band between moderately free countries like Singapore and Mexico and the decidedly unfree countries in the bottom seven like Turkey, China, and Russia. Protecting the **Rule of Law**, improving the **Quality of Public Goods and Services**, and increasing the levels of **Gender Equality** before the law are important areas that these countries can focus on to continue developing without compromising on fundamental freedoms.

Global Role is the strongest category in Public Goods for each of the three countries. Indonesia (0.690, #14) does a particularly good job at soliciting **Foreign Aid** (0.662, #7) and keeps its **Military Expenditure** (0.940, #3) low. Brazil and India should learn from Indonesia's example in **Foreign Aid**.

As these country comparisons demonstrate, even countries with a high pillar score have weak policies in specific areas that can be improved. In this way, high performing countries can look at countries with higher scores for specific policy indicators and learn from each other. A comparative analysis of countries illustrates how SSPI data allows researchers and policymakers to highlight key policy differences between countries, which in turn can motivate further research and public debate.

VI. Relationship of 2018 SSPI to Economic Performance Measures

We examine the statistical relationships between the SSPI and its pillars with eight widely used measures of economic outcome or performance (See Table 9). Three of the economic performance indices are broad measures of well-being outcomes: Sustainable Development Index (SDG) is based on the UNSDG's report [25] to track countries' efforts toward the SDGs; Legatum Prosperity Index (LPI)[26] assesses and ranks countries based on indicators to reflect nations' overall prosperity and quality of life, and Social Progress Index (SPI) [27]provides

[25] *See* https://unstats.un.org/sdgs/files/report/2018/thesustainabledevelopmentgoalsreport2018-en.pdf
[26] *The Legatum Prosperity Index 2023*, available at https://www.prosperity.com/rankings
[27] *See* https://www.socialprogress.org/

a framework to evaluate countries' overall well-being via social and environmental dimensions. Two measures are less broad, yet still include a range of outcomes: Human Development Index (HDI)[28] is a composite measurement that ranks countries' development levels based on three proxies for social well-being (income per person, life expectancy, and education); and Environmental Performance Index (EPI) [29]evaluates countries with a wide range of indicators of three policy objectives (ecosystem vitality, climate change, and environmental health). The remaining three metrics are more narrow measures: The Ecological Footprint Index (EFI)[30] measures how much area [global hectares] of biologically productive land and water a population requires to produce all the resources it consumes and to absorb the waste it generates, divided by population; the Cantril Ladder of Life Satisfaction (CL) [31]subjectively measures a person's current life satisfaction ("happiness") on a "ladder" with scale of 0 to 10; and Gross Domestic Product per capita (GDP-PPP), based on purchasing power parity in current international dollars, is a measure of national economic output per person based upon market output. [32]

We use simple linear regressions of the eight Performance measures (dependent variable) as a function of the policy measure, SSPI and the three Pillars, to analyze their relationship across the forty-nine countries. (See Regressions, Table 8.) The SSPI is positively related to seven of the eight Performance metrics at the 1% significance level; the exception is the Ecological Footprint, which is significant at the 5% level. However the variance explained varies widely across the eight regressions, from 0.856 for the SDG Index to 0.201 for the GDP per capita and 0.099 for the Ecological Footprint. The three broad Performance measures (SDG, LPI, SPI) closely track the SSPI: SDG is 0.659 SSPI ($\underline{R}^2$=0.856); LPI is 0.891 SSPI ($\underline{R}^2$=0.731); and SPI is 0.866 SSPI ($\underline{R}^2$=.817). The close statistical relationship of the SSPI with these broad metrics of economic well-being indicates that policies and socioeconomic performance move together, at least for these forty-nine countries. This pattern supports our goal of creating a policy index that is related to metrics of well-being to evaluate economic performance.

Although the HDI was designed to compare economic welfare in low-income countries, the HDI is statistically related the SSPI in the forty-nine mostly high-income countries because of the importance of income (HDI is 0.596 SSPI; $\underline{R}^2$=0.558). The Environmental Performance Index also closely tracks the SSPI (EPI is 1.013 SSPI; $\underline{R}^2$=0.656).

The three regressions of the more narrow measures of economic performance on the SSPI indicate weaker statistical relationships, although the Cantril Ladder tracks the SSPI fairly well (CL is 0.625 SSPI; $\underline{R}^2$=0.457) compared to the GDP per capita (GDP is 111,164 SSPI; $\underline{R}^2$=0.201), and the Ecological Footprint is a much weaker statistical relationship, as shown above.

We explore the relationship between the Performance measures and the SSPI pillars to see if the policy subgroups vary in their influence on how well the outcome measures track the SSPI. Comparing the regressions in Table 8, we see that the Performance measures have the strongest relationship with the Public Goods pillar, which is the most similar to the SSPI regression of the three Pillars. This reflects the Public Goods pillar having the highest scores (median, min and max) of the three pillars, which implies that the forty-nine countries have more adequate policies, compared to the Sustainability and Market Structure policies, in providing basic goods and services to the residents.

The regressions for the Ecological Footprint Index and GDP show neither of them is statistically related to the Sustainability pillar, while the EPI and the other five Performance measures are strongly related to Sustainability. Although somewhat surprising, this is consistent with the earlier observation that countries need

[28] *Human Development Report 2016: Human Development for Everyone.* UNDP (United Nations Development Programme). available at http://hdr.undp.org/en/2016-report

[29] *See* https://epi.yale.edu/about-epi

[30] *See* https://data.footprintnetwork.org

[31] Helliwell, Layard & Sachs. World Happiness Report. [2018]. Retrieved from https://worldhappiness.report/ed/2018/

[32] GDP per capita, PPP (current international $),World Development Indicators database, available at https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD

stronger Sustainability policies, and reflects that country policies are far from the Sustainability benchmark goals. Even the highest ranking countries for Sustainability have scores that can be dramatically improved, and these countries also have large carbon footprints. GDP does not track Sustainability policies because countries with both high and low GDP can be found in the both the top half and the bottom half of Sustainability rankings.

The regressions for the Performance measures show strongly significant coefficients on the Market Structure pillar (1% significance level), except for the Ecological Footprint being significant at the 10% level. Once again, the amount of variation explained varies across regressions.

The regressions for the Performance measures on Public Goods pillar demonstrate the strongest statistical relationship, with all eight metrics statistically significant at 1% level. Overall countries have stronger policy scores for public goods and services compared to Sustainability and Market Structure policies, and these policies that provide basic goods and services demonstrate how countries tend to perform well in areas considered vital to the common good.

The broad Environmental Performance Index significantly tracks the three pillars, while the narrow Ecological Footprint is not statistically related to the Sustainability pillar and only significantly related to the Public Goods pillar. As an EPI report points out, economies that provide relatively more services to people compared to relying on private goods based consumption will use fewer resources and exert less stress on the environment.[33]

In comparing the SSPI categories to the 2021 SDG dashboard, we see that the policy measures and the performance measures point out similar areas for the OECD countries to improve. In particular, the OECD countries need to accelerate progress in climate mitigation and biodiversity protection, and make greater progress in decoupling the economy from negative environmental impacts, and in reducing inequality.[34]

In summary, the SSPI has a stronger relationship with the three broad performance metrics than with the GDP, which is consistent with the expectation that the SSPI would track broad measures of well-being better than income per capita. The weaker relationship between the Performance metrics and the SSPI Sustainability policies underline the need for countries to improve their Sustainability policies to reach critical environmental goals, as is being urged by the United Nations IPCC. Unfortunately weak Sustainability policies persist even in the midst of the climate emergency.

The strong correlations between the SSPI and Performance metrics show that policy-focused and outcome-focused analyses yield broadly similar results on the top line, yet the variation in performance observed among similarly scoring countries at the Pillar and Category level demonstrates that these high-level similarities often mask substantial differences in underlying policies. Pillar, Category, and Indicator scores and ranks in the SSPI can guide the attention of policymakers to specific policy strengths and weaknesses, revealing a pathway for improving policies and outcomes.

VII. Conclusion

The Sustainable Shared-Prosperity Policy Index provides an aggregate metric of the socioeconomic policies for forty-nine countries. This systematic policy index divides policies into three pillars (Sustainability, Market Structure, and Public Goods) that represent the government functions of protecting the environment, structuring markets, and delivering programs and services. The three pillars are further divided into sixteen categories, which together contain fifty-seven policy indicators. The indicators, which are normalized to range from 0 to 1 with higher scores indicating better policies, display varying patterns across countries. Aggregations of indicators into categories, then into Pillars, and then into the SSPI are done using arithmetic means with

[33] Wendling, Z. A., Emerson, J. W., de Sherbinin, A., Esty, D. C., et al. (2020). *2020 Environmental Performance Index* https://lib.icimod.org/record/34927/files/HimalDoc_epi2020report20201006.pdf

[34] Sustainable Development Report 2021, pp 28-29. https://s3.amazonaws.com/sustainabledevelopment.report/2021/2021-sustainable-development-report.pdf pp 28-29

equal weights. The 2018 SSPI rankings range from top-ranked Denmark (score .760) down to bottom-ranked India (score .438). The patterns change somewhat for each Pillar, although countries tend to have similar rankings (high, medium, low) across Pillars.

The Sustainability pillar is the weakest of the three pillars. The United Nations COP 21 meeting in Paris in 2015 made the world realize that strong national policies, especially by the world's largest economies, are required to mitigate the climate crisis. Thus, the relatively low scores for the Sustainability pillar should be a top policy concern. When we compare countries across Sustainability categories, we find that even top-ranked countries can improve in specific policy areas related to Land, Energy, and Waste. In fact, all countries have scores in these three Sustainability categories that indicate unacceptable policies that can be improved by replacing fossil fuel energy with alternative energy generation, by ending global deforestation and overuse of groundwater, and by reducing wasteful consumption and improving reuse, recycling, and composting.

In the Market Structure categories, the top-ranked countries have strong policies in Financial Sector, Worker Engagement and Worker Wellbeing. However even the top-ranked countries can improve Tax and Inequality policies, which have weak scores across all countries. The low scores in Inequality indicate that policies need to be improved in order to provide basic consumption for all people and also reduce the large carbon footprint of wealthy people. (IEA 2023).

The Public Goods categories provide especially positive results in Education and Healthcare, which indicates that policies can be improved to make people's lives better when it is a national goal. The Public Goods categories of Infrastructure, Rights, and Public Safety also have strong policies, and Global Role policies are weaker with large variation across countries. Overall, the GDP, Cantril Ladder, and Ecological Footprint have the weakest statistical relationship with the SSPI and three pillars, which indicates that these broad but narrowly defined metrics leave much to be explained in the observed performance of national economies.

The SSPI allows a direct comparison of countries by their scores across pillars, categories, and policy indicators. Our country comparisons demonstrate how even countries with high scores can improve specific policies that have weak scores, and how countries with similar scores vary in their policy systems.

Simple linear regressions show how the SSPI tracks positively and significantly across countries with seven well-known economic output or performance metrics (SDG Index, Legatum Prosperity Index, Social Progress Indicator, Human Development Index, Environmental Performance Index, Cantril Ladder, and GDP per capita), and is less significant with the Ecological Footprint Index. The Sustainability pillar tracks the six broader performance metrics but not the Ecological Footprint or GDP, and overall the statistical relationships of the performance metrics and the Sustainability Pillar are the weakest of the three pillars. The Public Goods is the pillar most closely related to the Performance metrics, and even the Ecological Footprint is significantly related to Public Goods.

These results indicate that national policies are related to broad measures of economic performance and output. The SSPI provides the foundation for countries to create policies that support the environment and reduce inequality while providing social programs that improve the quality of life in a market economy that is structured for the common good. The deep global recession caused by the pandemic in 2020-2021 provided countries with the opportunity to improve their policies in rebuilding their economies. Unfortunately the economic recovery does not appear to be based on improved policies that reduce greenhouse gas emissions. (Harvey 2017) Our SSPI research team is now collecting SSPI data over the past decade to analyze how policies have changed over time and across countries.

In summary, the SSPI shows how to measure and compare policies across countries and demonstrates that policies matter for socioeconomic performance. We hope the SSPI proves useful for evaluating policies across countries and for highlighting opportunities for countries to improve their policies.

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Table 1. Sustainable Shared-Prosperity Index

Rank	Country	Score
1	Denmark	0.760
2	Norway	0.759
3	Sweden	0.752
4	Austria	0.741
5	Belgium	0.734
6	Iceland	0.727
7	Finland	0.723
8	Slovenia	0.717
9	Germany	0.708
10	France	0.705
11	Netherlands	0.703
12	Luxembourg	0.702
13	Czech Republic	0.696
14	Switzerland	0.686
15	Latvia	0.680
16	Japan	0.676
17	Spain	0.675
18	Slovak Republic	0.675
19	Lithuania	0.671
20	Estonia	0.670
21	United Kingdom	0.670
22	Italy	0.666
23	Ireland	0.662
24	Hungary	0.658
25	Poland	0.656
26	New Zealand	0.655
27	Portugal	0.651
28	Australia	0.643
29	Uruguay	0.640
30	Canada	0.637
31	Singapore	0.630
32	Greece	0.624
33	Korea, Rep.	0.615
34	Israel	0.567
35	Argentina	0.564
36	United States	0.560
37	Chile	0.556
38	Brazil	0.554
39	China	0.519
40	Turkey	0.518
41	Russian Federation	0.516
42	Indonesia	0.511
43	Kuwait	0.499
44	Mexico	0.497
45	United Arab Emirates	0.493
46	Colombia	0.489
47	South Africa	0.471
48	Saudi Arabia	0.457
49	India	0.438

Table 2. Sustainability Scores

Rank	Country	SUS
1	Latvia	0.706
2	Norway	0.647
3	Hungary	0.642
4	Slovenia	0.641
5	Czech Republic	0.640
6	Lithuania	0.639
7	Denmark	0.638
8	Slovak Republic	0.628
9	Germany	0.621
10	Sweden	0.621
11	Belgium	0.617
12	Austria	0.614
13	Poland	0.613
14	Switzerland	0.607
15	Iceland	0.603
16	Estonia	0.602
17	Finland	0.597
18	United Kingdom	0.595
19	Ireland	0.594
20	France	0.593
21	Uruguay	0.593
22	Italy	0.587
23	Japan	0.583
24	Luxembourg	0.582
25	Spain	0.576
26	Singapore	0.574
27	Netherlands	0.573
28	Brazil	0.567
29	Portugal	0.565
30	Greece	0.549
31	Colombia	0.525
32	Argentina	0.519
33	Indonesia	0.510
34	Canada	0.507
35	Korea, Rep.	0.502
36	Russian Federation	0.499
37	United States	0.497
38	New Zealand	0.493
39	Mexico	0.489
40	Turkey	0.481
41	Chile	0.479
42	Australia	0.475
43	India	0.447
44	United Arab Emirates	0.445
45	South Africa	0.436
46	China	0.427
47	Israel	0.419
48	Kuwait	0.412
49	Saudi Arabia	0.396

Table 3. Market Structure Score

Rank	Country	MS
1	Austria	0.761
2	Denmark	0.757
3	Sweden	0.752
4	France	0.743
5	Iceland	0.743
6	Belgium	0.740
7	Finland	0.725
8	Norway	0.722
9	Slovenia	0.695
10	Netherlands	0.693
11	Germany	0.670
12	Czech Republic	0.666
13	Luxembourg	0.662
14	New Zealand	0.658
15	Australia	0.651
16	Spain	0.651
17	Slovak Republic	0.635
18	Italy	0.633
19	United Kingdom	0.632
20	Estonia	0.617
21	Japan	0.608
22	Switzerland	0.605
23	Poland	0.597
24	Canada	0.596
25	Ireland	0.584
26	Hungary	0.578
27	Lithuania	0.575
28	Portugal	0.566
29	Uruguay	0.562
30	Latvia	0.555
31	Greece	0.552
32	Israel	0.547
33	Korea, Rep.	0.541
34	Singapore	0.502
35	Chile	0.491
36	United States	0.490
37	China	0.484
38	Brazil	0.480
39	Argentina	0.478
40	Russian Federation	0.475
41	Kuwait	0.422
42	Indonesia	0.415
43	South Africa	0.415
44	Turkey	0.413
45	Mexico	0.407
46	Colombia	0.395
47	Saudi Arabia	0.387
48	India	0.378
49	United Arab Emirates	0.342

Table 4. Public Goods Score

Rank	Country	PG
1	Norway	0.907
2	Denmark	0.885
3	Sweden	0.884
4	Luxembourg	0.863
5	Austria	0.848
6	Finland	0.848
7	Switzerland	0.847
8	Netherlands	0.845
9	Belgium	0.844
10	Japan	0.836
11	Iceland	0.836
12	Germany	0.834
13	Portugal	0.822
14	Slovenia	0.815
15	New Zealand	0.813
16	Singapore	0.813
17	Canada	0.810
18	Ireland	0.807
19	Australia	0.802
20	Korea, Rep.	0.801
21	Spain	0.800
22	Lithuania	0.798
23	Estonia	0.792
24	Czech Republic	0.781
25	United Kingdom	0.781
26	France	0.779
27	Latvia	0.779
28	Italy	0.777
29	Greece	0.771
30	Uruguay	0.765
31	Slovak Republic	0.762
32	Poland	0.758
33	Hungary	0.753
34	Israel	0.736
35	Chile	0.698
36	Argentina	0.695
37	United States	0.692
38	United Arab Emirates	0.691
39	Kuwait	0.664
40	Turkey	0.661
41	China	0.647
42	Brazil	0.617
43	Indonesia	0.606
44	Mexico	0.594
45	Saudi Arabia	0.589
46	Russian Federation	0.576
47	South Africa	0.562
48	Colombia	0.547
49	India	0.489

Table 5a: Ecosystem Category Score

Rank	Country	Ecosystem
1	Latvia	0.975
2	Estonia	0.966
3	Lithuania	0.939
4	Czech Republic	0.937
5	Denmark	0.929
6	Belgium	0.919
7	Poland	0.913
8	Slovak Republic	0.890
9	Netherlands	0.879
10	Germany	0.871
11	Ireland	0.854
12	Hungary	0.849
13	Finland	0.837
14	Slovenia	0.807
15	Italy	0.794
16	Greece	0.791
17	Luxembourg	0.788
18	Sweden	0.787
19	France	0.754
20	Austria	0.736
21	Norway	0.733
22	United Kingdom	0.718
23	Switzerland	0.713
24	Portugal	0.705
25	Spain	0.665
26	Brazil	0.631
27	Canada	0.617
28	United Arab Emirates	0.610
29	Japan	0.604
30	Australia	0.586
31	Russian Federation	0.574
32	Argentina	0.558
33	Kuwait	0.549
34	Saudi Arabia	0.518
35	United States	0.502
36	Colombia	0.492
37	Uruguay	0.491
38	Iceland	0.477
39	South Africa	0.455
40	Singapore	0.421
41	Korea, Rep.	0.418
42	Mexico	0.418
43	Chile	0.408
44	Indonesia	0.401
45	Turkey	0.397
46	Israel	0.351
47	New Zealand	0.317
48	China	0.285
49	India	0.243

Table 5b: Land Category Score

Rank	Country	Land
1	Ireland	0.748
2	Czech Republic	0.683
3	United Kingdom	0.661
4	France	0.657
5	Slovenia	0.649
6	Japan	0.639
7	Denmark	0.637
8	Iceland	0.636
9	Germany	0.635
10	Latvia	0.634
11	Austria	0.630
12	Poland	0.621
13	Uruguay	0.615
14	Norway	0.596
15	Belgium	0.590
16	Netherlands	0.575
17	Slovak Republic	0.574
18	Italy	0.572
19	Switzerland	0.565
20	Turkey	0.559
21	Spain	0.558
22	Lithuania	0.555
23	United States	0.555
24	Finland	0.555
25	Estonia	0.554
26	China	0.527
27	Sweden	0.517
28	Singapore	0.502
29	Canada	0.497
30	Australia	0.486
31	Hungary	0.483
32	Luxembourg	0.482
33	India	0.454
34	New Zealand	0.453
35	Russian Federation	0.453
36	Argentina	0.444
37	Brazil	0.443
38	Korea, Rep.	0.430
39	Chile	0.412
40	Mexico	0.411
41	Indonesia	0.379
42	Portugal	0.353
43	South Africa	0.351
44	Colombia	0.348
45	Greece	0.333
46	Israel	0.275
47	Kuwait	0.266
48	United Arab Emirates	0.262
49	Saudi Arabia	0.169

Table 5c: Energy Category Score

Rank	Country	Energy
1	Norway	0.848
2	Sweden	0.762
3	Uruguay	0.761
4	Denmark	0.702
5	New Zealand	0.684
6	Finland	0.679
7	Brazil	0.668
8	Iceland	0.667
9	Switzerland	0.658
10	Lithuania	0.655
11	Austria	0.650
12	Portugal	0.643
13	Latvia	0.640
14	Ireland	0.615
15	Luxembourg	0.605
16	Estonia	0.604
17	Spain	0.604
18	Colombia	0.600
19	United Kingdom	0.577
20	Germany	0.574
21	Canada	0.563
22	Italy	0.560
23	France	0.556
24	Greece	0.550
25	Australia	0.549
26	United States	0.544
27	Argentina	0.539
28	Slovenia	0.536
29	Indonesia	0.533
30	Netherlands	0.530
31	Japan	0.530
32	Belgium	0.520
33	Chile	0.516
34	Hungary	0.504
35	Czech Republic	0.495
36	Slovak Republic	0.474
37	Mexico	0.467
38	Israel	0.466
39	Singapore	0.463
40	Poland	0.451
41	Russian Federation	0.384
42	Korea, Rep.	0.352
43	India	0.337
44	Turkey	0.335
45	South Africa	0.333
46	China	0.253
47	United Arab Emirates	0.248
48	Saudi Arabia	0.209
49	Kuwait	0.176

Table 5d: Greenhouse Gases Category Score

Rank	Country	Ecosystem
1	Norway	0.834
2	Singapore	0.817
3	Latvia	0.817
4	Hungary	0.799
5	Iceland	0.781
6	Italy	0.777
7	Switzerland	0.776
8	United Kingdom	0.764
9	Sweden	0.748
10	France	0.747
11	Portugal	0.747
12	Belgium	0.746
13	Spain	0.733
14	Slovak Republic	0.731
15	Lithuania	0.725
16	Kuwait	0.719
17	United Arab Emirates	0.712
18	Mexico	0.708
19	New Zealand	0.708
20	Saudi Arabia	0.704
21	Denmark	0.700
22	Greece	0.691
23	Indonesia	0.690
24	Finland	0.688
25	Austria	0.683
26	Luxembourg	0.666
27	Russian Federation	0.661
28	Slovenia	0.657
29	Chile	0.649
30	Germany	0.648
31	Uruguay	0.647
32	Brazil	0.643
33	Turkey	0.643
34	Japan	0.638
35	Korea, Rep.	0.637
36	Israel	0.623
37	Argentina	0.601
38	Colombia	0.599
39	India	0.582
40	Czech Republic	0.580
41	Netherlands	0.578
42	Canada	0.575
43	Ireland	0.531
44	China	0.521
45	Poland	0.484
46	Estonia	0.482
47	South Africa	0.450
48	United States	0.448
49	Australia	0.335

Table 5e: Waste Category Score

Rank	Country	Land
1	Korea, Rep.	0.675
2	Singapore	0.665
3	India	0.618
4	Poland	0.594
5	South Africa	0.590
6	Colombia	0.587
7	Hungary	0.575
8	Slovenia	0.559
9	China	0.552
10	Indonesia	0.548
11	Japan	0.506
12	Czech Republic	0.504
13	Turkey	0.469
14	Slovak Republic	0.469
15	Latvia	0.463
16	Iceland	0.456
17	Argentina	0.453
18	Uruguay	0.452
19	Brazil	0.448
20	Mexico	0.440
21	United States	0.436
22	Russian Federation	0.421
23	Australia	0.417
24	Chile	0.409
25	Estonia	0.405
26	United Arab Emirates	0.392
27	Israel	0.380
28	Portugal	0.378
29	Greece	0.378
30	Saudi Arabia	0.377
31	Germany	0.377
32	Austria	0.372
33	Luxembourg	0.369
34	Kuwait	0.349
35	Switzerland	0.325
36	Spain	0.322
37	Lithuania	0.319
38	Belgium	0.312
39	New Zealand	0.303
40	Netherlands	0.301
41	Sweden	0.288
42	Canada	0.281
43	United Kingdom	0.257
44	France	0.253
45	Italy	0.235
46	Finland	0.228
47	Ireland	0.225
48	Norway	0.224
49	Denmark	0.222

Table 6a: Worker Engagement Category Score

Rank	Country	Ecosystem
1	France	0.919
2	Belgium	0.911
3	Iceland	0.892
4	Austria	0.875
5	Sweden	0.867
6	Finland	0.855
7	Netherlands	0.845
8	Denmark	0.834
9	Slovenia	0.809
10	Italy	0.806
11	Spain	0.803
12	Germany	0.796
13	Norway	0.773
14	Luxembourg	0.750
15	Switzerland	0.725
16	Czech Republic	0.705
17	Australia	0.694
18	Uruguay	0.683
19	United Kingdom	0.668
20	Canada	0.660
21	Slovak Republic	0.637
22	Ireland	0.635
23	Poland	0.625
24	New Zealand	0.614
25	Estonia	0.610
26	Latvia	0.594
27	Japan	0.590
28	Lithuania	0.576
29	Argentina	0.569
30	Hungary	0.564
31	Portugal	0.557
32	Brazil	0.533
33	Singapore	0.520
34	Israel	0.485
35	Greece	0.473
36	China	0.459
37	Russian Federation	0.450
38	United States	0.438
39	South Africa	0.404
40	Colombia	0.360
41	Korea, Rep.	0.356
42	Chile	0.350
43	Indonesia	0.328
44	India	0.327
45	Kuwait	0.311
46	Saudi Arabia	0.311
47	United Arab Emirates	0.311
48	Mexico	0.282
49	Turkey	0.250

Table 6b: Worker Wellbeing Category Score

Rank	Country	Land
1	Austria	0.882
2	Germany	0.854
3	Denmark	0.799
4	France	0.781
5	Iceland	0.774
6	Finland	0.768
7	Belgium	0.746
8	Slovenia	0.711
9	Sweden	0.710
10	Netherlands	0.708
11	Norway	0.704
12	Ireland	0.694
13	Czech Republic	0.688
14	Luxembourg	0.683
15	Lithuania	0.664
16	Italy	0.657
17	Russian Federation	0.650
18	Poland	0.638
19	Spain	0.617
20	Greece	0.613
21	Hungary	0.606
22	United Kingdom	0.599
23	Slovak Republic	0.590
24	Canada	0.588
25	Switzerland	0.588
26	Portugal	0.587
27	New Zealand	0.586
28	Japan	0.577
29	Chile	0.565
30	Australia	0.564
31	Estonia	0.563
32	Uruguay	0.559
33	Israel	0.545
34	Latvia	0.518
35	Singapore	0.502
36	Korea, Rep.	0.469
37	Argentina	0.466
38	Brazil	0.451
39	Turkey	0.435
40	United States	0.408
41	Kuwait	0.352
42	Mexico	0.343
43	China	0.335
44	Saudi Arabia	0.324
45	United Arab Emirates	0.302
46	Indonesia	0.290
47	South Africa	0.290
48	Colombia	0.223
49	India	0.218

Table 6c: Tax Category Score

Rank	Country	Energy
1	Greece	0.731
2	New Zealand	0.712
3	South Africa	0.710
4	Denmark	0.705
5	France	0.688
6	Colombia	0.684
7	Brazil	0.682
8	Australia	0.675
9	Austria	0.658
10	Sweden	0.653
11	Belgium	0.649
12	Uruguay	0.640
13	Italy	0.638
14	Mexico	0.636
15	Portugal	0.632
16	Argentina	0.632
17	Iceland	0.630
18	Latvia	0.622
19	Norway	0.621
20	Chile	0.620
21	Israel	0.619
22	Estonia	0.616
23	Finland	0.606
24	Slovenia	0.605
25	Slovak Republic	0.603
26	India	0.588
27	Spain	0.582
28	Korea, Rep.	0.574
29	Poland	0.573
30	Indonesia	0.566
31	Turkey	0.557
32	Czech Republic	0.556
33	Lithuania	0.555
34	United Kingdom	0.540
35	China	0.516
36	Hungary	0.507
37	Russian Federation	0.488
38	Japan	0.466
39	Netherlands	0.463
40	Saudi Arabia	0.461
41	Canada	0.447
42	Ireland	0.421
43	Luxembourg	0.419
44	Germany	0.417
45	United States	0.414
46	Kuwait	0.386
47	Singapore	0.346
48	United Arab Emirates	0.174
49	Switzerland	0.167

Table 6d: Financial Sector Category Score

Rank	Country	Ecosystem
1	Japan	0.939
2	Switzerland	0.934
3	Luxembourg	0.901
4	Korea, Rep.	0.871
5	New Zealand	0.868
6	United States	0.846
7	Australia	0.834
8	Canada	0.831
9	United Kingdom	0.825
10	Singapore	0.824
11	Sweden	0.818
12	Norway	0.817
13	Denmark	0.798
14	Netherlands	0.776
15	Germany	0.761
16	Finland	0.757
17	Estonia	0.749
18	Austria	0.748
19	Belgium	0.747
20	China	0.725
21	Israel	0.723
22	France	0.720
23	Spain	0.707
24	Kuwait	0.697
25	Iceland	0.686
26	Chile	0.662
27	Lithuania	0.641
28	Slovenia	0.629
29	Ireland	0.620
30	Slovak Republic	0.617
31	Czech Republic	0.610
32	South Africa	0.604
33	Hungary	0.599
34	Saudi Arabia	0.588
35	Poland	0.582
36	Brazil	0.570
37	United Arab Emirates	0.549
38	Latvia	0.544
39	Portugal	0.540
40	Uruguay	0.529
41	Italy	0.512
42	Turkey	0.494
43	Colombia	0.487
44	Indonesia	0.478
45	Mexico	0.442
46	Greece	0.422
47	India	0.404
48	Russian Federation	0.383
49	Argentina	0.339

Table 6e: Inequality Category Score

Rank	Country	Land
1	Czech Republic	0.773
2	Iceland	0.733
3	Slovak Republic	0.727
4	Slovenia	0.722
5	Sweden	0.713
6	Norway	0.696
7	Netherlands	0.673
8	Belgium	0.649
9	Denmark	0.648
10	Austria	0.640
11	Finland	0.639
12	Hungary	0.615
13	Switzerland	0.610
14	France	0.609
15	Poland	0.565
16	Luxembourg	0.556
17	Italy	0.550
18	Ireland	0.547
19	Estonia	0.545
20	Spain	0.544
21	United Kingdom	0.529
22	Germany	0.524
23	Greece	0.522
24	Portugal	0.515
25	New Zealand	0.512
26	Latvia	0.499
27	Australia	0.490
28	Japan	0.471
29	Canada	0.453
30	Lithuania	0.441
31	Korea, Rep.	0.437
32	Indonesia	0.416
33	Russian Federation	0.404
34	Uruguay	0.398
35	Argentina	0.386
36	China	0.384
37	United Arab Emirates	0.375
38	Kuwait	0.365
39	Israel	0.363
40	India	0.357
41	United States	0.346
42	Mexico	0.332
43	Turkey	0.331
44	Singapore	0.320
45	Chile	0.256
46	Saudi Arabia	0.251
47	Colombia	0.219
48	Brazil	0.161
49	South Africa	0.070

Table 7a: Education Category Score

Rank	Country	Ecosystem
1	Norway	0.977
2	Iceland	0.968
3	Lithuania	0.947
4	Austria	0.934
5	Denmark	0.933
6	Uruguay	0.932
7	Singapore	0.930
8	Slovenia	0.930
9	Finland	0.925
10	Spain	0.920
11	Italy	0.919
12	Sweden	0.918
13	Canada	0.916
14	Belgium	0.899
15	Argentina	0.896
16	Germany	0.893
17	Japan	0.892
18	Latvia	0.892
19	Portugal	0.892
20	New Zealand	0.879
21	United Kingdom	0.877
22	Luxembourg	0.869
23	Netherlands	0.867
24	Australia	0.865
25	Ireland	0.859
26	Poland	0.857
27	Czech Republic	0.848
28	France	0.844
29	United States	0.842
30	Estonia	0.842
31	China	0.833
32	Switzerland	0.821
33	Israel	0.811
34	Greece	0.805
35	Hungary	0.803
36	Russian Federation	0.792
37	Korea, Rep.	0.789
38	Slovak Republic	0.747
39	United Arab Emirates	0.730
40	Brazil	0.723
41	Chile	0.715
42	Turkey	0.712
43	Kuwait	0.658
44	Mexico	0.636
45	Saudi Arabia	0.598
46	Indonesia	0.561
47	Colombia	0.416
48	India	0.279
49	South Africa	0.249

Table 7b: Healthcare Category Score

Rank	Country	Land
1	Greece	0.923
2	Portugal	0.866
3	Switzerland	0.866
4	Norway	0.863
5	Spain	0.858
6	Germany	0.857
7	Sweden	0.856
8	Korea, Rep.	0.849
9	Luxembourg	0.845
10	Czech Republic	0.844
11	Hungary	0.842
12	Israel	0.841
13	Belgium	0.839
14	China	0.839
15	Netherlands	0.829
16	Austria	0.829
17	Kuwait	0.826
18	Italy	0.824
19	Latvia	0.824
20	Lithuania	0.823
21	France	0.821
22	Russian Federation	0.820
23	Ireland	0.819
24	Denmark	0.812
25	Uruguay	0.812
26	Singapore	0.804
27	Japan	0.804
28	Slovak Republic	0.800
29	Australia	0.798
30	United States	0.794
31	United Kingdom	0.792
32	Estonia	0.786
33	Finland	0.782
34	Saudi Arabia	0.781
35	Slovenia	0.777
36	New Zealand	0.772
37	Poland	0.770
38	Iceland	0.769
39	Canada	0.757
40	Chile	0.743
41	United Arab Emirates	0.740
42	Turkey	0.721
43	Brazil	0.717
44	Argentina	0.691
45	Mexico	0.649
46	South Africa	0.565
47	Colombia	0.552
48	Indonesia	0.425
49	India	0.347

Table 7c: Infrastructure Category Score

Rank	Country	Energy
1	Singapore	0.940
2	Luxembourg	0.918
3	Denmark	0.897
4	Netherlands	0.885
5	Belgium	0.880
6	Switzerland	0.877
7	Sweden	0.876
8	Slovenia	0.872
9	Finland	0.861
10	Austria	0.854
11	Norway	0.854
12	Czech Republic	0.849
13	New Zealand	0.848
14	Slovak Republic	0.845
15	Estonia	0.841
16	Japan	0.840
17	Ireland	0.839
18	Korea, Rep.	0.836
19	Germany	0.832
20	Israel	0.831
21	United Kingdom	0.826
22	France	0.820
23	Spain	0.818
24	Lithuania	0.817
25	Portugal	0.815
26	Hungary	0.808
27	Latvia	0.806
28	Iceland	0.797
29	Poland	0.797
30	Greece	0.795
31	Canada	0.795
32	Italy	0.791
33	Uruguay	0.783
34	United States	0.781
35	Australia	0.772
36	United Arab Emirates	0.770
37	Chile	0.748
38	Saudi Arabia	0.747
39	Kuwait	0.738
40	Turkey	0.685
41	Argentina	0.684
42	Russian Federation	0.661
43	Brazil	0.658
44	Colombia	0.631
45	South Africa	0.624
46	China	0.610
47	Indonesia	0.584
48	Mexico	0.561
49	India	0.444

Table 7d: Rights Category Score

Rank	Country	Ecosystem
1	Norway	0.912
2	Sweden	0.909
3	Netherlands	0.907
4	Denmark	0.905
5	Germany	0.905
6	Switzerland	0.902
7	New Zealand	0.902
8	Finland	0.900
9	Belgium	0.896
10	France	0.895
11	Spain	0.885
12	Austria	0.883
13	United Kingdom	0.877
14	Iceland	0.877
15	Canada	0.876
16	Portugal	0.875
17	Luxembourg	0.873
18	Australia	0.864
19	Ireland	0.852
20	Estonia	0.850
21	Uruguay	0.844
22	Chile	0.842
23	Lithuania	0.841
24	Japan	0.837
25	Latvia	0.837
26	United States	0.832
27	Slovenia	0.825
28	Italy	0.822
29	Czech Republic	0.817
30	Slovak Republic	0.812
31	Greece	0.807
32	Israel	0.792
33	Korea, Rep.	0.791
34	Poland	0.759
35	Argentina	0.752
36	South Africa	0.728
37	Mexico	0.703
38	Singapore	0.701
39	Brazil	0.685
40	Hungary	0.674
41	India	0.631
42	Indonesia	0.613
43	Colombia	0.589
44	Turkey	0.511
45	Kuwait	0.492
46	United Arab Emirates	0.482
47	China	0.478
48	Russian Federation	0.472
49	Saudi Arabia	0.330

Table 7e: Public Safety Category Score

Rank	Country	Land
1	Japan	0.927
2	Denmark	0.905
3	Netherlands	0.902
4	Norway	0.901
5	Luxembourg	0.898
6	Switzerland	0.892
7	Slovenia	0.881
8	Austria	0.880
9	Finland	0.878
10	Korea, Rep.	0.872
11	Germany	0.872
12	Singapore	0.867
13	Portugal	0.864
14	Sweden	0.861
15	Canada	0.848
16	Ireland	0.848
17	Iceland	0.841
18	France	0.839
19	Spain	0.838
20	Belgium	0.834
21	United Arab Emirates	0.832
22	Australia	0.827
23	New Zealand	0.813
24	Poland	0.812
25	Slovak Republic	0.800
26	Hungary	0.796
27	Estonia	0.795
28	Italy	0.795
29	China	0.769
30	Indonesia	0.763
31	Kuwait	0.749
32	Lithuania	0.744
33	Latvia	0.743
34	Greece	0.739
35	Czech Republic	0.723
36	Saudi Arabia	0.723
37	United Kingdom	0.720
38	India	0.710
39	Israel	0.674
40	Chile	0.635
41	Turkey	0.611
42	Uruguay	0.589
43	United States	0.578
44	Argentina	0.561
45	South Africa	0.467
46	Russian Federation	0.429
47	Colombia	0.400
48	Mexico	0.388
49	Brazil	0.313

Table 7f: Global Role Category Score

Rank	Country	Energy
1	Norway	0.934
2	Sweden	0.881
3	Denmark	0.857
4	Luxembourg	0.777
5	Iceland	0.762
6	Finland	0.742
7	South Africa	0.738
8	Turkey	0.729
9	Switzerland	0.726
10	Japan	0.719
11	Belgium	0.716
12	Austria	0.711
13	Colombia	0.696
14	Indonesia	0.690
15	Australia	0.683
16	Netherlands	0.679
17	Korea, Rep.	0.672
18	New Zealand	0.667
19	Canada	0.667
20	Germany	0.643
21	Estonia	0.638
22	Singapore	0.635
23	Mexico	0.630
24	Uruguay	0.628
25	Ireland	0.626
26	Portugal	0.619
27	Lithuania	0.618
28	Czech Republic	0.607
29	Slovenia	0.607
30	Brazil	0.604
31	United Kingdom	0.595
32	United Arab Emirates	0.593
33	Hungary	0.593
34	Argentina	0.585
35	Latvia	0.573
36	Slovak Republic	0.566
37	Greece	0.558
38	Poland	0.553
39	India	0.524
40	Kuwait	0.519
41	Italy	0.511
42	Chile	0.502
43	Spain	0.478
44	Israel	0.465
45	France	0.455
46	Saudi Arabia	0.356
47	China	0.355
48	United States	0.326
49	Russian Federation	0.280

Table 8: Regressions of Outcome Performance Metrics on SSPI and SSPI Pillars (Model Standard Errors)

Dependent variable:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	SDG Index	Legatum Prosperity Index	Social Progress Indicator	Human Development Index	Environmental Performance Index	Ecological Footprint Index	Cantril Ladder	GDP per Capita (PPP)
SSPI	0.659***	0.891***	0.866***	0.596***	1.013***	1.420**	0.625***	111,164.300***
	(0.039)	(0.059)	(0.058)	(0.102)	(0.134)	(0.685)	(0.099)	(32,313.800)
Constant	0.326***	0.157***	0.253***	0.505***	0.049	−0.323	0.253***	−25,832.360
	(0.026)	(0.038)	(0.039)	(0.069)	(0.089)	(0.395)	(0.063)	(20,499.280)
Observations	49	49	49	49	49	49	49	49
$R2$	0.856	0.731	0.817	0.558	0.656	0.099	0.457	0.201

Dependent variable:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	SDG Index	Legatum Prosperity Index	Social Progress Indicator	Human Development Index	Environmental Performance Index	Ecological Footprint Index	Cantril Ladder	GDP per Capita (PPP)
Sustainability	0.611***	0.692***	0.716***	0.414***	0.844***	0.702	0.437***	64,959.860
	(0.096)	(0.150)	(0.147)	(0.140)	(0.216)	(0.575)	(0.148)	(42,141.160)
Constant	0.401***	0.333***	0.400***	0.650***	0.217*	0.180	0.404***	7,979.044
	(0.054)	(0.085)	(0.085)	(0.083)	(0.124)	(0.292)	(0.083)	(23,571.930)
Observations	49	49	49	49	49	49	49	49
$R2$	0.516	0.309	0.391	0.189	0.320	0.017	0.156	0.048

Dependent variable:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	SDG Index	Legatum Prosperity Index	Social Progress Indicator	Human Development Index	Environmental Performance Index	Ecological Footprint Index	Cantril Ladder	GDP per Capita (PPP)
Market Structure	0.493***	0.659***	0.634***	0.427***	0.763***	1.176*	0.488***	71,266.050***
	(0.041)	(0.065)	(0.059)	(0.085)	(0.100)	(0.638)	(0.075)	(25,640.300)
Constant	0.456***	0.336***	0.432***	0.633***	0.245***	−0.108	0.364***	2,906.973
	(0.025)	(0.040)	(0.037)	(0.055)	(0.063)	(0.334)	(0.044)	(15,079.000)
Observations	49	49	49	49	49	49	49	49
$R2$	0.818	0.683	0.748	0.489	0.635	0.115	0.477	0.141

Dependent variable:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	SDG Index	Legatum Prosperity Index	Social Progress Indicator	Human Development Index	Environmental Performance Index	Ecological Footprint Index	Cantril Ladder	GDP per Capita (PPP)
Public Goods	0.566***	0.850***	0.810***	0.614***	0.914***	1.408***	0.588***	132,985.800***
	(0.043)	(0.043)	(0.043)	(0.071)	(0.128)	(0.478)	(0.085)	(25,865.760)
Constant	0.314***	0.076**	0.187***	0.417***	−0.004	−0.492	0.203***	−56,209.060***
	(0.033)	(0.034)	(0.035)	(0.056)	(0.101)	(0.321)	(0.064)	(19,658.130)
Observations	49	49	49	49	49	49	49	49
$R2$	0.789	0.832	0.895	0.741	0.669	0.121	0.506	0.360

*Note: *p<0.1; **p<0.05; ***p<0.01*

Table 9: Outcome Variable Descriptions

Outcome Variable	Description	Link
Human Development Index	A statistic composite index of life expectancy, education (mean years of schooling and expected years of schooling), and per capita income indicators, which are used to rank countries into four tiers of human development.	http://hdr.undp.org/en/content/human-development-index-hdi
UN Social Development Goals (SDG)	A collection of 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all people and the world by 2030."	https://www.sdgindex.org
Legatum Prosperity Index	An annual ranking and scores based on 104 different variables that are grouped into 9 sub-indexes: economic quality, business environment, governance, education, health, safety & security, personal freedom, social capital, and natural environment.	https://www.prosperity.com/about/resources
Social Progression Index	An index that measures the well-being of a society by observing social and environmental outcomes directly rather than the economic factors, based on 54 indicators in the areas of basic human needs, foundations of well-being, and opportunity to progress.	http://www.socialprogress.org
Environmental Performance Index	An index numerically marking the environmental performance of a state's policies in terms of environmental health and ecosystem vitality.	https://sedac.ciesin.columbia.edu/data/collection/epi/sets/browse
Cantril Ladder	An index that measures subjective well-being or life satisfaction based on a survey on nationally representative samples of respondents.	https://worldhappiness.report/archive/
Gross Domestic Product (GDP) per capita at PPP	A monetary measure of the market value of all the final goods and services produced in a specific time period. GDP per capita at purchasing power parity (PPP) is used for regression analysis as it reflects differences in the cost of living and the inflation rates of the countries, which makes it more useful when comparing living standards between nations than nominal GDP.	https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD
Ecological Footprint Per Capita (Biocapacity / Production Ecological Footprint per capita)	The amount of the environment necessary to produce the goods and services to support a particular lifestyle: the production of energy, biomass, water and other resources are converted into a normalized measure of land area called global hectares and checked against biocapacity.	https://www.footprintnetwork.org/licenses/

Table 10: Sustainable Shared-Prosperity Indicator Table

Sustainability

Category	Indicator	Policy	Description	Source	Year	Goalpost	Mean (Min, Max)
Ecosystem	Biodiversity Protection	Protection of Biodiversity	Average of percentage of ecologically important sites covered by protected areas across three ecosystem types: terrestrial, freshwater, and marine. For landlocked countries, marine percentage is omitted from the average.	UN SDG 14.5.1, 15.1.2	2018	(0, 100)	56.9 (3.67, 96.9)
Ecosystem	IUCN Red List Index	Endangered Species Protection	Measures the level of extinction of risk across species within a country. Index values of 1 represent all species qualifying as having an extinction risk of "least concern," while values of 0 represent all species having gone extinct.	UN SDG 15.5.2	2019	(0, 1)	0.87 (0.62, 0.99)
Land	Sustainable Nitrogen Management	Sustainable Agriculture Practice	An index measuring the sustainability of nitrogen management based on Nitrogen use efficiency (in agriculture) and land use efficiency (crop yield).	EPI	2018	(0, 100)	43.7 (0, 72.4)
Land	Water Management	Water Conservation	Average of the following two metrics: 1. Change in Water Use Efficiency (WUE), 2018 compared with 2010-2015 average: WUE is the value added of a given major sector divided by the volume of water used. WUE at the national level is the sum of the efficiencies in the major economic sectors weighted according to the proportion of water withdrawn by each sector over the total withdrawals. 2. Level of Water Stress: Freshwater withdrawal as a proportion of available freshwater resources is the ratio between total freshwater withdrawal by major economic sectors and total renewable freshwater resources, after accounting for environmental water requirements.	UN FAO	2017	(0, 100)[V]	117. (0.40, 2075[C])
Land	Stockholm Convention Compliance	Chemical Waste Management	Percent of provisions concerning Persistent Organic Pollutants from Stockholm Convention ratified and followed.	UN SDG 12.4.1	2015	(0, 100)	72.8 (16.7, 100)
Land	Deforestation	Forest Management	Percentage change land area coverage of naturally regenerating forests in 2018 from a 1990s average.	UN FAO	2018	(-20, 40)	6.1 (-24.2, 216[C])
Land	Carbon Capture	Carbon Sequestration	Percentage change in the ratio of carbon stock in living biomass over forest land in 2018 from a 1990s average.	UN FAO	2018	(-5, 50)	17.26 (-4.62, 82.4[C])
Energy	Alternative Energy Generation	Renewable Energy Incentives	Percentage of total final energy consumption generated from "renewable sources" (RS, collected from World Bank; includes hydroelectric, geothermal, solar, tidal, wind, and biofuels) minus half the percentage of total final energy consumption generated from biofuel sources (BIO, collected from IEA) to penalize countries for unsustainable overreliance on biofuels. AE = RE – 0.5 *BIO.	World Bank IEA	2014	(0, 100)	16.48 (0.02, 77.87)
Energy	Energy Intensity	Energy Efficiency	Energy intensity level of primary energy measured in megajoules per constant 2011 purchasing power parity GDP.	UN SDG 7.3.1	2018	(0, 15)[V]	4.05 (1.41, 12.9)
Energy	Coal Power	Fossil Fuel and Air Pollution	Percentage of total final electricity consumption from coal and coal-derived sources.	EIA	2015	(0, 100)[V]	22.4 (0, 92.7)
Greenhouse Gases	Beef Consumption	Methane Emissions	The average of two measures: beef and buffalo meat produced in kilograms per person, and per capita consumption. UN population estimates were used.	Our World in Data	2013	(0, 70)[V] (0, 50)[V]	23 (0.01, 144[C]) 17.72 (0.81, 55.5[C])
Greenhouse Gases	Air Pollution	Pollution Limitation	Annual mean levels of fine particulate matter (PM2.5 and PM10) in cities (population weighted).	UN SDG 11.6.2	2016	(0, 40)[V]	18.2 (5.73, 78.4[C])
Greenhouse Gases	Green Transport Index	1) Gas/petrol Tax 2) Transportation CO2	This measure is an aggregation using the simple mean of the following measures: 1) Average fuel price. The pump prices of the most widely sold grade of gasoline. Prices are in USD per liter. 2) "CO2 emissions from transport in tonnes per inhabitant," tonnes referring to thousands of kilograms.	World Bank OECD	2016 2016	(0, 2.5) (0, 5500)[V]	1.17 (0.24, 1.78) 2189 (200, 9540[C])
Waste	Municipal Solid Waste Generation	Wasteful Consumption	Annual amount of per capita Municipal Solid Waste (kg/capita/year), which is defined as residential, commercial, and institutional waste (Industrial, medical, hazardous, electronic, and construction and demolition waste are not included).	World Bank	2018	(0,750)[V]	480 (153, 990[C])
Waste	E-waste Generation	Special Waste	Annual amount of per capita electronic waste (kg/capita/year), which is one of special waste streams together with hazardous waste or medical waste.	World Bank	2018	(0,40)[V]	19.6 (1.59, 73.7[C])
Waste	Recycling Rate	Circular End-of-Life Waste Treatment	The quantity of material recycled in the country over total waste generated (recycling does not include controlled combustion (incineration) or land application).	World Bank	2018	(0,70)	21.8 (0, 61)

Market Structure

Category[35]	Indicator	Policy	Description	Source	Date	Goalpost	Mean (Min, Max)
Worker Engagement	Participation in Paid Employment	Job placement policies	Sum of all employed workers ages 25-54 divided by the total number of people in that age group.	OECD	2017	(0, 100)	85 (67.6, 91.9)
Worker Engagement	Child Worker Engagement	Child labor laws and Preparation for Employment	Conditional scoring based on two policies: 1) If the child labor rate is statistically nonzero, a country scores between 0.00 and 0.50 based on their level of child labor. 2) If the child labor rate in a country is statistically indistinguishable from zero, a country scores between 0.50 and 1.00 based on years of compulsory education	UN SDG 8.7.1	2018	(0, 15)^{V}	1.64 (0, 12.4)
Worker Engagement	Collective Bargaining Coverage	Labor rights	The proportion of workers whose terms and conditions at work are determined by collective bargaining as opposed to individual contracts.	ILO	2016	(0, 1)	0.40 (0, 0.99)
Worker Wellbeing	Unemployment Benefits Coverage	Unemployment Benefits	Percentage of unemployed receiving unemployment benefits.	ILO	2014	(0, 100)	36.3 (0, 100)
Worker Wellbeing	Paid Maternity Leave	Maternity leave	Paid parental leave available to mothers (full-rate equivalent) in weeks during the first year.	OECD	2018	(0, 52)	21.6 (3.2, 52)
Worker Wellbeing	Fatal Workplace Injuries	Health and Safety Regulation	Number of fatal injuries per 100,000 workers.	ILO	2015	(0, 25)^{V}	7.12 (0, 117^{C})
Worker Wellbeing	Senior Wellbeing	Old Age and Retirement Security	Weighted average of the following measures: 1) Percentage of population of individuals over 65 living in relative income poverty [0.50] 2) Expected number of years in retirement (male) [0.25] 3) Expected number of years in retirement (female) [0.25]	OECD	2018	(0, 40)V (10, 25) (10, 30)	14.7 (11.4, 44.3), 18.5 (11.8, 23.7) 22.9 (13.9, 27.5)
Taxes	Corporate Tax Rate	Corporate Tax	Tax imposed on the net income of the company.	World Bank	2018	(0, 40)	21.85 (0, 34)
Taxes	Tax Revenue	Role of Public Sector	Tax revenue as percentage of GDP.	World Bank	2016	(0, 50)	17.76 (0.07, 33.36)
Taxes	Tax Evasion	1) Corporate Tax Evasion Allowance 2) National Financial Secrecy	Arithmetic average of the following measures: 1) Score of the world's most important tax havens, rated by how aggressively and extensively each jurisdiction helps multinationals evade taxes. 2) Score based on 20 measures of financial secrecy, grouped around ownership registration, legal entity transparency, integrity of tax and financial regulation, and international standards and cooperation.	Tax Justice Network Tax Justice Network	2019 2020	(0, 2400)^{V} (0, 1500)^{V}	1114 (53, 590^{C}) 456 (27.5, 6069^{C})
Financial Sector	Stability	Regulation of Nonperforming Loans	The percentage of loans that are nonperforming, meaning that the borrower is default due to not making the scheduled periods.	IMF	2018	(0, 10)^{V}	3.44 (0.4, 38.5^{C})
Financial Sector	Depth	1) Domestic Credit in Private Sector 2) Financial System Deposits	This measure is an aggregation using the simple mean of the following measures: The financial resources provided to the private sector by financial corporations as a percentage of GDP. Deposited money in banks and other financial institutions as a percentage of GDP.	World Bank World Bank	2017 2017	(0, 190) (0, 200)	91.2 (16, 187) 80.86 (19.6, 400^{C})

[35] Market Structure would be a more complete pillar with a *Property* category containing a number of indicators which measure the extent to which governments guarantee and protect property rights. There exist several indices which measure property rights across countries, but most rely on "expert opinion" to score countries' complex systems of laws and practices related to property rights. An earlier version of this paper included a few such metrics in a *Property* category, but C-alpha testing and further regression analysis showed that (1) *Property* was negatively correlated with the other categories in Market Structure Pillar and (2) the indicators within *Property*, based on scoring by experts, were not correlated with each other despite purporting to measure the same underlying concept. Unable to find alternative indicators for property rights, the *Property* category was not included in the final version of the SSPI.

Financial Sector	Public Access	Bank Account Ownership	Account ownership at a financial institution or with a mobile-money-service provider (% of population ages 15+).	World Bank	2017	(0, 100)	85.7 (36.9, 99.9)
Inequality	Income Share Ratio	Income Inequality and Redistribution	The pre-tax national income share of the bottom 50% of earners divided by the pre-tax national income share of the top 10% of earners.	WID	2018	(0.2, 1.25)	0.48 (0.09, 0.88)
Inequality	Gini-coefficient After Taxes	Income Inequality and Redistribution	GINI Coefficient for post-tax-and-transfer income distribution	CIA	1997-2018	(20,70)[V]	35.4 (24.2, 63.0)

Public Goods

Category	Indicator	Policy	Description	Source	Date	Goalpost	Mean (Min, Max)
Education	Primary School Net Enrollment	Accessibility of Primary Education	The ratio of the number of children of official primary school age who are enrolled in primary education to the total population of children of official primary school age, expressed as a percentage.	UIS	2016	(0, 100)	96.1 (80, 99.9)
Education	Lower Secondary Net Enrollment	Accessibility of Lower Secondary Education	The net total of students in the lower secondary school age group who are enrolled in lower secondary or in any lower grade (primary education), as a proportion.	UIS	2016	(0, 100)	95.5 (72.9, 99.9)
Education	Pupil to Teacher Ratio	Investment in Teachers	Average number of pupils per teacher in primary school, based on headcounts of both pupils and teachers.	UIS	2018	(9, 40)^{V}	15.9 (9, 37.8)
Healthcare	Attended Births by Skilled Personnel	Basic Healthcare	The proportion of births in attended by trained and/or skilled health personnel.	WHO	2017	(0, 100)	98.4 (81.4, 100)
Healthcare	Infant DTP Vaccine Coverage	Preventative Health	The estimated percentage of children aged 12–23 months who received three doses of the combined diphtheria, tetanus toxoid and pertussis vaccine time before the survey.	WHO	2017	(0, 100)	94.5 (79, 99)
Healthcare	Physicians per 10,000	Investments in Healthcare	Number of medical doctors (physicians), both generalists and specialists, expressed per 10,000 people.	UN/ WHO	2010	(0, 70)	30.9 (2, 62.6)
Healthcare	WHO Core Capacities Fulfillment	Health Regulations	Percentage score from the 13 indicators of the International Health Regulations (2005) monitoring framework.[36]	WHO	2017	(0, 100)	88.3 (66, 100)
Healthcare	Unmet Need for Family Planning	Family Planning	Modeled data on unmet need for family planning is defined as the percentage of women of reproductive age, either married or in a union, who have an unmet need for family planning (any modern method).	UN	2018	(0, 100)^{V}	12.1 (5.9, 21.5)
Healthcare	Child Stunting	Nutrition	Estimated prevalence of stunting in children under 5 (%).	IHME	2018	(0, 100)^{V}	6.82 (0.96, 66.9)
Infrastructure	Availability and Quality of Electricity	Electrification	Arithmetic mean of two measures: 1) The percentage of the population with access to electricity 2) Executive opinion survey responses to the question: "In your country, how would you assess the reliability of the electricity supply?"	World Bank World Bank	2018 2017/ 2018	(0, 100) (0, 7)	99.7 (91.2, 100) 5.93 (3.01, 6.87)
Infrastructure	Safe Drinking Water	Water Infrastructure	Percentage of population using safely managed drinking water services.	WHO/ UNICEF	2015	(0, 100)	94.7 (44.2, 100)
Infrastructure	Basic Sanitation Services	Sanitation Infrastructure	The percentage of people using at least basic sanitation services, that is, improved sanitation facilities that are not shared with other households.	WHO/ UNICEF	2015	(0, 100)	94.7 (44.2, 100)
Infrastructure	Internet Access and Quality	Connectivity Policy	Arithmetic mean of two measures: 1) Percentage of households with internet access 2) Fixed broadband download speed in Mbps.	World Bank Cable.co.uk	2016 2018	(0, 100) (0,100)	75 (15.3, 98.5) 19.8 (2.38, 60.4)
Infrastructure	National Transport Network Intensity	Transport Infrastructure	The average of two measures: the natural log of rail lines per square kilometer (millions) per capita (millions) and the natural log of roadways per square kilometer per capita.	World Bank CIA	2018 2017	(0, 5) (0, 6)	2.84 (0, 5.28^{C}) 4.55 (2.56, 6.27^{C})
Rights	Rule of Law Index	Judicial System	Rule of Law Index measures extent to which laws are transparently, independently, predictably, impartially, equally enforced, and extent to which the actions of government officials comply with the law. Measured from low to high (0-1).	V-Dem	2018	(0, 1)	0.83 (0.19, 1.0)
Rights	Quality of Public Services & Government	Government and Civil Service	Perceptions of the quality of public services, quality of the civil service and its independence from political pressures, quality of policies and implementation, and credibility of the government's commitment to policies. Measured from -2.5 to 2.5.	WGI	2018	(-2.5, 2.5)	1.02 (-0.22, 2.21)

[36] The WHO core capacities are: (1) National legislation, policy and financing; (2) Coordination and National Focal Point communications; (3) Surveillance; (4) Response; (5) Preparedness; (6) Risk communication; (7) Human resources; (8) Laboratory; (9) Points of entry; (10) Zoonotic events; (11) Food safety; (12) Chemical events; (13) Radio nuclear emergencies.

Category	Indicator	Policy	Description	Source	Date	Goalpost	Mean (Min, Max)
Rights	Electoral Democracy Index	Political Participation and Influence	Electoral Democracy Index seeks to embody the core values that make rulers responsive to citizens through elections and freedom of expression.[37]	V-Dem	2018	(0, 1)	0.72 (0.02, 0.91)
Rights	Adoption of Key UN Conventions	Basic Human Rights	Proportion of 9 core UN conventions and 3 optional UN protocols on Human Rights that have been ratified, acquired, or succeeded.	UN	2019	(0, 10)	8.19 (4.33, 10)
Rights	Gender Equality Index	Equality in Politics and Before the Law	Weighted average of proportion of women in parliament from IPU and 3 indices from World Bank Women, Business and Law Index (WB-WBL): 1) Percentage of women in the national parliament. [Weight 0.4] 2) Mobility: Women have equal access to passports, foreign travel, domestic travel, and housing (4 Q's, each worth 0.25 for yes, 0 for no). [Weight: 0.2] 3) Marriage: Women protected by law from domestic violence and subservience; have equal access to divorce and remarriage. (5Qs, worth 0.2 for yes, 0 for no). [Weight: 0.2] 4) Assets, Pensions: Women have equal access to credit, inheritance, pensions, and retirement. Combines two measurements made up of 7 questions.[38] [Weight: 0.2]	IPU WB-WBL WB-WBL WB-WBL	2018 2018 2018 2018	(0, 0.5) (0, 1) (0, 1) (0, 1)	0.27 (0.01, 0.48) 0.88 (0, 1) 0.80 (0, 1) 0.72 (0.10, 1)
Public Safety	Intentional Homicide	Prevention of Violent Crime	Intentional homicides per 100,000 people.[39]	World Bank/UN	2016	$(0, 20)^V$	3.47 ($0.28, 29.5^C$)
Public Safety	Global Cyber-security Index	National Cybersecurity	The Global Cybersecurity Index (GCI) is a composite index combining 25 indicators into one benchmark for the laws, institutions, and competence.[40]	ITU	2018	(0, 1)	0.78 (0.41, 0.93)
Public Safety	Security Apparatus	Capability of the Security Apparatus	The Security Apparatus is a component of the Fragile State Index. It considers the security threats to a state such as bombings, attacks and battle-related deaths, rebel movements, mutinies, coups, or terrorism.[41]	The Fund for Peace	2019	$(0, 10)^V$	3.55 (0.70, 8.80)
Public Safety	Incarceration Rates	Criminal Justice Policy	Prison population rate per 100,000 of the national population.	World Prison Brief	2018	$(40, 540)^V$	161.0 (33^C, 639^C)
Global Role	Arms Transfers	Arms Policy	Arm transfers: the supply of military weapons through sales, aid, gifts, and those made through manufacturing licenses.[42]	SIPRI	2018	$(0,1500)^V$	545.9 ($0, 10508^C$)
Global Role	Military Expenditure	Defense Policy	Military expenditure (local currency at current prices) by calendar year as a percentage of GDP.	SIPRI	2018	$(0, 10)^V$	2.09 (0, 8.6)

[37] It measures electoral competition, suffrage, how freely political and civil society organizations can operate, how transparent and free elections are, and how elections affect the composition of the chief executive of the country. In between elections, it also measures freedom of expression and if independent media can present alternative views on matters of political relevance.
[38] Four questions are worth 0.10 for yes, 3 questions are worth 0.20 for yes, one question is worth 0.20, and all questions are worth 0 for no.
[39] Intentional homicides are estimates of unlawful homicides purposely inflicted because of domestic disputes, interpersonal violence, violent conflicts over land resources, intergang violence over turf or control, and predatory violence and killing by armed groups. Intentional homicide does not include all intentional killing; individuals or small groups usually commit homicide, whereas killing in armed conflict is usually committed by cohesive groups.
[40] The Cybersecurity Index has the following framework: (1) Legal: existence of legal institutions and frameworks dealing with cybersecurity and cybercrime. (2) Technical: existence of technical institutions and framework dealing with cybersecurity. (3) Organizational: existence of policy coordination institutions and strategies for cybersecurity development at the national level. (4) Capacity building: existence of research and development, education and training programs, certified professionals and public sector agencies fostering capacity building. (5) Cooperation: existence of partnerships, cooperative frameworks and information sharing networks. These results are aggregated into a scale from 0 to 1 where higher values represent better cybersecurity.
[41] Security Apparatus evaluates four aspects of security: Monopoly on the Use of Force (existence of militias, guerillas etc.), Relationship Between Security and Citizenry (professional police, state violence, government response to threats), Force (proper use of), Arms (proliferation etc.).
[42] Data cover major conventional weapons such as aircraft, armored vehicles, artillery, radar systems, missiles, and ships designed for military use. Excluded are transfers of other military equipment such as small arms and light weapons.

Category	Indicator	Policy	Description	Source	Date	Goalpost	Mean (Min, Max)
Global Role	Research and Development	Public R&D	Weighted average of three measures following: 1. Proportion of GDP spent on government R&D (weight 0.25) 2. Proportion of GDP spent on higher education R&D (weight 0.25) 3. Number of researchers per 1 million people, (weight 0.25)	UIS UIS UIS	2018 2018 2018	(0, 0.5) (0, 0.5) (0, 7500)	0.19 (0.02, 0.49) 0.39 (0.04, 1 [C]) 3604 (216, 8200[C])
Global Role	Foreign Aid	Quality and Quantity of Foreign Aid	Countries sorted by recipients of aid and donors of aid. Recipient score is an aggregation of: 1) Proportion of total aid spent on beneficial aid (67% weight) 2) Beneficial aid per person (33% weight) Donor score is an aggregation of: 3) Proportion of total aid spent on beneficial aid (67% weight) 4) Proportion of GDP spent on beneficial aid (33% weight)	UIS UIS UIS UIS	2018 2018 2018 2018	(0,1) (0,10) (0,0.9) (0, 0.003)	0.54 (0.20, 0.86) 3.55 (0.67, 15.5[C]) 0.42 (0, 0.79) 0.002401 (0.00014, 0.009221)