Misleading Country Rankings Perpetuate Destructive Business Practices

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Abstract

Countries are ranked on many criteria, the results of which can have far-reaching ethical and practical implications, particularly for emerging nations seeking role models. One highly influential ranking, the World Economic Forum's *Global Competitiveness Report* (GCR), has been criticized for containing multiple methodological, conceptual, and logical flaws that bias competitiveness rankings toward countries that favor neoliberalism. Using datasets not afflicted by such flaws, we examine Bergsteiner and Avery's (J Bus Ethics 109(4):391–410, 2012) prediction that competitiveness scores of the USA and the UK are substantially overstated. Results of re-ranking 104 countries using 29 economic, environmental, and social datasets from reputable sources support this assertion, with the USA showing the greatest discrepancy on a 100-point scale between its 2013–2014 GCR score (5) and our study's 2013 score (57), and the UK falling from GCR score 9 to 40. We explore reasons for this discrepancy, including examining the relationship between a country's neoliberal traditions and its rankings on the indicators.

Keywords Country competitiveness rankings · Ideology · Methodology

Many governments, corporations, and other institutions use data from surveys comparing national competitiveness. Accordingly, instruments for ranking countries have mushroomed in recent decades, but most suffer from serious methodological flaws and ideological bias. For example, Bergsteiner and Avery (2012) presented evidence of major methodological problems and a strong neoliberal bias in the World Economic Forum's (WEF) *Global Competitiveness Report* (GCR), probably the world's most influential ranking. The GCR's over-reliance on ideologically driven inputs rather than evidence-based outcomes results

in unrealistically high rankings for some underperforming countries, particularly those with neoliberal traditions such as the USA and the UK. This lends succor to an economic model—variously known as neoliberalism, liberal market economics, the shareholder-centered model, Anglo/USA capitalism, the Chicago School, the Washington Consensus or in its most extreme form (Stiglitz 2002) market fundamentalism—that is in disrepute in both theory (e.g., Albert 1993; Komlos 2015; Stiglitz 2013) and practice (e.g., the 2007–2009 global financial crisis). Bergsteiner and Avery (2012) postulated that removing the bias and methodological flaws would result in the key protagonists of neoliberalism, the USA and the UK, falling significantly in international competitiveness rankings. This paper tests this hypothesis by re-ranking 104 countries using outcome-only datasets unafflicted (as far as possible) by known flaws and biases and comparing the results with the 2013–2014 GCR. The GCR's high ranking of the USA and UK is of grave, global concern because—as we will show—it pseudo-legitimizes an economic model that is economically, environmentally, and socially wanting. It supports the proposition that the aggressively promoted neoliberal shareholder-focused, short-term, and market-driven economic model must be optimal for competitiveness, and hence entitles its most powerful

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proponent, the USA, to use this power to make and impose concomitant rules on others. Given the poor track record of the neoliberal model, perpetuating the myth that the USA and the UK are highly competitive economies raises profound ethical concerns. Therefore, this paper addresses the following questions:

1. Do global country rankings change significantly by removing the GCR's methodological flaws and ideological bias? And, if so, does this result in a substantial drop in the USA's and the UK's competitiveness as hypothesized by Bergsteiner and Avery (2012)?
2. Is there a relationship between the extent to which a country adopts neoliberal thought and its ranking on the 29 indicators?

Before presenting our methodology, discussing the analysis and results, and acknowledging the limitations and possible future directions of our study, we describe three key problems with the GCR and some other rankings.

Key Flaws

Among many flaws in country ranking reports generally, three major problems occur in the GCR: mixing inputs and outputs, strong ideological bias, and negating the importance of social and environmental outcomes. Given the seriousness of these three flaws, we discuss them in turn.

Major Flaw #1: Mixing Inputs (Independent Variables) and Outputs (Dependent Variables)

In their critique, Bergsteiner and Avery (2012) briefly mentioned the GCR's mixing inputs (hypothesized drivers and enhancers of performance) and outputs (measures of actual performance). Close examination shows that just over two-thirds of the GCR indicators are input variables rather than outcomes. In order to categorize the WEF's (2016, pp. 371–379) indicators as either inputs or outputs, we used our definitions (see below) since neither the GCR nor the literature provides a competitiveness definition that satisfactorily clarifies the distinction.

The WEF's continued use of input indicators is scientifically inconsistent and indefensible. In its 2015–2016 GCR, the WEF (2016, p. 63) still states that it “tend[s] to exclude input measures—such as expenditures, investment regimes, and partnership models” because mixing input and output measures risks double counting, and input measures, including monetary investment, are poor indicators of quantity or quality. Curiously, in its 2016–2017 GCR, the WEF (2016, p. 54) no longer states this but says instead: “Prosperity can increase only if *inputs* of production are used in smarter

and more efficient ways to fulfill constantly evolving human demands. Therefore we still define competitiveness as the *set of institutions, policies, and factors that determine* the level of **productivity** of an economy, which in turn determines the level of **prosperity** a country can achieve.” Clearly, the terms highlighted by us in italics refer to inputs, whereas the bold terms denote outcomes. The WEF's definition of competitiveness therefore is inherently flawed, being an amalgam of two antithetical concepts, namely inputs and outputs.

This confusion is also evident in many of the phrases the GCR uses such as competitiveness drivers, enhancers, policies, and factors; enabling environments, institutions, incentives, levers, policy options, and economic agendas; keys to success; determinants of growth; ingredients for competitiveness; all of which are inputs but are not identified as such. On the outcomes side, the GCR refers to “competitiveness performance” and “broad gains in living standards.”

Mixing inputs and outputs tends to be common in country rankings. For example, the Sustainable Society Index (SSI 2014, p. 34), the Human Development Index (UN 2014, p. 25), and the Sustainable Development Goals Index (Sachs et al. 2016, p. 28) cite “school enrolment” and/or “expected years of schooling” as outputs. Notwithstanding a certain face validity, this is problematic because countries with the same level of enrollment or years of schooling can produce vastly different educational outcomes as measured, for example, by language, mathematical, and scientific literacy tests such as in the PISA studies (Program for International Student Assessment). Among other things, educational outcomes depend on inputs such as teacher quality, gender, passion, remuneration, and social standing; socioeconomic–cultural context (e.g., emphasis on cooperation rather than competition); class sizes; quality and available teaching/learning resources; curriculum quality and relevance; and access to outdoor components, all of which constitute an input called “quality of learning experience” (Heffernan 2014; Miller and McKenna 2016). It is the range of excellent educational *input* factors that enables Finnish children to outperform schoolchildren in other developed countries even though the latter may spend up to two additional years at school. As Friedman (1970, p. 5) pointed out, “observed facts are necessarily finite in number; possible hypotheses, infinite.” The GCR does include some questions in its opinion survey on the perceived quality of each country's educational system. However, to expect non-expert respondents to make an informed judgment about the quality of their countries' educational system in relation to 147 other countries is unrealistic (another methodological flaw).

Mixing inputs and outcomes, whereby inputs account for around two-thirds of GCR indicators, constitutes a fundamental error in research methodology and leads to dramatic distortions as shown below. After all, if two years of extra schooling do not produce better outcomes, it suggests

problems with some other input. While examining input factors can be valuable, they need to be clearly separated from outcome variables, a basic tenet of scientific research. Mere belief that a certain action, institution, policy, or factor will deliver a desired outcome does not make it an outcome. Notably, the World Bank's (2015, p. 82) report *World Development Indicators 2015 (Economy)* includes outcomes only, namely: GDP, gross savings, adjusted net savings, current account balance, central government cash surplus or deficit, central government debt, consumer price index, and broad money—all used in our analysis.

To clarify the distinction between inputs (independent variables) and outputs (dependent variables) in country rankings, we propose the following definitions:

Competitiveness enhancers Are *inputs* such as actions, policies, situations, and events that demonstrably enhance the level of performance of an individual, group, organization, or country. For example, government spending on education (infrastructure, personnel, resources, curricula, etc.) involves many policy and action *inputs*.

Competitiveness Measures *outputs/outcomes*, that is, the relative *performance* of individuals, groups, organizations, and/or countries, where an intended or unintended outcome is the result or effect that follows a policy, action, situation, or event. For example, a country's performance on the PISA rankings is one *outcome* of a range of education inputs.

Major Flaw #2: Token "Inclusion" of Environmental and Social Indicators

The GCR acknowledges that well-established ideas and models that take a narrow view of economic growth and that do not take the (ir)responsible use of natural resources or social concerns into account, may not assure overall sustainability. To this end, the WEF (2014, p. 55) has introduced the notion of "sustainable competitiveness," which it defines as "the set of institutions, policies and factors that

make a nation remain productive over the longer term while ensuring social and environmental sustainability." Once again, this definition is based on a set of inputs. Table 1 lists nine social and nine environmental indicators chosen by the WEF to evaluate countries' social and environmental sustainability. However, the GCR 2013–2014 does not provide rankings for these 18 indicators but generates social and environmental sustainability indices (GCIs) that are used to calculate a "social sustainability-adjusted GCI" (GCI-S) and an "environmental sustainability-adjusted GCI" (GCI-E) (WEF 2014, pp. 68–69). This is done by varying the GCI a maximum of 20% above or below the GCI (WEF 2014, p. 64). In effect, this means that the WEF values the social and environmental outcomes at one-fifth of the value of the economic results. Notably, the GCR's final competitiveness ranking is based entirely on the underlying GCI, which disadvantages countries scoring well on the GCI-S and GCI-E.

This approach underestimates the crucial role of social and environmental factors in overall country competitiveness and undermines efforts to avoid a global *Tragedy of the Commons* problem. In relation to climate change, the Stern Report (2007, p. vi) points out that "our actions now and over the coming decades could create risks of major disruption to economic and social activity, on a scale similar to those associated with the great wars and the economic depression of the first half of the twentieth century." Hirschberg et al. (2007, p. 9) warn "that human society has to develop within the boundaries set by the environment, and that economy has to satisfy societal needs—not the reverse." The Sustainable Society Index (SSI 2014, p. 14) states: "Economic wellbeing is not a goal in itself. It is a precondition to achieve human and environmental wellbeing." Koehler (2016, p. 6) argues that for the UN's Sustainable Development Goals to have any chance of realization "economic decisions must be made subordinate to the over-arching ethics of rights to ecological and social justice." To downplay social and environmental considerations from competitive measures is to overvalue economic and financial outcomes at the expense of life as we know it (Gowdy 1994).

Table 1 GCR 2013–2014 social and environmental indicators

Social indicators	Environmental indicators
<i>Access to sanitation</i>	<i>Environmental regulations (stringency and enforcement)</i>
<i>Access to improved drinking water</i>	<i>Number of ratified international environmental treaties</i>
<i>Access to healthcare</i>	<i>Terrestrial biome protection</i>
Vulnerable employment	Agricultural water intensity
Extent of informal economy	Forest cover change
Social safety net protection	Fish stocks' overexploitation
Income Gini index	Level of particulate matter concentration
Social mobility	CO ₂ intensity
Youth unemployment	Quality of the natural environment

Note: Indicators in italics are inputs

Major Flaw #3: Ideology-Driven Input Indicators

The GCR, along with some other rankings, uses input indicators that are often ideology-driven, not evidence-based, potentially misleading decision makers relying on their data even further. Ideology-burdened input issues include ease of hiring and firing, minimum wages, flexibility of wage determination, worker empowerment at the operational level, worker representation on boards, stakeholder consideration, reliance on professional management, incentive systems, importance of equity markets, tax regimes, the short-term focus of listed companies, and many others.

Ease of firing is one example that embodies all three key flaws discussed here: an input; ideology-driven; and—when widely practiced—inhibits individual, enterprise, and national performance. Consistent with past GCRs, Question 3.03 in the 2015–2016 GCR asks: “In your country, to what extent do regulations allow flexible hiring and firing of workers?” The implicit assertion here that ease of firing confers competitiveness is a false and misleading assumption on two counts. One, respondents to Question 3.03 in, say, Germany could quite reasonably indicate that at-will firing is difficult in Germany. However, this response does not imply that respondents necessarily find this a problem or prefer to be able to fire workers with “ease.” High-performing companies seldom sack their greatest asset—their highly trained staff—even where they can, as research in Germany indicates: After new German laws made firing somewhat easier, employment turnover actually *decreased* between 1996 and 2010 (Jung 2014).

Two, there is no evidence that making firing difficult hinders competitiveness. On the contrary, evidence shows that the projected national benefits of unregulated dismissals are illusory. For example, the IMF, a former proponent of this approach, noted: “...by triggering a wave of layoffs, reforming employment protections further weakens aggregate demand and delays economic recovery” (IMF 2016, p. 108). Similarly, forced or excessive staff turnover impacts firms negatively, as Hancock et al.’s (2013) meta-analysis of 48 studies showed, decreasing profitability and growth (CapPELLARI et al. 2012; Yu and Park 2006). The corporate costs of firing, particularly long-term costs, are unrecognized or discounted by promoters of easy firing and can exceed the costs of hiring (Jung 2014). So-called labor adjustment results in dismissal costs (severance pay, administrative expenses), rehiring costs (agency costs, search, recruiting, training), delays in ramping up production once business improves, reputational damage, diminished staff health and loyalty, unamortized staff training costs, loss of IP, loss of highly trained workers to competitors, and other costs.

Society also loses; considerable evidence shows (e.g., Goh et al. 2015) that a hire-and-fire culture leads to worsening health and well-being for employees, their families,

and society, including increased mortality and health costs. Conversely, regulated labor markets can enhance workers’ life styles, according to a 10-country study of 370,000 Europeans conducted between 1975 and 2002 (Ochsen and Welsch 2012).

Most crucially, an analysis of the 2013–2014 GCR data done as part of this study disconfirms the GCR’s assertion that at-will firing raises competitiveness, with a non-significant correlation ($r_s = 0.084$) between the GCR’s overall rankings and its at-will-firing survey responses. Indeed, GCR data show that European countries with highly *regulated* labor markets—Austria, Denmark, Finland, Germany, the Netherlands, Norway, Sweden—are typically high performers. This finding is supported by an OECD (2013) study, which shows that these high-performing countries tend to have high employment protection legislation.

“Debiasing” Country Rankings

Our study sought to identify 2013 datasets free, as far as possible, of the methodological flaws and ideological prejudices identified by Bergsteiner and Avery (2012) and others, and then compare rankings derived from these 2013 datasets with the 2013–2014 GCR rankings. However, some biases can be difficult to spot, such as omissions. One example is Credit Suisse’s (2016) *Global Wealth Report*, which by excluding public assets and debt data artificially inflates the performance of high debt/low public-asset countries, such as the USA.

In our search for reliable indicators, many indicators used by others were found to be flawed and hence were unusable. Table 2 draws on Cash et al.’s (2003) and Kerr et al.’s (1996) flaw-classification schemas to categorize 14 frequently occurring shortcomings in published rankings. Cash et al. (2003, p. 8086) propose that information needs to be perceived as *credible*, *salient*, and *legitimate* to influence evaluations of scientific advice and public responses to social issues. Here “*credibility* involves the scientific adequacy of the technical evidence and arguments; *salience* deals with the relevance of the assessment to the needs of decision makers; *legitimacy* reflects the perception that the production of information and technology has been respectful of stakeholders’ divergent values and beliefs, unbiased in its conduct, and fair in its treatment of opposing views and interests.” Kerr et al.’s (1996) taxonomy of biases tests whether indicators are affected by *imprecision* (indicator is poorly defined), *commission* (indicator misleads), or *omission* (indicator that ought to be included is omitted).

Rankings subject to flaws inevitably produce misleading assessments of countries’ actual performance. As Freedman (1985), Britt (1997), and others noted, before undertaking any analysis, the quality of basic variables, processes, and

Table 2 Overcoming common flaws in country ranking instruments in our study

Flaw	Nature of flaw ²	Indicator characteristics in our study
1. Excluding social and environmental indicators ¹	Credibility and omission	We used 11 economic, nine social, and nine environmental indicators and weighted the three domains equally.
2. Mixing dependent (outcome) and independent (input) variables in the same sample ¹	Credibility, legitimacy, salience, and commission problems	Used only dependent variables, i.e., outputs/outcomes. Excluded all composite rankings because they mostly include both independent and dependent variables.
3. Using ideology-driven input indicators rather than evidence-based outcomes ¹	Legitimacy and commission	We rely entirely on performance outcomes to prevent ideologically contaminated inputs from clouding performance results. Irrespective of whether the performance outcomes are good or bad, they can be linked back to relevant inputs to try and discover correlations and causalities.
4. Ranking small numbers of countries	Credibility and omission	Wherever possible, we chose extant rankings with sample sizes of around 100 countries (Extant databases vary widely from about 20 to 200+ countries).
5. Including small countries ¹	Salience	We excluded countries with fewer than 3 million inhabitants, given their limited utility as role models and that many other rankings exclude them.
6. Relying on naïve perceptions of a few respondents ¹	Legitimacy, credibility and imprecision	We chose quantitative measures rather than perceptions of naïve respondents to survey questions (Happiness ranking excepted). The GCR uses perception surveys to ascertain “labor–employer relations” across 144 diverse countries when hard outcome-evidence is available for at least one critical component, namely strikes.
7. Including irrelevant data ¹	Salience and commission	We do not include input indicators such as population or market size when the evidence (including the GCR’s own research outcomes) indicates that competitiveness is not correlated with that factor. Likewise, GCR indicator 2.09, which enquires about the availability of fixed telephone lines, is a meaningless question given that some countries have simply “leapfrogged” from extremely low numbers of fixed lines to high penetration mobile phone networks (Economist 2008).
8. Excluding relevant data ¹	Legitimacy and omission	We included important output indicators in line with World Bank practice.
9. Small survey sample sizes ¹	Credibility	We used no questionnaire results (In the 2013–2014 GCR, 362 managers, i.e., 0.00003% of China’s 1.4 billion population, speak for China).
10. Conflicting indicators ¹	Legitimacy	Our indicators are value-neutral outcomes, and hence conflicts cannot arise. Some GCR indicators are inconsistent in terms of their insinuated intent. For example, the imbalance in family income is justifiably assessed through <i>outcome</i> measures such as the Gini and Shared Prosperity indices; and yet unjust and dysfunctional <i>input</i> regimes such as FLMs—which institutionalize worker insecurity, unhappiness, poverty, and inequality—are staunchly defended.
11. Not converting data to per capita	Credibility and salience	Where applicable, measures were converted to per capita.
12. Fourfold dipping ¹	Salience, legitimacy	We used each indicator only once. In the GCR, indicator 0.01 measures “gross domestic product” (p. 404); indicator 0.03 measures “GDP per capita” (p. 406); indicator 0.04 measures “GDP as a share of world GDP” (p. 407); and indicator 10.03 measures “GDP (PPP)” (p. 520) (WEF 2014). Apart from GDP itself being a flawed measure, its use as a baseline measure and the fourfold counting further distorts findings.
13. Not inverting extant scales	Imprecision	Triple checking of the direction of scales.
14. Transcribing data incorrectly	Imprecision	Wherever possible, use of readily accessible and reliable data bases such as the World Bank, and triple checking of results.

¹Flaw applies to the GCR²Flaw is based on Cash et al. (2003) and/or Kerr et al. (1996)

how clusters of variables interact needs addressing. Table 2 summarizes common flaws and ways in which our study minimized them.

In addition, we sought to ensure that our indicators met Hirschberg et al.’s (2007, p. 6) requirements by being measurable, quantifiable, meaningful, clear in value, clear in content, robust, reproducible, sensitive, specific, verifiable, and not involving redundancy or double counting.

Methodology

Country Selection

Our analysis and discussion focuses substantially on 23 countries (the G23), ranked in the context of all 104 ranked countries (the G104). The G23 includes countries in the G7 (Canada, France, Germany, the UK, Italy, Japan, the USA), the BRIC

countries (Brazil, Russia, India, China), all remaining Anglo countries (Ireland and New Zealand but not South Africa), some high-performing European countries (Austria, Denmark, Finland, Germany, the Netherlands, Norway, Sweden, Switzerland), as well as Thailand and Singapore. While inclusion of the G7 and BRIC countries requires no explanation, the Anglo countries are included to test the proposition implicit in Bergsteiner and Avery's (2012) paper that the GCR overstates rankings for these countries. We excluded South Africa because the majority of the population is of indigenous descent and so is not "Anglo," and while English is the official language of government, it is only fourth-ranked as a spoken first language of 11 official languages. Several high-performing European countries and Singapore are included given that they perform well in GCR rankings notwithstanding the GCR's ideological bias. Thailand is included because it officially promotes a form of capitalism that is more akin to the European model than the Anglo model (Avery and Bergsteiner 2016), and together with China, India, and Singapore provides another key Asian reference point.

Datasets

The 2013–2014 GCR ranks 148 countries on 117 indicators and uses data from the World Bank, its own survey questionnaires, and other sources. Unless otherwise stated, for consistency we used only World Bank datasets. Where the World Bank did not have a ranking, we used other specialized rankings. For comparability with the GCR, our target year was 2013 since data for later years were incomplete for many countries. Where data for 2013 were unavailable, we used the nearest available dataset. Where a World Bank ranking had minor indicator gaps, we augmented the data from one other additional published source. Any remaining gaps were left blank. The data were correct as at July 2017, but because some rankings are continuously updated, minor discrepancies might have arisen subsequently.

Derivation of Final Scores for the G104

The following steps were followed in deriving final scores for the countries remaining after applying procedures for overcoming flaws as described in Table 2.

1. When, for a given country, more than three cells for any one of the economic, environmental, or social sets of indicators were empty, that country was deleted from the sample. In total, 104 countries remained after this step.
2. For each country, an average was calculated for each of the three domain indicator sets (economic, environmental, and social).
3. These averages were then ranked (1 is best, 104 worst).
4. Data were not available for every G104 country on all 29 indicators. For example, only 95 countries reported on "broad money" and so were ranked from 1 to 95. To be able to compare results, all rankings were converted to "scores" on a 100-point scale.
5. An overall country average was derived from the three equally weighted domain averages, given that the economy, society, and the environment are interrelated. Some statisticians caution about averaging scores from the three domains or even within the domains into a single index (SSI 2014, p. 15), particularly with a significant negative relationship between social (human well-being) and environmental scores ($r_s = -0.48$ in our study). This is because "whenever an average is used to represent an uncertain quantity, it ends up distorting the results because it ignores the impact of the inevitable variations" (Savage 2002, p. 20). However, all country rankings do this and for comparability with the GCR we needed to aggregate the domains, while noting that the GCR—somewhat confusingly—includes some input and output social indicators on health and education in the GCI that should, more properly, form part of the GCI-S. Narrowly defined rankings can misrepresent a country's overall wealth and performance, as is also evident in Credit Suisse's (2016) *Global Wealth Report*, which excludes social and environmental indicators in its definition of national wealth.
6. The overall ranked averages were then again converted to scores on a 100-point scale. Thus, the final score for a country is NOT the average of the scores for the three domains, but the overall averages converted to a 100-point scale.
7. The overall scores for the G104 were then ranked and based on this ranking reordered for the final table in Appendix A in ESM.
8. To compare our results with GCR data, all GCR countries that were not also part of our set were eliminated, coincidentally leaving 100 GCR countries, which then conveniently formed a 100-point scale.

Volatility Analysis

The question arises about how volatile ranking trends are, that is, are there significant shifts in countries' ranking from one period to the next or are variations within acceptable bounds?

To examine volatility, we analyzed *output* data over a 20-year time span, with four reporting years (1998, 2003, 2008, 2013) for the 11 economic indicators for the G23 countries, economic indicators being the ones the GCR focuses on. Space constraints did not permit a comprehensive analysis across all G104 countries and 29 indicators. An analysis of 104 countries over 4 time periods for 41 data rows would require a 17,056-cell table.

Indicators

Tables 3, 4, and 5 show definitions for the economic, environmental, and social indicators we used; provide links to the original dataset; and offer comment where necessary. Note that in Tables 3, 4, and 5, the highest (best) score is 1 and the lowest is 100, and that all indicators are *outcomes*.

Economic Output Indicators

Our 11 economic indicators incorporate all the World Bank's key World Development Indicators plus additional indicators from World Bank publications and the *Economist*; and Adjusted Net National Income (ANNI), an indicator

recommended by Stiglitz et al. (2009) in lieu of GDP. Most indicators draw heavily on World Bank definitions and explanations (see Table 3).

Note, GDP was omitted in calculating our economic indicator averages and overall country averages. Although commonly used, GDP has been widely criticized (e.g., van den Bergh 2009; SSI 2014; Stiglitz et al. 2009) as inappropriate for measuring general, or even economic, well-being. GDP overlooks certain economic factors that enrich the human economic condition and ignores others that diminish it. Even the Chief Economist of the WEF recommends not judging a country by GDP because GDP overlooks whether growth is fair, green, and improves lives (Blanke 2016). Yet, the WEF continues to use GDP.

Table 3 Definitions and notes for economic output indicators

Adjusted net national income (current US\$) (ANNI)	ANNI is a rather complex construct being the difference between a range of incomes derived from the personal, business, and government sectors (consumption, investments, government spending, net exports, and net foreign factor income), minus three costs/losses (indirect business taxes, depreciation, and natural resource depletion) (World Bank 2016a). (Note: ANNI was not part of Goossens et al.'s (2007) SWOT analysis of alternatives to GDP, because ANNI basically did not exist then)
Gross domestic savings (or Gross national savings)	Gross Domestic Savings (GDS) refers to GDP less final consumption expenditure (total consumption) (World Bank 2016b). Although this measure is stated in relation to GDP (and hence of limited validity), it is frequently used and to maintain comparability with the GCR, we used it here.
Inflation of consumer prices	"Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly" (World Bank 2016c). Ranking inflation on the World Bank's numerical value alone is problematic since negative inflation (deflation) is as undesirable as excessive inflation. The general consensus appears to be that an inflation rate of 2% is optimal (e.g., USA Federal Reserve 2017). We have therefore recalibrated World Bank inflation data (World Bank 2016d) by calculating the absolute difference between the actual score and the 2% target, and then ranking the results afterward. In other words, inflation of 9 or - 5% scores the same because they deviate from the optimal 2% by 7 points.
PCT patent applications per million population	Refers to the "number of applications under the Patent Cooperation Treaty (PCT) per million population" (WEF 2015, p. 536). Our source, the 2014–2015 GCR (WEF 2015), obtained its 2010–2011 data from the Organisation for Economic Co-operation and Development (OECD) Patent Database; and the World Bank, World Development Indicators Online; and GCR calculations.
Unemployment rate	"Unemployment refers to the share of the labor force that is without work but available for and seeking employment" (World Bank 2016d).
Current account balance	"Current account balance is the sum of net exports of goods and services, net primary income, and net secondary income. Data are in current U.S. dollars" (World Bank 2016e).
Central government debt	"Debt is the entire stock of direct government fixed-term contractual obligations to others outstanding on a particular date. It includes domestic and foreign liabilities such as currency and money deposits, securities other than shares, and loans. It is the gross amount of government liabilities reduced by the amount of equity and financial derivatives held by the government" (World Bank 2016f).
Foreign direct investment inflows	"Foreign direct investment refers to direct investment equity flows [inwards and outwards] in the reporting economy. It is the sum of equity capital, reinvestment of earnings, and other capital" (World Bank 2016g). Net inflow refers to inward direct investments made by non-resident investors into the reporting economy.
Broad money (percentage of GDP)	"Broad money ... is the sum of currency outside banks; demand deposits other than those of the central government; the time, savings, and foreign currency deposits of resident sectors other than the central government; bank and traveler's checks; and other securities such as certificates of deposit and commercial paper (World Bank 2016h).
Total international reserves	"Total reserves comprise holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities. The gold component of these reserves is valued at year-end (December 31) London prices. Data are in current U.S. dollars" (World Bank 2016i). IRs affect a country's credit rating, and its ability to repay foreign debt and manipulate its exchange rate.
Central government cash surplus/deficit	"Central government cash surplus or deficit is revenue (including grants) minus expense, minus net acquisition of non-financial assets" (World Bank 2016j). Countries with high budget deficits (relative to their GDPs) generally have more difficulty raising funds to finance expenditures, than those with lower deficits (CIA 2016).

Environmental Output Indicators

Our nine environmental indicators (see Table 4) are largely oriented toward the UN's Sustainable Development Goals

(SDGs). The actual data came from: World Bank (5 indicators), World Resources Institute (1), Living Planet Report (1), Intergovernmental Panel on Climate Change (1), and Wiedmann et al. (2013) (1).

Table 4 Definitions and notes for environmental output indicators

Total ecological footprint	“The Ecological Footprint tracks humanity’s demands on the biosphere by comparing humanity’s consumption against the Earth’s regenerative capacity, or bio-capacity. It does this by calculating the area required to produce the resources people consume, the area occupied by infrastructure, and the area of forest required for sequestering CO ₂ not absorbed by the ocean” (Living Planet Report 2012, p. 36). Higher consumption was scored worse.
Energy use	“Energy use refers to use of primary energy before transformation to other end-use fuels, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport” (World Bank 2016k).
Renewable energy consumption (% of total final energy consumption)	Renewable energy consumption is the share of renewable energy in total final energy consumption (World Bank 2016l). Scientists broadly agree that current and long-term negative impacts of global warming and climate change are caused, or at least exacerbated, by fossil fuels (IPCC 2014, p. 5). Increasing use of renewable energy sources therefore has huge national and global economic and environmental implications.
Total greenhouse gas emissions (GhG) (MtCO ₂ e)	Refers to greenhouse gas (GhG) emissions (CO ₂ , CH ₄ , N ₂ O, and F-Gas) from a variety of sectors including energy, industrial processes, agriculture, waste, bunker fuels, land use change, and forestry (World Resources Institute 2012). The EU report on indices recommends this indicator for measuring potential negative effects on climate change (Hirschberg et al. 2007, p. 11).
Energy efficiency (GDP per unit of energy)	“GDP per unit of energy use is the PPP [purchasing power parity] GDP per kilogram of oil equivalent of energy use. PPP GDP is gross domestic product converted to 2011 constant international dollars using PPP rates ... The ratio of gross domestic product (GDP) to energy use indicates energy efficiency” (World Bank 2016m).
Material footprint (MF)	Material footprint (MF) is the global allocation of used raw material extraction to the final demand of an economy (Wiedmann et al. 2013). Proponents of MF argue that for both national accounting and national comparisons the MF provides a more accurate assessment of resource productivity than Domestic Material Consumption (DMC) because it includes upstream raw materials related to imports and exports originating from outside the domestic economy.
Adjusted net saving (ANS) or genuine saving	Although ANS is often used as an economic indicator, this measure is included under environmental indicators because genuine or adjusted net saving is a sustainability indicator building on the concepts of green national accounts. “Adjusted net savings are equal to net national savings plus education expenditure and minus energy depletion, mineral depletion, net forest depletion, and carbon dioxide and particulate emissions damage” (World Bank 2016n).
Nationally terrestrial and marine protected areas	“Nationally protected areas are defined using the six International Union for Conservation of Nature (IUCN) categories for areas of at least 1000 hectares—scientific reserves and strict nature reserves with limited public access, national parks of national or international significance and not materially affected by human activity, natural monuments and natural landscapes with unique aspects, managed nature reserves and wildlife sanctuaries, protected landscapes (which may include cultural landscapes), and areas managed mainly for the sustainable use of natural systems to ensure long-term protection and maintenance of biological diversity—as well as terrestrial areas not assigned to an IUCN category” (World Bank 2016o).
Forest area change (percentage 1990–2013)	“Forest area is land under natural or planted stands of trees of at least 5 meters in situ, whether productive or not, and excludes tree stands in agricultural production systems (for example, in fruit plantations and agroforestry systems) and trees in urban parks and gardens” (World Bank 2016p). Forest change refers to the percentage change to the initial base year 1990.

Social Output Indicators

Social indicators are largely oriented toward the UN's Sustainable Development Goals (SDGs), many of which involve multiple submeasures. For example, health involves submeasures of incidence of HIV, malaria, infant mortality, maternal mortality, and many others. Given the limited scope of our study and a need to balance the three indicator domains, we included nine frequently used and widely applicable social indicators that differentiate between countries. The actual data were obtained from sources shown in Table 5.

Note that country-wide factors such as corruption and crime are, among other things, an outcome of government policies (or lack thereof) and social mores (e.g., classifying

drug use as a crime). However, for businesses operating in high-crime, high-corruption countries, these factors constitute an *input*. On the other hand, ongoing and widespread criminal behavior in and by organizations, such as IP theft or cartels, is an outcome of inappropriate organizational cultures.

Analysis and Discussion

Appendix A in ESM shows data for all G104 countries across all 29 indicators. Table 6 presents the average scores from the economic, environmental, and social domains, plus the overall score (average of domain averages) and 2013–2014 GCR scores for comparison.

Table 5 Definitions and notes for social output indicators

Gini index, distribution family income	The Gini index measures the degree of inequality in the distribution of family income in a country and plots the cumulative family income ranging from the poorest to the richest. Perfect equality is rated at zero (zero difference between all) and perfect inequality would be 100 (CIA 2016). Our data were sourced from the CIA, which has more complete information than the World Bank.
Life expectancy at birth	The average number of years to be lived by defined groups of people born in the same year, if mortality at each age remains constant in the future. Life expectancy is an indicator of overall quality of life in a country and is used in various actuarial measures (World Bank 2016q).
Happiness ranking (World Happiness Report)	The World Happiness Report 2015 does not define happiness but—in reference to OECD guidelines (Stiglitz et al. 2009, p. 216)—holds that “subjective wellbeing encompasses three different aspects: cognitive evaluations of one’s life, positive emotions (joy, pride), and negative ones (pain, anger, worry). While these aspects of subjective wellbeing have different determinants, in all cases these determinants go well beyond people’s income and material conditions...” (Helliwell et al. 2015). This ranking represents the composite total of seven subscales: a so-called base country ranking, GDP per capita, social support, healthy life expectancy, freedom to make life choices, generosity and perceptions of corruption. (Note: Using this ranking is somewhat problematic because it doubles up on some of our other measures).
Maternal mortality ratio (MMR)	“Maternal mortality ratio is the number of women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination per 100,000 live births. The data are estimated with a regression model using information on the proportion of maternal deaths among non-AIDS deaths in women ages 15–49, fertility, birth attendants, and GDP” (World Bank 2016r).
People in prison or jail	The Institute for Criminal Policy Research (ICPR 2016) records the number of prisoners held in 223 independent countries and dependent territories. This is an indirect measure of the socialization and social cohesion of a country.
Corruption	“The Corruption Perceptions Index ranks countries and territories based on how corrupt their public sector is perceived to be. A country or territory’s score indicates the perceived level of public sector corruption on a scale of 0–100, where 0 means that a country is perceived as highly corrupt and 100 means it is perceived as very clean.” (Transparency International 2013).
Gender gap	“There are three basic concepts underlying the Global Gender Gap Index, forming the basis of how indicators were chosen, how the data is treated and the scale used. First, the Index focuses on measuring gaps rather than levels. Second, it captures gaps in outcome variables rather than gaps in input variables. Third, it ranks countries according to gender equality rather than women’s empowerment.” (WEF 2015).
Shared prosperity	The declared goal of the World Bank is to foster shared prosperity. One measurement tool is the Global Database of Shared Prosperity with the goal of “fostering income growth of the bottom 40% of the welfare distribution in every country” as “measured by annualized growth in average real per capita consumption or income of the bottom 40%” (World Bank 2016s).
Mortality rate under-5 children (per 1000 live births)	“Under-five mortality rate is the probability per 1000 that a newborn baby will die before reaching age five, if subject to age-specific mortality rates of the specified year” (World Bank 2016t). This measures society’s commitment and ability to protect the lives of its most vulnerable members.

Table 6 Overall scores, GCR comparison, and domain average scores

Overall scores (average of averages) on 100-pt scale		GCR rank*	Average economic scores on 100-point scale		Average environmental scores on 100-point scale		Average social scores on 100-point scale	
Switzerland	1	1	Norway	1	Rwanda	1	Norway	1
Norway	2	6	Singapore	2	Bangladesh	2	Sweden	2
Denmark	3	12	Kuwait	3	Philippines	3	Finland	3
Austria	4	13	Switzerland	4	Nepal	4	Switzerland	4
Sweden	5	10	United Arab Emirates	5	Morocco	5	Denmark	5
Germany	6	4	Israel	6	Dominican Republic	6	Australia	6
Croatia	7	55	Austria	7	Sri Lanka	7	Netherlands	7
Netherlands	8	7	Germany	8	Tajikistan	8	Germany	8
Romania	9	56	Netherlands	9	Malawi	9	Canada	9
Chile	10	25	China	10	Chad	10	Austria	10
Israel	11	21	Sweden	11	Burundi	11	Belgium	11
United Arab Emirates	12	16	Malaysia	12	Myanmar	12	New Zealand	12
Vietnam	12	52	Thailand	12	India	12	Japan	12
China	13	23	Denmark	13	Tanzania	13	France	13
Bulgaria	14	42	Australia	14	Pakistan	14	Ireland	14
Peru	15	45	Russian Federation	15	Haiti	15	Italy	15
New Zealand	16	15	Azerbaijan	16	Senegal	16	United Kingdom	16
Italy	17	35	Saudi Arabia	17	Burkina Faso	17	Spain	17
Thailand	18	28	Czech Republic	18	Ghana	18	Singapore	18
Singapore	19	2	Chile	19	Costa Rica	19	Poland	19
Spain	20	26	Oman	20	Romania	20	Czech Republic	20
Australia	21	18	Bulgaria	21	Nicaragua	21	Croatia	21
Moldova	22	64	Kazakhstan	22	Vietnam	22	Israel	22
Costa Rica	23	39	Canada	23	Uganda	23	Bosnia and Herzegovina	23
Hungary	24	46	New Zealand	24	Peru	24	Oman	24
Philippines	25	43	Peru	25	Mozambique	25	Belarus	25
France	26	19	Hungary	26	Guinea	26	Portugal	26
Kuwait	27	27	Croatia	27	Kenya	27	Kuwait	27
Ireland	28	22	Japan	28	Benin	28	United Arab Emirates	28
Azerbaijan	29	30	Belgium	29	Cambodia	29	Chile	29
Panama	30	31	Panama	30	Colombia	30	Moldova	30
Czech Republic	31	34	Algeria	31	Moldova	31	Uruguay	31
Belarus	32	0	Ireland	32	Madagascar	32	United States	32
Nepal	33	82	Italy	33	Zambia	33	Argentina	33
Belgium	34	14	United States	34	Azerbaijan	34	Greece	34
Canada	35	11	Spain	35	Algeria	35	Romania	35
Poland	36	32	Belarus	36	Liberia	36	Kazakhstan	36
Algeria	37	71	United Kingdom	37	Guatemala	37	China	37
India	37	44	Bolivia	37	Sierra Leone	37	Costa Rica	37
Uruguay	38	60	Mexico	38	Nigeria	38	Bulgaria	38
Morocco	39	57	Vietnam	39	Cameroon	39	Hungary	39
United Kingdom	40	9	Romania	40	Croatia	40	Serbia	40
Bolivia	41	69	France	41	Brazil	41	Ecuador	41
Brazil	42	41	Finland	42	Panama	42	Ukraine	42
Ecuador	43	53	Paraguay	43	Ecuador	43	Vietnam	43
Japan	44	8	Turkey	44	Indonesia	44	Brazil	44
Sri Lanka	45	48	Poland	45	Bolivia	45	El Salvador	45
Colombia	46	51	Benin	46	Angola	46	Turkey	46
Finland	47	3	Uruguay	47	Tunisia	47	Thailand	47
Bangladesh	48	77	Angola	48	Bulgaria	48	Malaysia	48
Malaysia	49	20	Lebanon	49	Mali	49	Indonesia	49
Oman	50	24	Brazil	50	Afghanistan	50	Panama	50

Table 6 (continued)

Overall scores (average of averages) on 100-pt scale		GCR rank*	Average economic scores on 100-point scale		Average environmental scores on 100-point scale		Average social scores on 100-point scale	
Turkey	51	33	Ecuador	51	Thailand	51	Saudi Arabia	51
Indonesia	52	29	Morocco	52	Georgia	52	Colombia	52
Nicaragua	53	70	Philippines	53	Hungary	53	Bolivia	53
Saudi Arabia	54	17	Moldova	54	Chile	54	Georgia	54
Kazakhstan	55	36	Portugal	55	Turkey	55	Lebanon	55
Benin	56	88	Colombia	56	Uruguay	56	Nicaragua	56
United States	57	5	Indonesia	57	Honduras	57	Mexico	57
Burkina Faso	58	95	India	58	El Salvador	58	Nepal	58
Portugal	59	37	Guatemala	59	Denmark	59	Peru	59
Cambodia	60	63	Georgia	60	Switzerland	60	Bangladesh	60
Rwanda	61	49	Costa Rica	61	China	61	Russian Federation	61
Mexico	62	40	Mauritania	62	Spain	62	Sri Lanka	62
Georgia	62	54	Cambodia	62	Italy	62	India	62
Dominican Republic	63	76	Ukraine	63	Austria	63	Philippines	63
Russian Federation	64	47	Nepal	64	Belarus	64	Jordan	64
El Salvador	65	68	Burkina Faso	65	France	65	Tunisia	65
Myanmar	66	94	Cameroon	66	Poland	66	Algeria	66
Pakistan	67	90	Nigeria	67	Jordan	67	Ghana	67
Guatemala	68	61	Sri Lanka	68	Norway	68	Pakistan	68
Ghana	69	80	Myanmar	69	Germany	69	Tanzania	69
Tanzania	70	85	El Salvador	70	Mexico	70	Paraguay	70
Senegal	71	79	South Africa	71	Sweden	71	Azerbaijan	71
Tajikistan	72	72	Argentina	72	United Arab Emirates	72	Tajikistan	72
Uganda	73	87	Honduras	73	New Zealand	73	Cambodia	73
Bosnia and Herzegovina	74	62	Bosnia and Herzegovina	74	Israel	74	Senegal	74
Lebanon	75	74	Nicaragua	75	Ireland	75	Mozambique	75
Greece	76	65	Jordan	76	Paraguay	76	South Africa	76
Paraguay	77	91	Bangladesh	77	Mauritania	77	Mauritania	77
Burundi	78	99	Greece	78	Greece	78	Morocco	78
Argentina	79	75	Dominican Republic	79	Netherlands	79	Guatemala	79
Mozambique	80	93	Rwanda	80	Serbia	80	Uganda	80
Malawi	81	92	Zambia	81	Malaysia	81	Burkina Faso	81
Angola	82	-	Uganda	82	United Kingdom	82	Dominican Republic	82
Tunisia	83	58	Mali	83	Portugal	83	Liberia	83
Ukraine	84	59	Serbia	84	Lebanon	84	Rwanda	84
Chad	85	-	Tunisia	85	Saudi Arabia	85	Benin	85
Nigeria	86	84	Liberia	86	Czech Republic	86	Sierra Leone	86
Cameroon	86	81	Madagascar	86	Argentina	86	Malawi	86
Liberia	87	86	Senegal	87	Belgium	87	Kenya	87
Serbia	88	73	Burundi	88	Bosnia and Herzegovina	88	Honduras	88
Zambia	89	66	Ghana	89	South Africa	89	Mali	89
Haiti	90	97	Pakistan	90	Kuwait	90	Burundi	90
Jordan	91	50	Mozambique	91	Singapore	91	Zambia	91
Kenya	92	67	Chad	92	Finland	92	Myanmar	92
Madagascar	93	89	Tanzania	93	Ukraine	93	Madagascar	93
Mauritania	94	96	Kenya	94	Australia	94	Nigeria	94
Honduras	95	78	Sierra Leone	95	Japan	95	Cameroon	95
Sierra Leone	96	98	Haiti	96	Russian Federation	96	Haiti	96
Mali	97	83	Malawi	97	United States	97	Afghanistan	97
Guinea	98	100	Afghanistan	98	Canada	98	Chad	98
South Africa	99	38	Tajikistan	99	Kazakhstan	99	Angola	99
Afghanistan	100	-	Guinea	100	Oman	100	Guinea	100

In general, our results confirm Bergsteiner and Avery's (2012) predictions that after removing known flaws and biases, the ranking of the USA would drop substantially compared with GCR rankings. Specifically, Bergsteiner and Avery predicted that the USA's 2009–2010 GCR ranking would fall from 4th place out of 139 countries to between 30th and 60th place, which is equivalent to a score of between 21 and 43 on a 100-point scale. Using mostly 2013 data, our results show the USA scores 57 for 2013 outcome data, well below the 2013–2014 GCR score of 5 (both on a 100-point scale). Similarly, the UK's score fell from 9 (GCR) to 40, while Canada dropped 24 points (from GCR 11 to 35). Results were mixed for the other Anglo countries. Our scores for Ireland and Australia (respectively, 28 and 21) remained somewhat similar to those in the 2013–2014 GCR (respectively, 22 and 18), with New Zealand dropping only 1 point from 15 (GCR) to 16. The relatively poor results for the USA and UK in our study need further analysis, but can basically be attributed to their poorer than generally expected economic performance (USA = 34, UK = 37) and extremely poor environmental scores (USA = 97, UK = 82).

Given popular perceptions about the USA's economic prowess, its poor overall performance in our study must surprise, even though this has been reported long before, albeit using smaller country sample sizes. For example, a 1992 comparison of OECD countries (Wolff et al. 1992) on around 450 economic, social, and environmental measures (using very similar sources to our study) casts the USA in a similarly poor light. On roughly half the compared measures, the USA tended toward poor performance, hovered around the middle on just over a quarter of the measures, and clustered around the high end on fewer than one quarter. The overall high performers in various categories in 1992 were: Germany, Japan, Australia, and the Netherlands. Twenty-two years later, the Sustainable Society Index (SSI 2014, p. 81) ranked 151 countries on which the USA ranked 40 on human wellness, 139 on environment, and 96 on economics. This translates into a composite overall score of 60 on a 100-point scale, where 1 is best and 100 lowest, very similar to our overall score of 57 for the USA. We also note major concordance on the final rankings between Bertelsmann Stiftung's *SDG Index and Dashboards Global Report* (Sachs et al. 2016) and our results, the main difference being that the UK and USA rank substantially lower in our study. An explanation for this may lie in the Bertelsmann indicators being heavily skewed toward social indicators (41 social, 9 environmental, 8 economic), whereas our domains are more balanced. Furthermore, Bertelsmann omits key economic indicators (adjusted net national income, gross national savings, government cash surplus/deficit, current account balance, government debt, foreign direct investment, broad money), and some environmental indicators, on all of which the UK and USA perform poorly.

The leading 10 countries on overall averages (Table 6) in our sample of 104 countries are Switzerland, Norway, Denmark, Austria, Sweden, Germany, Croatia, the Netherlands, Romania, and Chile. With the exception of Chile, all are European countries. The high performance of the north-European countries is consistent with results from various international rankings including the 2013–2014 (and other) GCRs. The high performance of Croatia (7), Romania (9), and Chile (10) is explainable with all three countries scoring relatively high on at least two of the three domains. These countries score significantly lower on the GCR's ranking because their environmental and social results—respectively, 40, 20, and 54 for environment, and 21, 35, and 29 for the social domain—are not taken into account. Omitting these domains favors the USA, which scores 97 and 32, respectively, in those domains.

Specific Domains

We found considerable variation and some surprising results within the three domains.

Economic Indicators

Norway, Singapore, Kuwait, Switzerland, United Arab Emirates, Israel, Austria, Germany, the Netherlands, and China are the 10 leading G104 countries on economic indicators (Table 6). This group consists of five north-European countries, three oil-exporting countries, two Asian countries (the smallest and largest), and Israel. Norway belongs to two groups: North-European and oil-exporting. The biggest surprises in this domain are the mediocre economic performances of the UK and the USA, which score 37 and 34, respectively, on our 100-point economic scale. For comparison, the Sustainable Society Index (SSI 2014) scores the USA lower still on economic indicators (64 out of 100). For both countries, the following specific indicators (Table 7) contribute to these low scores: gross domestic savings, unemployment, government cash deficits, current account balance, and central government debt. Emerging G23 nations, China (10), Thailand (12), and Russia (15) outperformed both the USA and UK on overall economic indicators by substantial margins. The other Anglo countries—Australia, Canada, Ireland, and New Zealand—performed comparatively better than the USA/UK, scoring 14, 23, 32, and 24, respectively.

Environmental Indicators

Emerging nations tended to perform better on environmental indicators than industrialized countries (Table 6). Here, Rwanda, Bangladesh, the Philippines, Nepal, Morocco, the Dominican Republic, Sri Lanka, Tajikistan, Malawi, and Chad led the G104. Of the G23 (Table 7), emerging countries India (12), Brazil (41), Thailand (51), and China (61)

Table 7 Overall scores (average of averages) for G23 countries

	CHE	NOR	DNK	AUT	SWE	GER	NLD	CHN	NZL	ITA	THA	SGP	AUS	FRA	IRL	CAN	IND	UK	BRA	JAP	FIN	USA	RUS
Adjusted net national income	2	1	4	12	5	14	8	55	20	23	58	6	3	19	18	9	81	17	38	21	13	7	31
Gross domestic savings	14	8	29	28	26	32	23	4	39	58	22	2	25	51	10	41	18	72	57	48	50	65	27
Inflation	52	6	38	1	50	15	16	22	24	27	7	11	13	36	42	34	96	19	75	44	17	18	78
Patents	3	13	8	12	5	7	9	21	18	22	49	16	20	14	17	19	57	2	46	4	6	1	24
Unemployment	30	18	57	40	69	38	64	32	45	85	3	10	43	81	88	60	20	67	63	23	70	66	41
Current account balance	3	2	7	14	8	10	5	25	96	19	46	4	99	82	9	97	40	98	83	18	90	95	22
Central government debt	18	14	49	80	45	57	73		69	96	27	90	37	82	94	55	53	88	65	100	61	86	6
Foreign direct investment	66	13	50	14	22	49	3	64	23	25	46	1	4	19	2	6	87	12	37	91	100	15	28
Broad money	4	40	42		31			3			11	9	15				22	7	18	2		16	46
International reserves	1	5	4	24	11	26	23	21	19	29	27	2	32	33	71	37	79	42	38	7	36	47	20
Cash surplus/deficit	13	1	32	31	36	22	48		26	58	19	3	39	64	91	18	66	88	40	96	42	74	10
Average economic scores	4	1	13	7	11	8	9	10	24	33	12	2	14	41	32	23	58	37	50	28	42	34	15
Total ecological footprint	81	87	90	91	93	83	88	65	80	74	51	95	100	79	76	99	16	78	54	77	94	98	86
Energy use	77	93	76	80	90	81	85	60	84	68	56	87	91	79	70	98	23	75	47	78	92	97	89
Renewable energy consumption	55	24	50	42	31	75	87	63	45	64	56	95	80	69	84	54	39	86	35	88	37	82	90
Total GHG emissions (MtCO ₂ e)	62	48	77	74	47	84	86	72	89	64	54	80	93	52	88	94	30	99	49	85	87	100	90
Energy efficiency	2	35	8	26	54	29	43	85	68	13	71	9	63	46	5	87	58	16	44	40	82	73	92
Material footprint	89	97	87	93	86	81	86	68	83	76	57	100	98	80	88	91	33	78	64	79	95	90	53
Adjusted net savings	18	12	20	29	19	30	25	13	33	69	38	1	42	57	27	48	16	67	28	63	54	58	53
Terrestrial/marine protected areas	51	53	26	7	41	1	25	33	4	40	42	82	6	10	80	68	84	39	21	89	37	36	54
Forest area change (1990-2013)	30	52	25	41	47	44	29	10	35	14	17	64	59	18	5	53	27	24	74	48	42	40	45
Average environmental scores	60	68	59	63	71	69	79	61	73	62	51	91	94	65	75	98	12	82	41	95	92	97	96
Gini index	17	8	13	15	3	9	19	78	38	23	86	73	18	16	22	26	33	27	92	48	1	70	61
Life expectancy	3	11	22	15	9	21	12	37	12	4	51	5	7	6	17	10	74	16	53	1	18	25	66
Happiness (WHR)	1	3	2	12	7	22	6	56	8	37	29	20	9	24	15	4	76	18	14	35	5	13	47
Maternal mortality ratio	12	11	19	4	9	14	20	45	29	7	38	27	13	23	21	18	72	24	52	15	1	32	43
Prison population	30	22	17	36	14	27	20	48	72	31	98	81	61	37	28	42	2	58	92	11	15	100	97
Corruption index	7	5	1	19	4	11	8	46	2	37	63	6	9	18	16	10	59	12	40	13	3	14	83
Gender gap (WEF)	7	1	12	28	3	9	11	66	8	31	45	42	27	13	4	23	76	15	62	73	2	22	55
Shared prosperity growth	51	44	84	73	56	65	80	1		96	21		28	75	97	55	41	87	13		63	83	15
Mortality rate, under-5s	15	2	7	11	4	11	12	42	25	7	43	2	13	18	9	24	75	19	50	3	1	28	37
Average social scores	4	1	5	10	2	8	7	37	12	15	47	18	6	13	14	9	62	16	44	12	3	32	61
Overall scores, o/o 100	1	2	3	4	5	6	8	13	16	17	18	19	21	26	28	35	37	40	42	44	47	57	64
GCR scores, o/o 100	1	6	12	13	10	4	7	23	15	35	28	2	18	19	22	11	44	9	41	8	3	5	47
Score diff. bet'n GCR & this study	0	4	9	9	5	-2	-1	10	-1	18	10	-17	-3	-7	-6	-24	7	-31	-1	-36	-44	-52	-17

Notes: 1. N = Number of countries ranked. 2. Grey areas denote Anglo countries

outperformed all six Anglo countries—New Zealand (73), Ireland (75), UK (82), Australia (94), USA (97), and Canada (98) (Tables 6, 7). The higher scores for the emerging economies are mostly attributable to large rural populations who overall cause less environmental damage, have a lower use of energy, and higher use of renewables than highly urbanized and industrialized countries. However, emerging nations will struggle to maintain their low environmental impact as wealth grows, with Hertwich and Peters (2009) finding that nations increase their carbon footprint by 57% for each doubling of consumption.

The exceptionally poor environmental results for Australia, Canada, and the USA are difficult to explain given their countries' vast undeveloped and/or forested acreage. Norway, a major oil exporter, stands out because it is among the worst scoring countries on energy use (score 93) but a relatively high scorer in use of renewables (score 24). The most urbanized country in the G104 is Singapore, a city-state that—unsurprisingly—has a poor environmental score of 91, which is, however, still ahead of the USA (97) and Canada (98).

Social Indicators

Mostly North-European countries lead the G104 on social indicators: Norway, Sweden, Finland, Switzerland, Denmark, Australia, the Netherlands, Germany, Canada, and Austria (Tables 6, 7). This finding is consistent with other rankings (e.g., World Happiness Report, Sustainable Development Goals Index, Social Progress Index, Sustainable Society Index, and Human Development Report). However, once again the USA scores relatively low (32) compared with the eight European and two Anglo leaders. Interestingly, between 2007 and 2012, six G23 countries (Denmark, Ireland, Italy, Netherlands, UK, USA) showed a *worsening* “shared prosperity” trend for their lowest 40-percent population (see World Bank (2016s) raw data).

Why the Disparity Between the GCR and Our Study?

How can the huge differences between our study and the GCR for the two key Anglo countries—the USA and the UK—be explained? Basically, disparities arise due to

methodological problems found in the GCR: exclusion of environmental and social factors, input factors accounting for two-thirds of its measures, ideological bias, excluding relevant data, including irrelevant data, conflicting competitiveness indicators, fourfold counting of one indicator, over-reliance on naïve opinions, small respondent samples to surveys, and, most importantly, the failure of neoliberalism adherents to test their ideological beliefs against outcomes. We return to this below. For similar reasons, this disparity also exists between our study and some other country rankings such as the Human Development Index (UN 2014), the Legatum Prosperity Index (Legatum Institute 2016), and IMD's World Competitiveness Report (IMD 2016).

Volatility of Rankings

Table 8 shows that country rankings on the 11 economic indicators across four reporting periods (1998, 2003, 2008, 2013) have remained relatively stable, with the *coefficient of volatility* for the averages never exceeding 0.6, considerably below the accepted standard of 1.0. The implication is that the 2013–2014 GCR results are in line with previous years. This consistency is not unexpected given that national indicators tend to change slowly, except for critical events such as the Global Financial Crisis (GFC). At the individual indicator level, the most volatile indicators appear to be current account balance and foreign direct investment.

Neoliberalism and Rankings

A major issue raised in this paper is a possible link between a country's neoliberal policies and practices, and its rankings. This part of our study is exploratory, since our primary focus was on testing countries' performance using outcomes only, and neoliberal policies are inputs. However, it seems appropriate to examine the role of neoliberalism as a possible explanation for our findings, and this requires some reference to inputs.

Although defining the concept of neoliberalism has attracted little scholarly attention in political economy, it has come to be associated with a radical form of market fundamentalism (Boas and Gans-Morse 2009). Neoliberalism finds expression in numerous ways: a preference for small government, low taxes, minimal regulation of markets, a shareholder focus to the exclusion of a wide range of possible stakeholders, a pre-occupation with short-term outcomes, high market capitalization, flexible labor markets including the ability to fire at will and pay low wages, minimal worker unemployment support, and many others. About one-sixth of the GCR indicators are demonstrably ideologically biased toward certain so-called neoliberal input policies. The Heritage Foundation (2016a, b), a Washington-DC-based “think

tank” that describes itself as “the most influential conservative group in America,” is a prominent proselytizer of this kind of evidence-poor thinking.

Flexible labor market *input* policies are vigorously prosecuted in the USA and UK but less so among other Anglo countries, which could explain some of the outcome differences between the Anglo countries in our study. Table 9 juxtaposes our country performance findings with five so-called success factors (SFs) propagated by the Heritage Foundation (2016a, b). The top and bottom halves of the table, respectively, show our study's six top countries (all north-European) and the six Anglo countries. Note that the table needs to be read with great care since the data are from different sources and so the *lowest* numbers in columns 2, 3, 4, and 5 (numbers in bold) have the highest compliance (HC) with the neoliberal “success factors,” whereas in column 6, the *highest* number (in bold) is high compliance. The results fail to demonstrate that adherence to these five neoliberal SFs delivers success. Sweden eschews all five SFs, doing the opposite to what neoliberalism prescribes, and yet it scores fifth-highest in our study and 10 in the GCR. Switzerland, which has relatively low job protection but pays high unemployment benefits, is our and the GCR's highest-scoring country overall (1), it also scores highest on SF compliance on general government expenditure (11) and tax (9.5), second-highest on market freedom (4), middling on employment protection, and least-compliant (2) with the unemployment benefits SF. The USA scores second-highest on general government expenditure and tax, middling on market freedom, and highest on employment protection and unemployment benefits. Notably, the high-performing European countries include the highest and the lowest SF compliance scores on general government expenditure and on tax, and the second-highest (4) and lowest (32) on market freedom. However, the USA is clearly most in alignment with the neoliberal SFs employment protection (0.49) and unemployment benefits (46). Unfortunately for the USA, its “good” SF scores do not translate into high performance or competitiveness.

In other words, certain neoliberal input policies (e.g., government spending and tax revenues) predict neither high nor low competitiveness, in contrast to certain labor market policies (such as employment protection and unemployment benefits). This underscores the importance of rigorous separation of input and outcome factors. The resulting highly complex, and often paradoxical, interactions between enterprise flexibility and worker security—so-called flexicurity—were investigated by Auer (2007, p. 11) who concluded that “these apparent paradoxes might be solved if one intelligently designs labor market reforms that take into account the need for stability, flexibility, and security... Omitting one of these elements—and also the social dialogue on the process side—will produce suboptimal results

Table 8 G23 economic longitudinal study—test for variability in outcomes

Year	Indicator	CHE	NOR	DNK	AUT	SWE	GER	NLD	CHN	NZL	ITA	THA	SGP	AUS	FRA	IRL	CAN	IND	UK	BRA	JAP	FIN	USA	RUS
1998	Adjusted net national income	1	3	4	9	6	10	8	67	23	16	54	15	18	12	14	19	78	7	32	5	13	2	60
2003		1	2	4	12	5	15	7	60	22	16	51	19	20	14	6	17	74	8	40	10	11	3	44
2008		2	1	3	9	4	14	6	60	23	17	51	18	15	13	7	16	77	12	38	19	8	11	32
2013		2	1	4	12	5	14	8	55	20	23	58	6	3	19	18	9	81	17	38	21	13	7	31
1998	Gross domestic savings	8	10	19	18	12	27	11	3	35	34	4	1	26	32	5	33	22	50	59	7	6	41	39
2003		16	10	22	24	21	36	23	3	29	41	15	1	35	40	6	33	18	65	50	26	19	58	11
2008		12	10	27	26	19	30	18	7	46	51	20	6	32	47	16	34	17	67	50	36	25	65	13
2013		14	8	29	28	26	32	23	4	39	58	22	2	25	51	10	41	18	72	57	48	50	65	27
1998	Inflation	33	5	3	20	35	19	1	43	15	2	63	38	24	28	7	17	80	6	26	27	11	8	90
2003		41	16	3	19	2	30	5	27	28	20	8	45	23	4	44	22	48	18	89	53	34	12	86
2008		2	14	10	8	11	6	3	34	16	9	30	38	22	7	17	1	46	12	31	5	18	15	79
2013		52	6	38	1	50	15	16	22	24	27	7	11	13	36	42	34	96	19	75	44	17	18	78
1998	PCT patent applications	3	18	9	14	4	5	8	51	20	24	55	29	23	15	16	21	73	11	46	1	6	10	25
2003		2	18	8	10	4	5	7	36	14	22	53	20	21	13	16	19	65	12	47	1	3	9	23
2008		1	12	8	11	5	7	6	28	20	23	56	18	22	16	15	19	64	17	50	2	3	10	26
2013		3	13	8	12	5	7	9	21	18	22	49	16	20	14	17	19	57	2	46	4	6	1	24
1998	Unemployment	23	24	33	38	63	67	28	31	55	77	19	20	53	80	54	60	27	43	91	26	85	29	86
2003		21	22	33	28	35	71	17	23	27	66	6	39	38	65	25	51	19	29	85	32	73	41	59
2008		22	13	23	30	53	69	13	33	29	60	6	25	32	68	55	50	31	44	82	27	54	47	52
2013		30	18	57	40	69	38	64	32	45	85	3	10	43	81	88	60	20	67	63	23	70	66	41
1998	Current account balance	2	22	93		6	85	8	17		11	12	1	99	9		89	29	64	87	7	3	97	24
2003		1	2	9		5	15	7	28	90	85	24	3	99	17		16	34	91	32	11	8	100	18
2008		12	2	10	8	5	6	7	21	95	88	30	3	96	76	99	26	38	93	60	15	14	94	17
2013		3	2	7	14	8	10	5	25	96	19	46	4	99	82	9	97	40	98	83	18	90	95	22
1998	Central government debt	15		62		80	22	56			91	5	76	9	55	47	65	35	29		73	67	25	93
2003		18	27	40	78	67	31	44		42	96	13	98	11	76	24	51	73	64		100	38		
2008		27	56	35	88	62	52	69		44	98	23	96	13	87	65	58	79	83	81	100	37		6
2013		18	14	49	80	45	57	73		69	96	27	90	37	82	94	55	53	88	65	100	61	86	6
1998	Foreign direct investment	8	9	6	12	4	22	3	54	14	41	35	5	24	13	1	10	88	7	28	56	2	11	64
2003		4	10	15	9	13	18	5	54	100	19	41	2	20	33	1	25	87	21	49	52	12	29	50
2008		5	4	95	17	1	56	98	57	20	96	51	2	3	26	100	6	71	9	43	47	97	13	28
2013		66	13	50	14	22	49	3	64	23	25	46	1	4	19	2	6	87	12	37	91	100	15	28
1998	Broad money	3	23	21		41			5	12		8	7	16			14	29	11	40	1		18	67
2003		5	26	40		44			3	15		10	9	18			4	21	11	29	2		20	66
2008		6	39	31		29			5	16		13	9	14			8	20	3	24	2		17	54
2013		4	40	42		31			3			11	9	15			22	7	18	2		16	46	
1998	Total international reserves	2	3	7	6	16	18	14	58	22	24	36	1	27	20	9	28	78	33	46	15	13	35	61
2003		2	3	4	16	11	23	20	53	17	27	36	1	15	26	30	24	69	35	56	5	12	38	41
2008		4	3	6	21	16	26	25	33	19	24	27	1	32	29	73	37	75	48	44	5	30	45	17
2013		1	5	4	24	11	26	23	21	19	29	27	2	32	33	71	37	79	42	38	7	36	47	20
1998	Cash surplus/deficit	23	3	48	77	35	49	52			75	91	1		78	5	12	63	34	72		22	11	92
2003		30	1	38	57	61	54	72		8	73	9	4	18	89	22	15	66	77	76	24	11	91	5
2008		24	3	20	71	30	45	38		21	78	32	5	22	82	97	25	86	89	51	72	13	95	8
2013		13	1	32	31	36	22	48		26	58	19	3	39	64	91	18	66	88	40	96	42	74	10
	Avg 1998	11	12	28	24	27	33	19	37	24	40	35	18	32	34	18	33	55	27	53	22	23	26	64
	Avg 2003	13	12	20	28	24	30	21	32	36	46	24	22	29	38	19	25	52	39	55	29	22	40	40
	Avg 2008	11	14	24	29	21	31	28	31	32	54	31	20	28	45	54	25	55	43	50	30	30	41	30
	Avg 2013	19	11	29	26	28	27	27	28	38	44	29	17	30	48	44	38	56	47	51	41	49	45	30
	Max	19	14	29	29	28	33	28	37	38	54	35	22	32	48	54	38	56	47	55	41	49	45	64
	Min	11	11	20	24	21	27	19	28	24	40	24	17	28	34	18	25	52	27	50	22	22	26	30
	Range	8	3	10	5	7	5	9	9	14	15	11	5	4	14	37	12	4	20	5	20	27	19	34
	Mean	13	12	25	27	25	30	24	32	32	46	30	19	30	41	34	30	55	39	52	30	31	38	41
	SD	5.5	0.7	1.0	0.9	0.6	3.8	6.0	6.4	9.6	3.3	4.2	0.8	1.2	9.8	19	3.0	1.2	14	1.2	14	18	13	24
	CV	0.4	0.1	0.0	0.0	0.0	0.1	0.3	0.2	0.3	0.1	0.1	0.0	0.0	0.2	0.6	0.1	0.0	0.4	0.0	0.5	0.6	0.3	0.6

Table 9 Comparing neoliberal “success factors” with country performance outcomes

Asserted neo-liberal ‘success factors’ (HC = Highest Compliance with SFs)						
Countries	Competitiveness scores (our study)	General government expenditure ¹ as % of GDP (low 11% expenditure is HC). ² Data (World Bank 2013)	Tax revenue as a % of GDP (low 9.5% revenue is HC). ² Data (World Bank 2012)	Market freedom rank (least regulated is HC). ² Data (Heritage Foundation 2016b)	Employment protection score (low score of 0.49 is HC because it is less strict). ² Data (OECD 2013)	Unemployment benefit rank (score of 46 is HC because it reflects low benefits). ² Data (Vlandas 2012)
Switzerland	1	11.0	9.5	4	1.50	2
Norway	2	21.2	27.0	32	2.23	6
Denmark	3	26.5	33.3	12	2.10	11
Austria	4	19.8	25.7	28	2.12	20
Sweden	5	26.3	26.1	26	2.52	3
Germany	6	19.2	11.6	17	2.53	23
NZ	16	18.7	28.4	3	1.41	33
Australia	21	18.0	21.3	5	1.67	43
Ireland	28	17.4	22.6	8	1.50	39
Canada	35	21.0	11.8	6	0.92	17
UK	40	20.1	25.5	10	1.18	46
US	57	15.1	9.8	11	0.49	31

Notes:

1. Refers to final consumption expenditure.

2. Highest Compliance (HC) (indicated by bold numbers on table) means most compliant with alleged neoliberal ‘success factors’.

either for productivity, employment performance or workers’ security.” Switzerland, which has the second-highest ranking on unemployment benefit replacement rates of 51 countries (Vlandas 2012), typifies such a response. Its employers enjoy fairly high levels of flexibility in firing, but not at the expense of employees, who enjoy high unemployment benefits. The USA, which scores low on both employment protection *and* unemployment benefits, ranks 31 (Table 9), and so is subject to both labor market instability and worker insecurity (Auer 2007).

Table 9 therefore offers a possible insight into why the two countries most aligned with neoliberal thinking—the USA and the UK—are among the worst performers in our G23. In short, European high performers can score at the extremes of certain neoliberal policies, such as general government final consumption expenditure, tax revenue, and market freedom. However, they consistently offer more employment protection and/or unemployment benefits, which the literature links to high country performance.

We have made the case above that the GCR rankings are significantly distorted by an uncritical belief that restrictive labor regulations must impede competitiveness. In line with this thinking, the GCR (2017) identifies 15 “most problematic factor[s] for doing business.” One of these is “restrictive labor regulations.” The WEF ranked 138 countries; for 12 of them it identified “restrictive labor regulations”—which are an ideologically biased input—as their biggest problem. The countries were (GCR ranks shown in brackets): Australia (21), Austria (19), Ecuador (91), Finland (10), France (21), Netherlands (4), Oman (66), Qatar (18), Saudi Arabia (29),

Singapore (2), United Arab Emirates (16), and Uruguay (73). The WEF sees no contradiction in the fact that many of these countries achieve good to excellent GCR rankings notwithstanding their strict labor regulations. It also discounts its own research, which shows that countries that score low on the neoliberal SFs, score high in its own GCR rankings. The WEF’s “most problematic factors for doing business” are themselves an interesting case of competitiveness indicator invalidity, irrelevancy, and bias. For example, 12 of the 15 indicators are inputs, most of which are subject to bias.

Based on this very brief analysis of key neoliberal input factors, it seems reasonable to suggest that the more a country deviates from certain aspects of neoliberalism, the better it will score—an avenue for future research. This finding poses an ethical dilemma for proponents of neoliberalism: Do due diligence to ascertain for themselves who is outperforming whom on *outcomes*—and respond accordingly—or, maintain neoliberal beliefs, frame questions accordingly, provide data that are bound to distort results, and condone whatever negative outcomes this approach entails for individuals, organizations, nations, and ultimately the planet.

Why do people perpetuate policies and practices that demonstrably deliver inferior outcomes? We suggest five reasons why the myth of the USA and UK being highly competitive persists. First, Americans appear to be unaware of the parlous state of their country. Thus, while Switzerland justifiably scores highest both overall and in the happiness ranking (Helliwell et al. 2015), the USA scores 57 overall but 13 in happiness ranking—things are perceived better by Americans than data indicate. Conversely, the famously

pessimistic Germans score 6 in our study but 22 on happiness. Second, both the USA and the UK have failed to empirically test their assumptions using outcomes only. Third, they are consistently (but wrongly) ranked highly by influential bodies such as the WEF, thereby being reinforced in certain counterproductive neoliberal belief systems. Fourth, some countries are beneficiaries of significant natural, produced, and human capital, such as infrastructure, institutions, services, and skills that were developed over previous decades and centuries (e.g., Piketty 2014). These five factors raise expectations of high competitiveness and appear to make people blind to these countries' poor actual outcomes. The WEF's approach to country rankings is unethical in many ways, not the least being in encouraging emerging nations to emulate the unscientific and unsustainable practices of underperforming—but influential—countries.

Limitations and Further Research

To obtain an accurate picture of country competitiveness, we carefully chose indicators based on outcomes only. Extant country rankings could generally not be used because composite rankings would result in double counting; inputs and/or ideologically biased indicators would bias results; or datasets were compromised in other ways. For our study, we selected extant rankings from reputable institutions that were not biased in these ways. Nonetheless, every study has limitations:

- Rankings, by definition, are based on ordinal and not information-rich interval measures. A more fine-grained, comprehensive interval-based study could be undertaken to overcome this limitation. This is a limitation that our study shares with the GCR.
- The use of certain popular indicators can lead to double counting. For example, the GhG emissions indicator overlaps to some extent with the “adjusted net savings indicator.”
- This study is basically a snapshot in time. A more useful, but much larger, study would involve a trend analysis of 100+ countries on 30 or more indicators at, say, 3-year intervals covering the last 50 or so years.
- We were unable to subject the data to sophisticated analysis such as the aggregation methodology employed by Bertelsmann Stiftung's *SDG Index and Dashboards Global Report* (Sachs et al. 2016). Future researchers should test for substitutability of input and output indicators.
- Our study used 29 indicators only; however, this compares well with the GCR, which, after discounting all the inputs, biased and naïve questions, has just over 30 valid outcome measures. Nevertheless, to achieve more

robust results, it may be desirable to increase the number of outcome indicators to eliminate any inadvertent bias.

- Inputs need to be the subject of a separate much larger study that clearly identifies which input policies (neoliberal or not) produce which outcomes. Such a study should also include input factors that the GCRs omit, such as corporate social responsibility practices, organizational culture (e.g., cooperative vs. competitive), sustainability practices, leadership practices (e.g., top-down vs. distributed), long-term versus short-term focus, and the important role of stakeholders other than managers and shareholders (e.g., workers, customers, suppliers, and local communities). However, merely separating inputs and outcomes, while methodologically sound, remains oversimplified. For example, the United Nation's *Inclusive Wealth Report* (2014), a joint initiative of several international organizations, distinguishes three kinds of inputs, so-called capital assets that contribute to wealth: natural capital, produced capital, and human capital, with care being taken as to how wealth is defined.

In short, there is a need for a robust long-term study of at least 100 countries comparing three classes of input indicators (natural, produced, and human capital) in at least three domains (economic, environmental, and social) with sufficient numbers of outcome indicators to allow meaningful and objective conclusions to be drawn about which input indicators correlate with which outcomes.

Conclusions

The main purpose of our study was to test the assertion that by removing technical, ideological, and other flaws in the GCR, and by adding environmental and social indicators, the competitiveness rankings of Anglo countries would drop substantially (Bergsteiner and Avery 2012), particularly for the USA and UK. This prediction was wholly supported for the USA, UK, and Canada, but less so for Ireland, which ranked only slightly worse in our study, and for Australia and New Zealand, whose scores remained about the same. Consistent with other studies, including the GCRs, we found that the champions of competitiveness are mostly north-European countries. Most of these countries are social-market economies that largely eschew neoliberal labor market positions and are characterized by strong government, regulated markets, and employee protection. This contradicts the assertion, evident in WEF publications such as its GCRs, that neoliberal policies necessarily pave the way to socio-economic well-being. Whatever the reasons behind the high performance of the north-European countries and generally low performance of major Anglo countries, our data suggest that emerging economies should be looking to learn from

the Europeans rather than from the USA or UK. Given that most of the high-performing European countries enjoy little underlying wealth in terms of natural capital (unlike Anglo countries such as Australia, Canada, and the USA), their high competitiveness is even more impressive. Research that reinforces misperceptions about the efficacy of neoliberalism helps perpetuate a system that is not only flawed, but deeply unethical in the socially divisive, environmentally destructive, and economically impoverishing outcomes it produces.

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Compliance with Ethical Standards

Conflict of interest Harald Bergsteiner and Gayle C. Avery declare that they have no conflict of interest.

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