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Keynes', Piketty's, and an extensive failure index: Introducing maldevelopment indices

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Introduction

In recent years there has been a proliferation of alternatives to move beyond GDP as an indicator of socio-economic wellbeing. This was most probably due to the growing distrust of GDP as an appropriate metric for measuring the degree of advancement of societies. Another probable reason for the growing GDP disbelief is the ecological crisis rapidly approaching catastrophic levels, and the international opinion and mass mobilization it has given rise to. Ecological disruption is not a subject about which GDP has much to say — although there have been attempts to adjust GDP to allow for the costs of environmental destruction.[1] GDP is not only a socially (distributionally) blind indicator but also an ecologically blind indicator.

The search for alternatives to GDP has even reached the highest bastion of economic orthodoxy, namely the International Monetary Fund (IMF). In a recent article in the IMF's house organ, Daniel Benjamin and others explain how to measure "the essence of the good life," and how to find a better gauge of prosperity than GDP (Benjamin *et al.* 2021, based on Benjamin *et al.* 2017). Their proposal is "beyond GDP," both in the sense of abandoning GDP's economistic approach and also in the sense of abandoning GDP's objective approach based on observable, measurable physical quantities. The approach is based on subjective, non-observable mental states, as reported by respondents of surveys designed to detect them. The approach is thus methodologically close to that of the World Happiness Report, which is mainly based on the results of the Gallup World Poll.[2]

The plethora of different attempts to find a better gauge of human progress, and to quantify "the good life" are positive and promising symptoms of an extensive collective search — a wide and intellectually multifaceted attempt to find a new economic and social paradigm. That is, it can be seen as a search for a way out of the present, in many senses flawed system.[3]

However, the "GDP mentality" is still strong and dominant, and it seems to prevail in the factual choices of most governments and international organizations. This mentality not only ignores or neglects the policy reorientation messages implicit in the proposed alternatives to GDP. It also refuses to recognize

[1] See for instance Fleurbaey and Blanchet (2013) for a survey of different alternatives "beyond GDP."
[2] See https://worldhappiness.report. The Nordic countries and Switzerland have ranked as happiest since the inception of the World Happiness Report rankings.
[3] A shortlist of alternative indicators beyond GDP should at least include the following: UNDP Human Development Index, OECD Better Life Index, EU's Beyond GDP program, Genuine Progress Indicator, Social Progress Index, Happy Planet Index, Gallup-Sharecare Well-Being Index, Index of Sustainable Economic Welfare, Gross National Well-being, and Green National Product.

the flaws and ills of the present system, since long been denounced by numerous social thinkers and reformers.

One most prominent such thinker and reformer economist, John Maynard Keynes, introduced the concluding chapter, on the social philosophy underpinning his book — *The General Theory of Employment, Interest, and Money* — with the sentence:

> The outstanding faults of the economic society in which we live are its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes.

It is relevant to remind economists, including Keynesian economists, of these final words. Keynes is here taking distance from, or negating, the supposed economic laws of distribution. The distribution of incomes is for Keynes *arbitrary*, that is, it does not follow any such law, as for instance the marginal productivity law. The same applies to the distribution of wealth, i.e. accumulated incomes/profits. This means that the distribution of wealth and incomes can for Keynes be modified without that impinging on some ineluctable economic law. What is more, for Keynes the rules according to which wealth and incomes are distributed *should* be changed, because they are inequitable.

We live now, 86 years after *The General Theory*, and after several decades of the dismantlement of the Welfare State, back in economic societies with levels of income and wealth inequality, and with employment problems, similar to those of Keynes' time. To that, we must now add the new and very ominous risks inherent in the impending climate catastrophe.

This should be seen as a real failure, and urgent measures should be taken to get rid of it. The first rational measure in such a situation should be to carefully scrutinize the state we are in. This is where the idea of failure indices comes in. While alternatives to GDP try to show what a better life should look like, and rank countries according to how far they have reached in that direction, a failure index should show what are the unsolved faults and flaws of present societies needing urgent attention, and how far they have come in solving them.

A Keynesian and an eco-Keynesian index

So we can now introduce our first failure index, a venerable Keynes index. The Keynes index simply tries to implement an empirical evaluation of the fundamental ailments of present societies as diagnosed by Keynes, namely unemployment, income inequality, and wealth inequality. Three flaws whose magnitude — that for simplicity we assume of the same weight and importance — is measured by particular indicators. This index will we call Keynes1.

We also define a Keynes2 index, an eco-Keynesian index. To our knowledge, Keynes did not refer to the environmental question in his writings. But he was a compelling and persuasive critic of the ostensible flaws of the societies of his time. Confined as they were within the stringent paradigm of free-market *laissez-faire*, those societies were not allowed to search, let alone to provide, any solution to their multiple faults. Flaws that the spontaneous general equilibrium of *laissez-faire* could not solve, would soon be "solved" by the mechanism of the spontaneous "extended general equilibrium" which includes markets, and also non-market mechanisms such as politics and conflict—including war and revolution.

The ecological crisis, and in particular the global warming crisis, are flaws with implications more grievous than that of the inequality and employment crises. These flaws also cannot be addressed and

solved by the spontaneous general equilibrium of markets. If not addressed and solved by the conscious agency of collective bodies such as governments and international initiatives and organizations, there is the very real risk that they will be "solved" by the "extended general equilibrium" mechanism that includes war, and also political and ecological collapse.

It is quite natural to assume that a Keynes of today would include global warming, or more precisely, the unsustainable emissions of greenhouse gases (GHG), among the outstanding faults of societies existing in our time. We may confidently also assume that Keynes would consider the ecological crisis, and particularly the global warming crisis, such an urgent and important problem as the income and wealth inequality, and unemployment crises. An eco-Keynesian failure index should then include an ecological GHG indicator, and with the same weight, a socio-economic flaw index comprising unemployment and income and wealth inequality, our previous Keynes1 index. This will be called the Keynes2 index.

A "Piketty" failure index

The *World Inequality Report 2022* (WIR22) is the collective work of dozens of researchers, coordinated by Lucas Chancel, Thomas Piketty, Emmanuel Saez, and Gabriel Zucman (see Chancel *et al.* 2022). As they state on page 10 of the executive summary:

> Economic growth numbers are published every year by governments across the globe, but they do not tell us about how growth is distributed across the population – about who gains and who loses from economic policies. Accessing such data is critical for democracy. Beyond income and wealth, it is also critical to improve our collective capability to measure and monitor other dimensions of socio-economic disparities, including gender and environmental inequalities.

The authors of the WIR22 are here implicitly criticizing the GDP indicator for not taking account of how income or well-being is distributed among persons — a criticism that by the way also applies to most proposed alternatives to GDP. The WIR22 report considers it of critical importance to be able to accurately assess the magnitude of income and wealth inequality, and also of gender and environmental disparities. They provide a wide up-to-date and consistent dataset covering these aspects for a representative list of 26 countries comprising a large majority of the world population.

WIR22 is a precious mine from where to extract data for our Keynes1 and Keynes2 indices. From WIR22 data can also a meaningful failure index be defined which includes what for its authors are the four critical flaws of income, wealth, gender inequality, and environmental damage (GHG emissions). For brevity we call this index Piketty1 — Piketty being a well-known name among economists and representative of the large group of researchers behind the Report. Piketty2 includes the four indices of Piketty1, plus a fifth indicator of transparency. The transparency indicator measures the level of availability and quality of economic inequality data, as assessed by WIR22 together with the United Nations Development Program (UNDP).

Estimating Keynes' failure indices

Keynes' first index defined above is Keynes1, which includes Keynes' three defined flaws of unemployment, income inequality, and wealth inequality. Keynes1 is the simple average, for each country, of the corresponding unemployment and inequality indices. Indices vary between 0 and 1.

From raw data for flaw x_i (for instance, the rate of unemployment) in country i, index I_i for (the rate of unemployment in) country i is obtained by making:

$$I_i = \frac{x_i - x_{min}}{x_{max} - x_{min}} \quad (1)$$

where x_{max} and x_{min} are the highest and lowest country (unemployment) values respectively.

A composite index is composed of several indices. Composite index I_i^c (e.g. Keynes1) for country i, is the sum of the *n* different indices, divided by the number *n* of indices (three in the case of Keynes1). That is, I_i^c is the simple average of the *n* different I_i :

$$I_i^c = \sum_{p=1}^{n} \frac{I_{i,p}}{n} . \quad (2)$$

Composite index I_i^c will not, in general, vary between 0 and 1. For convenience, to obtain 0 to 1 values we re-index it, defining indexed $I_i^{c\prime}$:

$$I_i^{c\prime} = \frac{I_i^c - I_{min}^c}{I_{max}^c - I_{min}^c} . \quad (3)$$

This is how Keynes1 — and all indices in this paper — are constructed. The second index, Keynes2, assumed that a present-day Keynes would possess an ecological consciousness as strong as his economic and social consciousness. Keynes2 index gives then the ecologically harmful GHG emissions the same weight as Keynes' socio-economic flaw indicator Keynes1. That is, Keynes2 is the (re-indexed) arithmetic mean of Keynes1 and GHG emissions.

We now briefly comment on the definitions and sources of the indicators composing the Keynes' indices — a detailed description is given in the Appendix. (An Excel spreadsheet with the raw data on components and indices for the 26 countries can be requested from the authors.)

The carefully and laboriously constructed WIR22 dataset is the source of our Keynes1 and Keynes2 failure indices, except for the rate of unemployment, which is not included in WIR22. Employment-to-population data from the UN Human Development Report are used instead. According to the data, countries with the highest non-employment rates are countries such as Algeria, South Africa, and Morocco, where women's employment is low. Countries with the highest employment rates are China, Indonesia, and Israel.

WIR22 country-sheets provide information for the remaining two components of Keynes1 (income and wealth inequality), and the ecological component of Keynes2 (GHG emissions per capita).

In WIR22 income inequality is gauged by the ratio of the average income of the top 10 percent to the average income of the bottom 50 percent (income gap). The 10 to 50 percent income gap is one of many possible measures of income inequality and a plausible one. Of the 26 countries of the report, the highest income inequality is found in South Africa, and Latin America (Mexico, Chile, and Brazil). Countries with the lowest income inequality are Sweden, France, and Italy.

WIR22 country sheets do not provide measures of wealth inequality. They do provide data for computing our own wealth inequality index: the top 10 to bottom 50 percent ratio of the shares of total

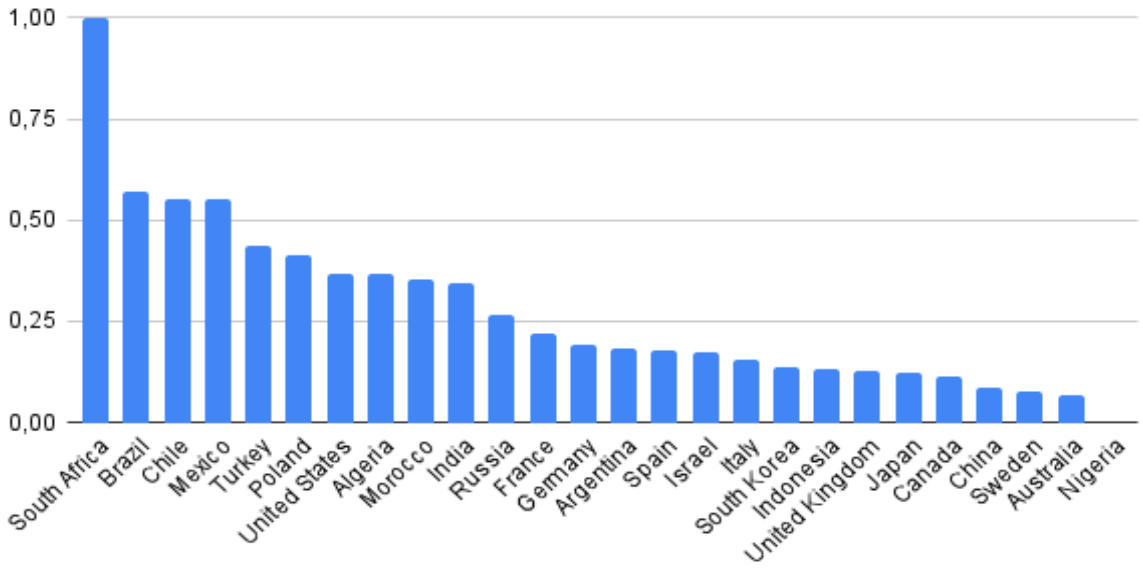
wealth owned by the respective group. Wealth inequality is in general much larger than income inequality. In countries in which income inequality is large, wealth inequality is huge: South Africa, Chile, Brazil, and Mexico. Wealth inequality is lowest in Italy, Spain, and Australia.

The above are the components of the Keynes1 index. To compose Keynes2, the eco-Keynesian failure index, we need data about greenhouse gas emissions. The WIR22 data of per capita GHG emissions include emissions from carbon dioxide (CO2) as well as from other greenhouse gases such methane (CH4) and nitrogen oxides (NOx).[4] They take account of (net) emissions in production, consumption, and foreign trade. Raw data on GHG emissions per capita are transformed in an index according to the formula above. The highest per capita emitters are the USA, Canada, and Australia. The lowest emitters are Nigeria, India, and Algeria.

Results for Keynes1, first Keynes' failure index

Keynes1 is the (re-indexed) simple average of the indices of unemployment, income inequality, and wealth inequality summarily described in the previous section. We present here the Keynes1 results for the 26 WIR22 countries in the visually more direct graphic form.

Keynes1 Index



South Africa ranks highest by far in the Keynes1 index, followed by Brazil, Chile, and Mexico. This is a direct consequence of the weight that income and wealth inequality — exceptionally high in these countries — have in Keynes' failure index.

A result that counters established prejudice is the place of Nigeria as the country least prone to Keynes' failure. Unfortunately, the result is perhaps not very reliable, because WIR22 places Nigeria as lowest in the transparency dimension. Australia, China, and Sweden follow among the countries less affected

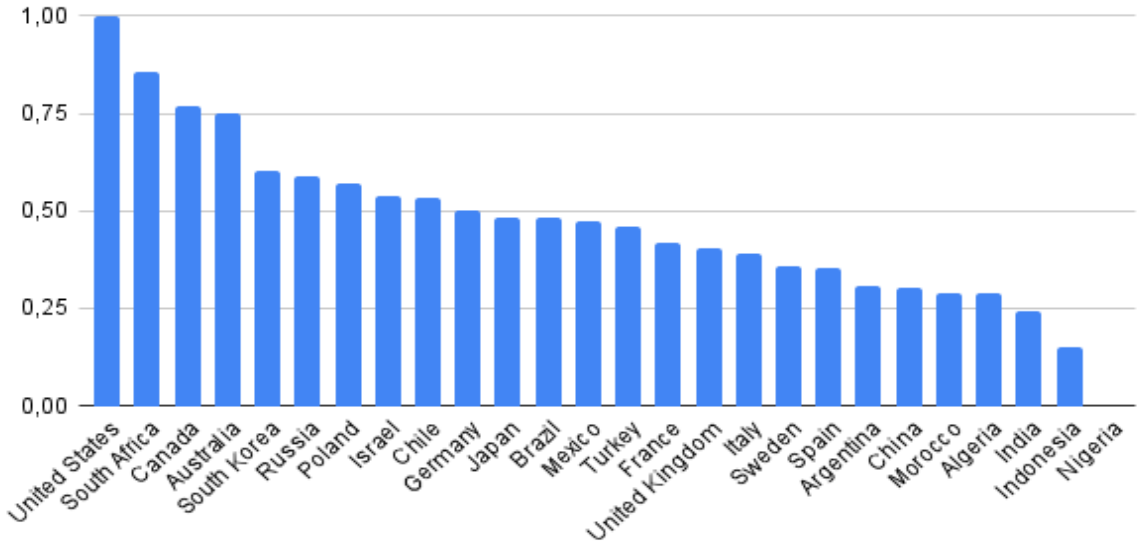
[4] WIR22 provides also estimates of the distribution of per capita GHG emissions by different groups of emitters *within* countries. In countries like China, Mexico, and Chile, the average per capita GHG emissions by the top 1 percent of emitters are 40 to 50 times the average emissions of the bottom 50 percent. See also Chancel and Piketty (2015).

by the Keynes1 malady. This also is perhaps a not very expected result, which is not put into question by credibility problems — although China's and Australia's transparency ratings are not very high.

Results for Keynes2, an eco-Keynesian failure index

Our eco-Keynesian index Keynes2 includes, with equal weights, socio-economic and ecological components. The socio-economic dimension is provided by the previous Keynes1 index; the ecological dimension is furnished by WIR22's GHG footprint, i.e. annual greenhouse gas emissions of the average individual. Keynes2 is the (re-indexed) unweighted arithmetic mean of Keynes1 and the GHG footprint index.

Keynes2 Index



The worst performers, with the highest eco-Keynesian failure values, are countries — except South Africa — that are rich and that socio-economically performed relatively well: USA, Canada, and Australia. Rich countries are in general high (per capita) emitters, and their high ecological damage rankings outweigh their favorable socio-economic ranking. In the case of South Africa, a relatively low GHG footprint (associated with low average income) was not enough to compensate for the inequality flaw. Other high inequality countries, such as most Latin American countries, succeed better in compensating high Keynes1 failure indices with low GHG footprint values, due to low average incomes.

The best performers, with the lowest Keynes2 index values, are without exception low-income countries with very low GHG per capita emissions. Very low emissions — and not too bad socio-economic rankings — by countries like Nigeria, Indonesia, Algeria, or Morocco, tend to dominate the resultant Keynes2 value.[5]

[5] A short digression. The highest emitters, i.e. rich countries emitting (per capita) several times the sustainable world average, should compensate countries emitting below the (per capita) sustainable world average. Climate transfers to poor, low polluting countries are presented as "aid," but they should be understood as compensations or indemnities for damages caused to their (share of the) atmosphere. A rational and equitable system of compensations should facilitate an organized transition path to sustainable emissions. Examples of rational transition schemes are for instance Barnes *et al*. (2008), Buzaglo (2007, 2009), and CSO (2021).

Results for Piketty1, first Piketty failure index

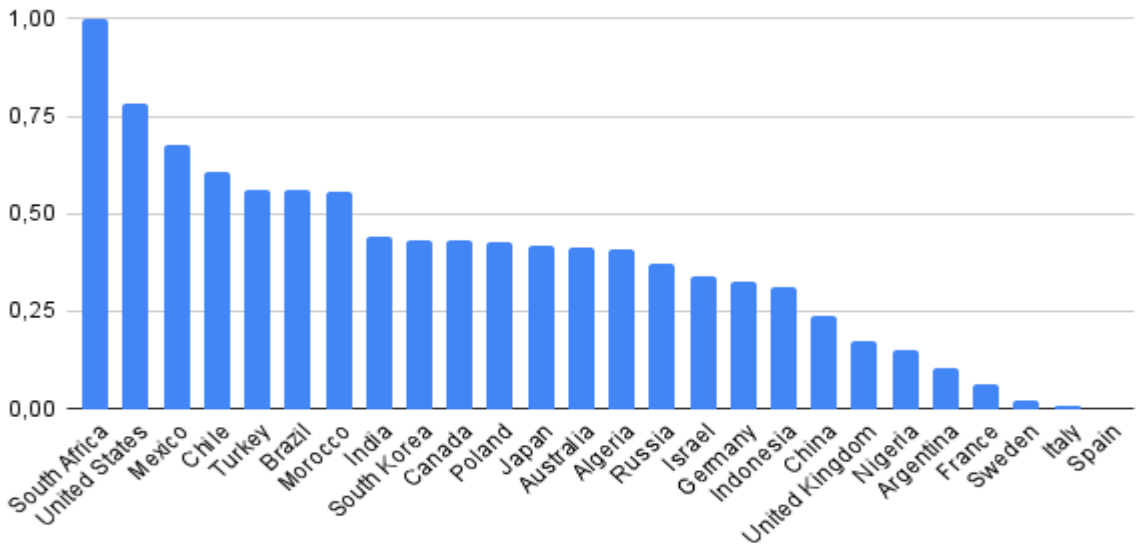
Piketty1, the first Piketty index, is composed of three indices of inequality — of incomes, of wealth, and gender inequality — and an ecological failure index of GHG per capita emissions. Except for the gender inequality index, these indices have already been introduced in previous sections, on the calculation of Keynes' indices.

WIR22's indicator of the degree of gender disparity or discrimination is the share of total labor income earned by women. The female labor income share partially reflects the extent to which women are integrated into the wider economic and social life of the community. A share of 50 percent indicates gender equality of total incomes; zero percent means no labor earnings by women.[6]

Ranking as the least gender unequal, Sweden, France, Poland, Russia, and Spain are close to zero in the index of gender failure. In these countries, the share of total labor income earned by women is around 40 percent. The gender failure index is highest in Algeria, Morocco, India, and Turkey.

The figure represents the ranking of countries according to Piketty's first failure index — the (re-indexed) simple average of four failure indices: of income, wealth, and gender inequality, and ecological damage (GHG per capita emissions).

Piketty1 Index



As in the previous Keynes1 index, the disheartening income and wealth distribution conditions of South Africa dominate also its position in the Piketty1 index. The US is second in the Piketty1 failure ranking, because of the world's highest GHG per capita emissions, added to relatively high income and wealth concentration values. For reasons similar, but milder than in the case of South Africa, Mexico follows in the Piketty1 ranking. Among the countries with the least Piketty1 indices, we find countries like Italy,

[6] The (non-)employment to population ratio used in our specification of the unemployment component of Keynes' indices also indicates to some extent the discrimination of women. To that extent, our Keynes indices also contain a gender failure component.

Spain, Sweden, and France, with different proportions of relatively favorable conditions for women, distributional equality, and a modicum of ecological awareness.

Results for Piketty2, second Piketty failure index

The WIR22 study provides also information on the degree of accuracy or credibility of the inequality data reported by countries. An index of data transparency produced jointly with the UNDP, "measures the level of availability and quality of economic inequality data." (p. 178 of the Report).

In principle, the reticence of administrations or authorities to transparency concerning data on economic inequalities may reflect two types of problems. One type of problem is related to the intended avoidance of the reputational loss that results from high inequality, which is universally considered a social and ethical fault. Countries might try to embellish their data on distribution by different nontransparent means, or by simply not collecting and reporting such data.

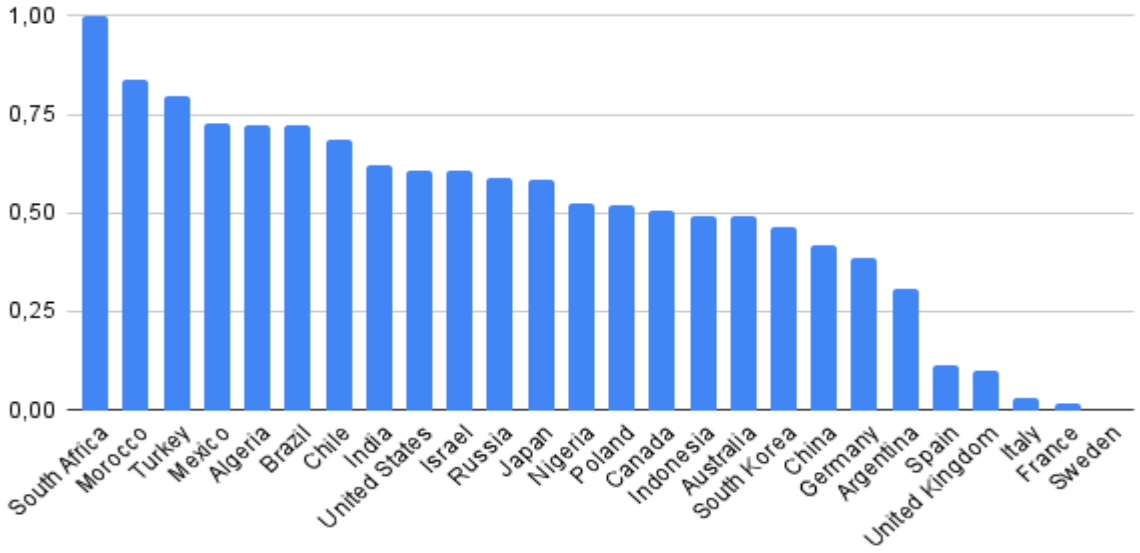
The second type of problem that data opacity may reflect is institutional corruption. The statistical services not taking data accuracy and transparency seriously may reflect the approach to integrity and trustworthiness prevalent in the institutional system in general.
The Piketty2 index adds to the Piketty1 indices a data transparency index reflecting both types of problems. Countries with high opacity indices are either underestimating inequalities, suffer from a (higher than average) degree of institutional corruption, or both. An increase in the Piketty2 index in relation to Piketty1 due to low transparency, for instance, would indicate that inequalities are higher than reported, that corruption is particularly high, or both. The second Piketty index could be considered a kind of "truthfulness adjusted" failure index.

However, we have in the Introduction manifested our skepticism about subjective indicators. In the case of the transparency index the subjects manifesting their feelings or opinions are not respondents to surveys, but experts and researchers in contact with countries' statistical agencies. Expert opinion may be well-founded, but there is still the possibility that they are not. An evaluation of the results must keep in mind this possibility.

The second Piketty index then adds a fifth component of transparency to the four Piketty1 failure indices (of income, wealth, gender inequality, and GHG emissions). Piketty2 is the (re-indexed) arithmetic mean of these five indices.

Compared with the Piketty1 index, the Piketty2 index ranking favors countries with high WIR22 transparency index values, such as the United States, the United Kingdom, or France. It worsens the positions of Nigeria, Algeria, Morocco, and others with low transparency values.

Piketty2 Index



The United States, for instance, with mediocre distribution values and the highest GHG per capita emissions, ranked second after South Africa in Piketty1 but is in the ninth position in Piketty2. Other countries with a large ranking change — in the opposite direction — are Algeria and Nigeria.

As stated above, these changes are based on subjective assessments; readers with an objectivist inclination may want to stay with the first Piketty failure index.

An extensive failure index

The index we introduce now tries to synthesize in one number a wide spectrum of economic, social, and political failure. This may seem overambitious or futile, but it is what GDP and its alternatives have been trying to do, although in the opposite direction of advancement, wellbeing, happiness, and so on. To ascertain the multiple sources of human failure may be a change of perspective with some prospective chance of usefulness. To focus on how to assess the extent of the multiple problems of a flawed present might be helpful in the search for remedies, and for paths towards a brighter future.

The present failure index covers a much wider spectrum of flaws and diseases of present-day societies than the previous Keynes' and Piketty's indices. For that aim, it counts on a very rich store of data covering hundreds, and perhaps thousands, of relevant social and economic indicators, at international institutions such as The World Bank, the World Health Organization (WHO), the International Labor Organization (ILO), IMF, UNDP, and others. Also, many universities and nongovernmental research organizations such as WIR assemble important data.

The selection of failure indicators must be based on these data, which means that even if they help to form an impressive fresco of the state of the world's economic and social failure, some parts of the picture may remain vague or silent, for lack of necessary information. This is the case, for instance, of the degree of monopoly in markets (the media *inter alia*), of the effects of internet over- or mal-use, of the macro rate of surplus-value (that is, consistent and accurate data on capital shares), and of the degree of work alienation.

The extensive failure index defines six dimensions of economic and social malaise: socio-economic dysfunction, ecological damage, exclusion, distress, militarism, and alienation. Each of these dimensions is composed of a number of indicators of particular flaws. The (re-indexed) average of the indicators makes the index of the dimension.[7] The (re-indexed) average of the indices for the six dimensions mentioned makes the extensive failure index.[8] Follows now a succinct description of dimensions and their corresponding indicators. Additional details on definitions and sources can be found in the Appendix.

Socio-economic dysfunction dimension

Our extensive list of "the outstanding faults of the economic society in which we live" includes the following components of socio-economic dysfunction.

I. *Income inequality* and II) *Wealth inequality*: The same as in Keynes' and Piketty's indices, *income* and *wealth inequality* indices are included as indicators of socio-economic dysfunction. (Source: WIR22).

III. *Direct taxation*: The share of direct taxation (taxes on income, profits, and capital gains) in total fiscal revenue reflects the *degree of redistributive ambition* on the income side of the public accounts (the failure indicator denotes the *lack of ambition*: 100 minus percent of direct taxation). (Source: World Bank).

IV. *Corruption* diminishes the quality of life and undermines the general economic, social, and political climate. The chosen indicator estimates the *control of corruption*; corruption is the consequence of the *lack of control*. (Source: World Bank/ Worldwide Governance Indicators, WGI).

V. *Financialization*: "When the capital development of a country becomes a by-product of a casino, the job is likely to be ill-done." (Keynes in the *General Theory*). Financialization, that is, overgrown financial markets, increases the risks of debt deflation and recession, and misdirect investment away from production. Rises in the price of shares and real estate resulting from financialization increase inequality. *Private debt, loans, and debt securities as a percent of GDP* reflect the degree of financialization. (Source: IMF).

VI. *Tax evasion*: Public revenue lost to *tax evasion*, in particular, evasion by transnational firms, reduces the capacities—in particular, redistributive capacities—of the public sector. The *degree of tax evasion is measured as a percent of tax revenue* (Source: Tax Justice Network).

VII. *Tax havens* have a deleterious effect on the international economy, fomenting capital flight, tax avoidance, and illicit financial flows. (Source: Tax Justice Network/Corporate Tax Haven Index).

VIII. *Offshore wealth*: Tax havens in VII. above are countries of destination of flight capital. Hidden capital or offshore wealth measures *capital hidden by rich individuals in tax havens* by country of origin as a percent of GDP. (Source: Alstadsæter *et al.* 2018).

IX. *External indebtedness*: The degree of external indebtedness indicates the degree of vulnerability of the economy. A high *external debt to GDP ratio* increases the probability of speculative attacks and payments crises and reduces the economic policy space or policy autonomy. (Source: IMF).

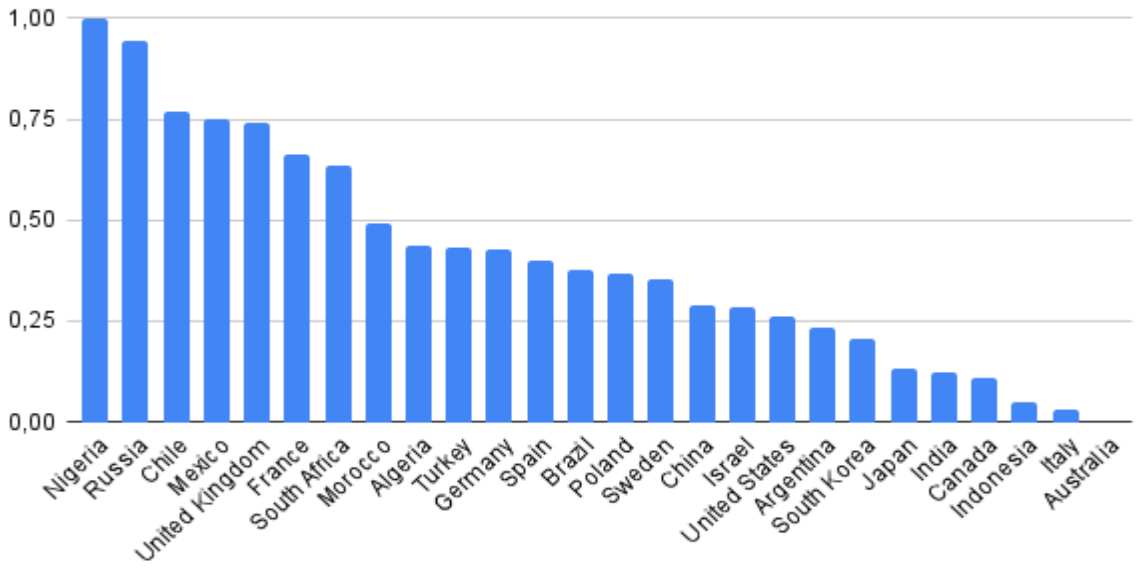
[7] See formulas (2) and (3) above (p. 36).

[8] Formally, extensive failure index I_i^e for country i is the simple average of the composite indices corresponding to the six named dimensions: $I_i^e = \sum_{p=1}^{6} \frac{I_{i,p}^{c\prime}}{6}$. I_i^e is re-indexed according to formula (3) above (p. 36).

X. *Extractivism*: Lack of diversification or dependency on the production and export of one or a few raw materials (oil, minerals, staples, etc.) denotes extractivism. It hinders economic development, increases the vulnerability of the economy, and may be ecologically detrimental. The Herfindahl-Hirschman index measures the *degree of product concentration in exports.* (Source: UNDP/HDR).

The figure shows the (re-indexed) average of the ten above-defined indices of socio-economic dysfunction for the 26 countries of the WIR22 sample. Different causes explain high socio-economic failure values for different countries. Nigeria has high values in tax evasion, corruption, and extractivism. Russia tops the lists on wealth held off-shore, non-direct taxation, and corruption. High wealth concentration, and financialization, are behind Chile's high socio-economic failure rating. Countries with the lowest dysfunction rankings have relatively low indices on those accounts.

Socioeconomic Dysfunction Index

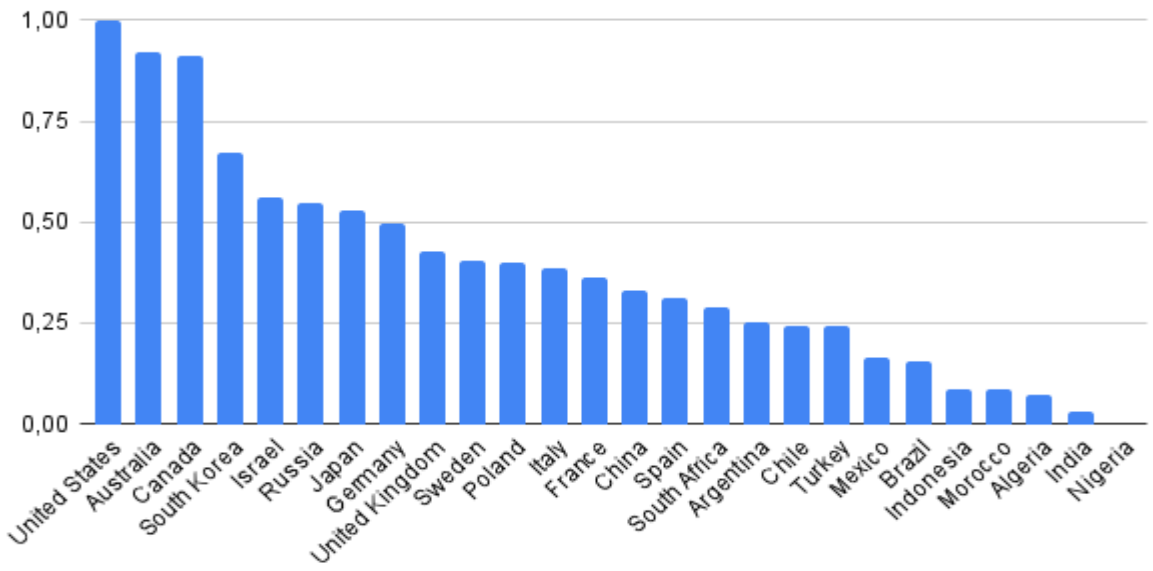


Ecological damage dimension

The ecological dimension of the extended failure index includes only one indicator. There are of course many other sources of ecological damage, but climate warming is by far the most dangerous and urgent.

I. *GHG per capita emissions*: That is, the annual greenhouse gas emissions of the average individual in the country. The *personal GHG footprint* reflects the country's average individual damage to the atmosphere. (Source: WIR22).

Ecological damage



The United States, Australia, and Canada are in a special category of very high (per capita) GHG emitters. The lowest emitters are low-income countries.

Exclusion dimension

The general notion of exclusion includes several types of obstacles to full participation in the economic, social, and political life of the community. This dimension comprises indicators of gender and racial discrimination, and of inequity in employment, education, and law enforcement.

I. *Gender inequality:* We adopt WIR22's approximation to the degree of gender disparity or discrimination as the *share of total labor income earned by women*. The female labor income share reflects the extent to which women are integrated into the wider economic and social life of the community. (Source: WIR22).

II. *Racial/ethnic discrimination I*: There is an inexcusable lack of international data on racial discrimination. Index Mundi, a private data collecting project, produces a Racial Discrimination Survey "whose purpose is to measure *how much racism exists in a given country as perceived by its residents.*" This is a subjective index, which we try to supplement with the following objective approximation to a discrimination indicator. (Source: Index Mundi).

III. *Racial/ethnic discrimination II:* Discriminated ethnic, racial, and other minorities occupy most often the lowest percentiles of the income distribution. The lower the share of total incomes perceived by say, the 10 or 20 percent of lowest income earners, the higher the probable level of discrimination and exclusion. We adopt the (inverse of the) *bottom 10 percent share as an objective proxy for the level of discrimination*. (Source: World Bank).

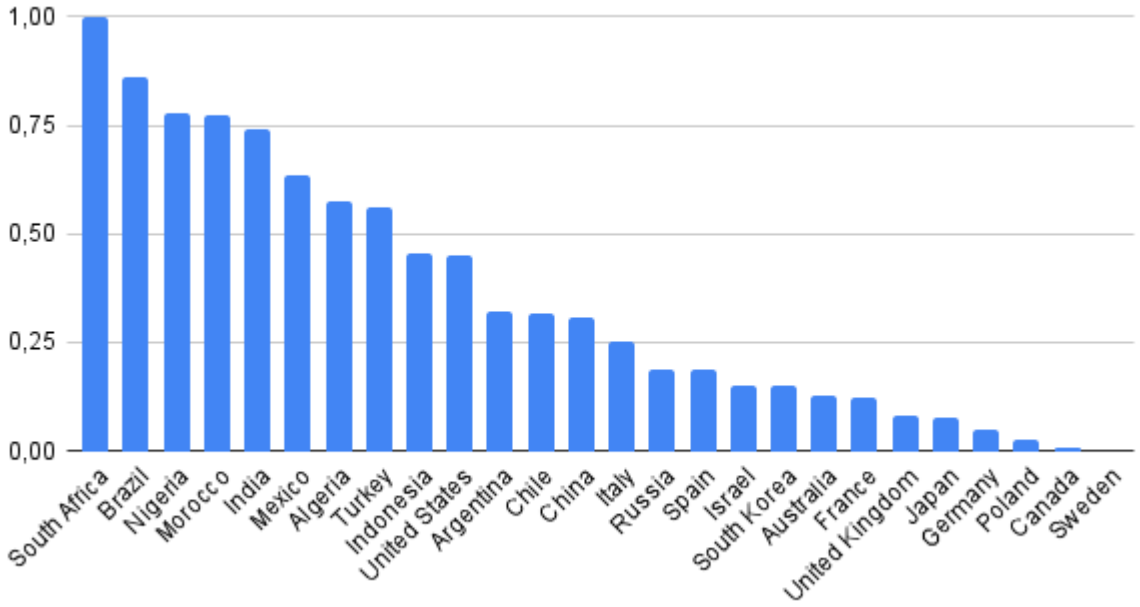
IV. *Vulnerable employment:* The share of employed people engaged as contributing family workers or own-account workers is an approximation to a measure of the size of the "*precariat*", that is, those with insecure employment, or unpredictable means of subsistence. (Source: UNDP/ ILO).

V. *Inequality in education*: High *inequality in the distribution of years of education* indicates discrimination of minorities and other excluded groups. (Source: UNDP/Human Development Report, HDR).

VI. *Insecurity I:* Exclusion and insecurity are interrelated. Misguided attempts to reduce insecurity through repression/reclusion increase exclusion without reducing insecurity. A high *prison population to total population ratio* denotes a high level of exclusion—and insecurity. (Source: UNDP/HDR).

VII. *Insecurity II*: The *number of victims of intentional homicide (per 100,000 people)* is one indicator of the Sustainable Development Goal 16. Goal 16 is to promote peaceful and inclusive societies for sustainable development. (Source: UN Office on Drugs and Crime).

Exclusion Index



High exclusion rankings for South Africa, Brazil, and Nigeria are explained by high rates of homicide. Morocco has high gender and education inequalities.

Distress dimension

Social and economic malaise directly affects communities' health outcomes and conditions. Health systems can contribute more or less effectively to better health outcomes.

I. *Drug addiction*: Substance use disorders are often the result of social and economic distress. The extent of the problem is gauged by the d*eath rates from mental health and substance use disorders*. (Source: ourworldindata.org).

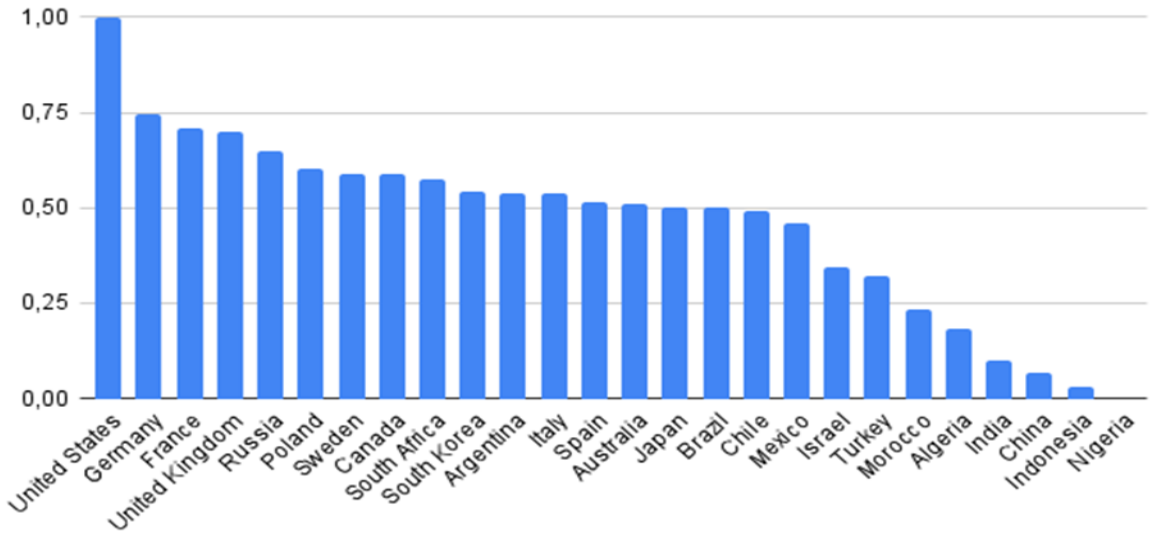
II. *Suicide*: Distressed societies are more prone to depression and suicide, and less capable of preventing them. This results in higher *suicide mortality rates*. (Source: World Bank/ WHO).

III. *Obesity:* Eating disorders also reflect social distress, and the difficulty, in both rich and poor countries, to counter the effects of (unhealthy eating) advertising on the *rate of deaths due to obesity*. (Source: ourworldindata.org).

IV. *Covid mortality: Covid mortality rates* reflects the priority given by authorities to public health, and the capacity of the economic and social system—in particular, the health system—of containing the epidemic. (Source: Johns Hopkins University).

V. *Health systems' soundness:* Health systems mirror societies' overall life approach and conditions. Health systems' costs (in terms of real expenditure per capita) produce differing results (in terms of life expectancy) according to priorities and structures, including distributional structures. An extreme example is Turkey in comparison with the US, both with about the same life expectancy (78 and 79 years respectively), and a ratio of 1 to 9 in terms of real per capita health costs. Health systems' costs may rise exponentially without visibly increasing life expectancy, due to the adoption of increasingly expensive (and often painful) life-prolonging technologies. The *ratio of real health expenditure per capita to life expectancy* is a plausible measure of health systems' soundness. (Source: World Bank).

Distress Index



The US has the highest rankings in obesity and health system unsoundness and a high covid death rate. Germany's position is mainly due to high drug abuse rates. A relatively high covid death rate is the most important factor in the case of France.

Militarism dimension

Let us introduce this dimension with the wise words of the venerable Adam Smith.

> The whole, or almost the whole public revenue, is in most countries employed in maintaining unproductive hands. Such are the people who compose … great fleets and armies, who in time of peace produce nothing, and in time of war acquire nothing which can compensate the expense of maintaining them, even while the war lasts. … Those unproductive hands, who should be maintained by a part only of the spare revenue of the people, may consume so great a share of their whole revenue … that all the frugality and good conduct of individuals may not be able to compensate the waste and degradation of produce occasioned by this violent and forced encroachment. *The Wealth of Nations*, Book II, Chapter III.

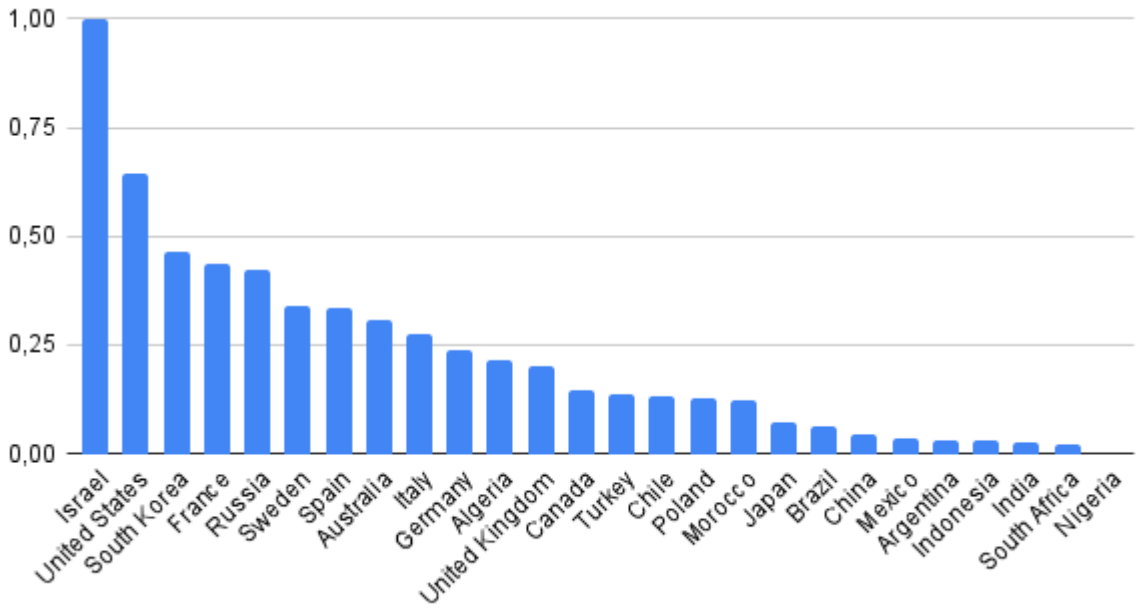
To the waste and degradation provoked by the direct costs of great fleets and armies mentioned by Adam Smith must be added many other deleterious consequences of the scourges of war and war preparation. The Militarism index is composed of the three following indices.

I. *Military personnel:* The *ratio of armed forces personnel to the total population* is one measure of the degree of militarization. (Source: World Bank/Stockholm International Peace Research Institute, SIPRI).

II. *Military expenditure: Per capita military expenditure* (in PPP-adjusted dollars) is another measure of the degree of militarization. (Source: World Bank/SIPRI).

III. *Arms exports*: *Per capita arms exports* reflect the contribution of exporting countries to the propagation of militarism and war. (Source: World Bank/SIPRI).

Militarism Index



Israel is first in the militarism score, with the highest military personnel, expenditure, and exports in per capita terms. The US has the same per capita expenditure, but lower (per capita) military personnel and arms exports. South Korea has relatively high indices on the three accounts. It is perhaps rather unexpected to see China in the militarism score between Mexico and Brazil—and Russia between Sweden and France.

We close this section with some more wise words from a most venerable voice. “[Militarism,] this plague-spot of civilization, ought to be abolished with all possible speed.” Albert Einstein, in *The World As I See It.*

Alienation dimension

The idea of alienation remits to the very ancient search for meaning. In Genesis, alienation begins with the original loss of innocence and the unity of consciousness, and the resulting separation from the

Other and from Nature. Other traditions and ontologies have other accounts of the origins and nature of this false consciousness. In our times, alienation refers to the traits of the social and economic system that reflect and confirm or deepen the original fracture. Exploitation and oppression are expressions of alienation; that is, they are instances of the apparition of the Other as an alien — a potential instrument and object.

I. *Human rights*: The establishment of a large set of fundamental human rights by the United Nations marks a formidable step in the direction of human disalienation. However, these rights are in many places not fully recognized and respected. The *rate of ratification of international human rights treaties* is a rather objective measure of a subject often used politically. Indicative of alienation is the rate of non-ratification. (Source: Office of the United Nations High Commissioner for Human Rights, OHCHR).

II. *Workers' rights*: The basic fundament of present-day alienation is the capitalist mode of production, based on the objectification of the worker and the fetishizing of commodities. A series of charts by the International Labor Organization mark some advancement in the recognition of the rights of workers. A relatively objective measure of workers' alienation and lack of recognition of their rights is the *rate of non-ratification of ILO's charts*. (Source: ILO).

III. *Collective bargaining*: Union membership should be the relevant measure of workers' organizing capabilities and relative power vis-à-vis capital. However, after several decades of setbacks, the international reality of workers' organizing is too fragmented and heterogeneous. The prevalence of collective bargaining is considered a better indicator of organizational strength. The *collective bargaining coverage rate* conveys the number of employees whose pay and/or conditions of employment are determined by collective agreements, in relation to the total number of employees. We are interested in the converse, i.e. the non-coverage rate. (Source: ILO).

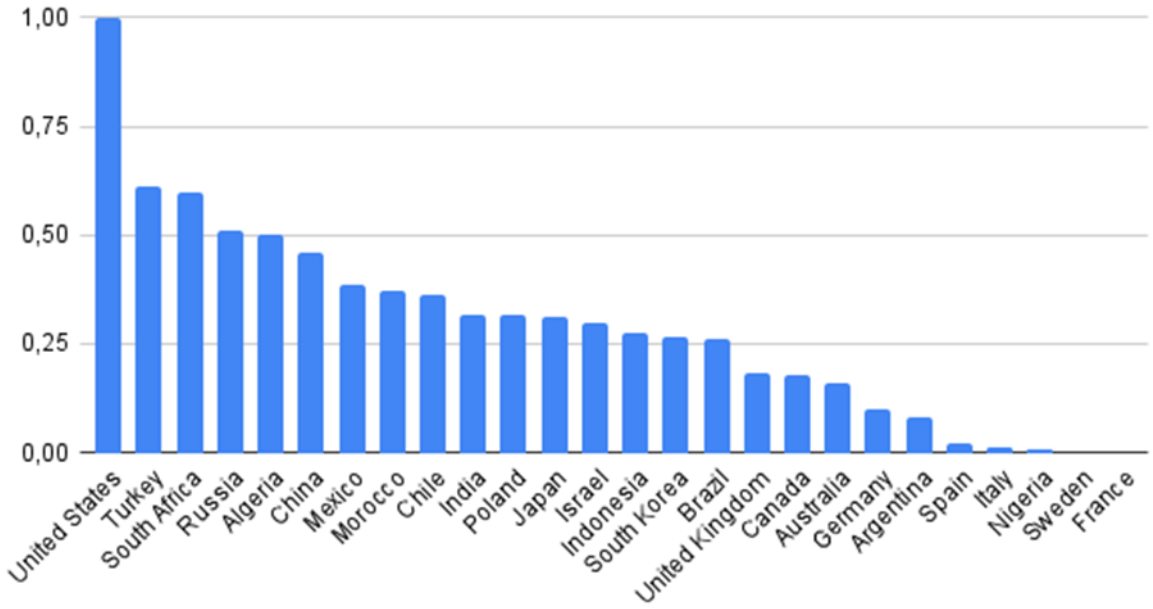
IV. *Unemployment:* A large "reserve army of labor" diminishes the relative power of workers, lowers their wages, and increases their alienation. An "unlimited supply of labor," as is almost the case in some countries, results in subsistence wages and the total subordination of the workforce. The rate of *(non-)participation in the labor force* in relation to the total population is a proxy of unemployment (and "disguised unemployment"). (Source: UNDP).

V. *Political voice and accountability*: Freedom of expression, freedom of association, and political freedoms are necessary for the free organization of working people, and thereby, of the progressive disalienation of workers — and, in fact, of the whole society. The World Bank produces an indicator based on "perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as *freedom of expression, freedom of association, and a free media*." (Kaufmann *et al.* 2010). Our indicator denotes the *lack of voice and accountability.* (Source: World Bank/WGI).

VI. *Plutocracy*: The former indicator is based on perceptions by several individuals and organizations, and as such, is prone to subjective biases of many kinds. We include therefore an objective proxy of the degree of political alienation. Formally or externally free and democratic societies may be governed in the interest of a rich minority, instead of the interest of the large majority. It can be said that the more of the *total wealth of a country is in the hands of the top one percent of capital owners,* the more is the country a plutocracy *de facto*. (Source: WIR22).

VII. *Propaganda*: The hegemony of an alienating system is maintained through a whole complex of structures and practices. Of a particular impact on the socio-economic sphere is the promotion of commodity fetishism by the management of preferences and the engineering of desire through advertisement and other methods of marketing. A business intelligence firm's estimations of *total media ad spending per capita* for a number of countries allow for an approximation to the problem. (Source: eMarketer).

Alienation Index

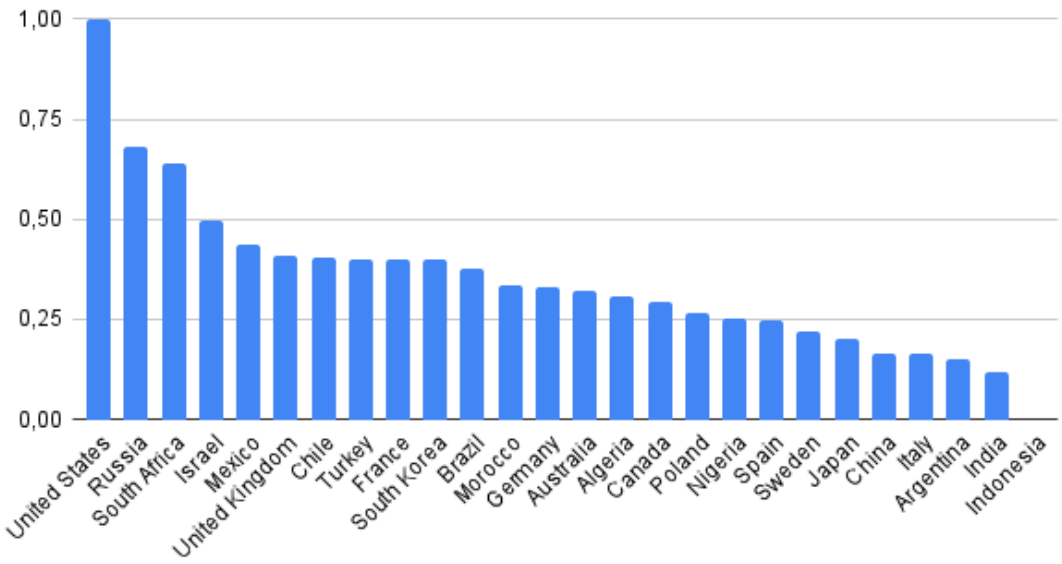


The US stands out for maximal non-ratification of human rights and labor conventions, and the highest total ad expenditure per capita. Collective bargaining is also almost non-existent in the US. Turkey's low performance in human rights, collective bargaining, and political freedoms explain its high alienation index. South Africa suffers from extreme wealth inequality (plutocracy), and low labor force negotiating power (low collective bargaining).

Results for the extensive failure index

The extensive failure index synthesizes the results for the six different proposed failure dimensions. The extensive index is the (re-indexed) average of the indices for socio-economic dysfunction, ecological damage, exclusion, distress, militarism, and alienation. The figure shows the results.

Extensive failure Index



Except for the socio-economic dysfunction dimension, the US shows high failure values in all dimensions; it attains the maximal value in ecological damage, distress, and alienation. Russia ranks high in socio-economic dysfunction and relatively high in social distress and ecological damage. An almost minimal level of militarism does not help South Africa in notably lowering its failure level, due to high rankings in exclusion and socio-economic dysfunction. Militarism is the main cause of Israel's failure ranking.

Final comments

In recent decades GDP growth has been the argument to justify policies that aggravated unemployment and the inequality of wealth and incomes, and increased environmental harm. GDP growth, of course, is blind to the fact that there is mass unemployment, that real wages decline or stagnate; or to the fact that atmospheric pollution by greenhouse gases approaches catastrophic levels. GDP is also blind to many other flaws of unregulated capitalism — the economic society in which we live.

Our study evaluated the extent of these flaws for a representative sample of countries. Keynes pointed to the failure to provide for full employment, and the inequitable distribution of wealth and incomes as "the outstanding faults of the economic society in which we live." A first composite "Keynes index" combines indices for the three Keynes faults — unemployment, and wealth and income inequality. The second Keynes index is an "eco-Keynesian index," composed of the previous Keynes index, and an ecological footprint index (per capita greenhouse gas (GHG) emissions).

The World Inequality Report 2022 allows for further empirical assessment of the flaws of present-day capitalism. WIR22 provides up-to-date data for the Keynes' indices, and for a "Piketty index" — Thomas Piketty is one of the coordinators of the study. "Piketty1" combines the indices of inequality of income, wealth and gender, and per capita GHG emissions. "Piketty2" adds the WIR22 transparency index, which somewhat qualifies the results.

The third type of index, the extensive failure index, tries to enlarge the picture, including a wider view of the flaws of unregulated capitalism. It synthesizes six dimensions: socio-economic dysfunction, ecological damage, exclusion, distress, militarism, and alienation. Each of these dimensions is composed of several indicators of particular flaws.

The results are interesting, and sometimes counter established perceptions. Several mental images of the hierarchy of fortune and misery, success and failure, are shaken. Failure indices may become a mirror in which societies can discover their less laudable traits, and hopefully inspire action to counter them. Societies may also find solace, unexpectedly finding their place amongst the least troubled on some accounts. They may try to deepen progress on those and other concerns.

A final comment, on failure indices and *degrowth*. A failure synthetic indicator may be the inclusive notion that could give a new, more widely appealing meaning to the idea of *degrowth*. *Degrowth* should then be the decrease of failure levels, not the decrease of any undefined kind of GDP output. The idea is that increases in some GDP components — and decreases in some others — should contribute to a diminution of maldevelopment.

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Appendix: Sources

Most recent data for all indices. In a few cases of lack of data for a particular variable in a particular country, the country's composite index average includes only variables with existing data.

Keynes1 index

1) *Unemployment*: (100 minus) percentage of the population ages 15 years and older that is employed. http://hdr.undp.org/en/indicators/148306. Data for the year 2019. Accessed 20/12/21.
2) *Income inequality*: Income inequality levels refer to income measured before income taxes and after operations related to pension and unemployment insurance systems. https://wir2022.wid.world/www-site/uploads/2021/12/CountrySheets. Accessed 20/12/21.
3) *Wealth inequality*: Top 10 to bottom 50 percent ratio of the shares of total net household wealth owned by the respective group. Net household wealth is equal to the sum of financial assets (e.g. equity or bonds) and non-financial assets (e.g. housing or land) owned by individuals, net of their debts. Total household wealth adds up to the total wealth of the non-profit sector (e.g. foundations, universities) and total public wealth (the wealth owned by the government) to make total national wealth. Because of very high inequality values of a few outliers (South Africa, Chile, Brazil, and Mexico) in comparison with the rest, natural logarithms of inequality ratios are taken. In a few cases

of slightly negative wealth shares (i.e., net debt) for the bottom 50 percent, the value of 1 is adopted to avoid (meaningless) negative ratios.
https://wir2022.wid.world/www-site/uploads/2021/12/CountrySheets. Accessed 20/12/21.

Keynes2 index
Keynes2 = (Keynes1 + GHG emissions per capita.) ÷ 2.
GHG emissions per capita: Personal GHG footprint refers to the annual greenhouse gas emissions of the average individual. Footprints take into account all emissions, those stemming from direct energy use (e.g. fuel burnt by a car) as well as indirect energy use (CO2 emitted to produce the goods and services to sustain a lifestyle). Estimates also take into account imports and exports of carbon embedded in goods and services imported or exported to other countries. https://wir2022.wid.world/www-site/uploads/2021/12/CountrySheets. Accessed 20/12/21.

Piketty1 index
Excluding unemployment, Piketty1 contains in addition to the former indices a *gender inequality index*. The *female labor income share* refers to the share of total labor income earned by women. If earnings were distributed equally between males and females then the indicator would be 50 percent. https://wir2022.wid.world/www-site/uploads/2021/12/CountrySheets. Accessed 20/12/21.

Piketty2 index
Piketty2 includes an additional variable: *Inequality data transparency*, produced by the World Inequality Lab in partnership with the United Nations Development Program. It measures the level of availability and quality of economic inequality data. https://wir2022.wid.world/www-site/uploads/2021/12/CountrySheets. Accessed 20/12/21.

Extensive failure index
Comprises six dimensions containing several indices each.

I. *Socio-economic dysfunction*
   1) *Income inequality*: https://wir2022.wid.world/www-site/uploads/2021/12/CountrySheets. Accessed 20/12/21.
   2) *Wealth inequality*: https://wir2022.wid.world/www-site/uploads/2021/12/CountrySheets. Accessed 20/12/21.
   3) *Non-direct taxation*: 100 minus percent of direct taxation (taxes on income, profits and capital gains) in relation to total fiscal revenue. https://data.worldbank.org/indicator/GC.TAX.TOTL.GD.ZS?view=chart; and https://data.worldbank.org/indicator/GC.TAX.YPKG.ZS?view=chart.
   4) *Corruption:* Estimated as *100 minus Control of corruption rate*. http://info.worldbank.org/governance/wgi/Home/Reports 2020. Accessed 18/1/22.
   5) *Financialization*: Private debt, loans and debt securities as percent of GDP. https://data.imf.org. Data for year 2020. Accessed 15/1/22.
   6) *Tax evasion*: Public revenue lost to *tax evasion*. https://taxjustice.net/country-profiles. Data for 2021. Accessed 18/1/22.
   7) *Tax havens: https://taxjustice.net/country-profiles.* Data for 2021. Accessed 18/1/22.
   8) *Offshore wealth*: Alstadsæter *et al.* (2018). (Data for 2017.)
   9) *External indebtedness*: International liabilities to GDP ratio. https://data.imf.org/regular.aspx?key=62805745 ÷

https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=chart. Data for 2020. Accessed 18/1/22.

10) *Extractivism*: Herfindahl-Hirschman degree of product concentration in exports. http://hdr.undp.org/en/indicators/170006. Data for 2018. Accessed 18/1/22.

II. *Ecological damage*

GHG per capita emissions.
https://wir2022.wid.world/www-site/uploads/2021/12/CountrySheets. Accessed 20/12/21.

III. *Exclusion*

1) *Gender inequality:* https://wir2022.wid.world/www-site/uploads/2021/12/CountrySheets. Accessed 20/12/21.
2) *Racial/ethnic discrimination I*: https://www.indexmundi.com/surveys/results/8. Accessed 20/12/21.
3) *Racial/ethnic discrimination II:* The (inverse of the) income share held by lowest 10 percent. https://data.worldbank.org/indicator/SI.DST.FRST.10?view=chart. Most recent value. Accessed 20/12/22.
4) *Vulnerable employment:* https://hdr.undp.org/en/indicators/43006. Year 2019. Accessed 20/12/21.
5) *Inequality in education:* http://hdr.undp.org/en/indicators/101606. Year 2019. Accessed 20/12/21.
6) *Insecurity I:* Prison population to total population ratio. http://hdr.undp.org/en/indicators/128306. Years 2013-2018. Accessed 20/12/21.
7) *Insecurity II*: Victims of intentional homicides (per 100,000 people). Year 2018. Accessed 15/2/2. https://dataunodc.un.org/content/homicide-rate-option-2.

IV. *Distress*

1) *Drug addiction*: https://ourworldindata.org/grapher/death-rates-from-mental-health-and-substance-use-disorders. Year 2017. Accessed 20/1/22.
2) *Suicide*: https://data.worldbank.org/indicator/SH.STA.SUIC.P5?view=chart. Accessed 20/1/22. Year 2019.
3) *Obesity:* https://ourworldindata.org/obesity. Year 2017. Accessed 20/1/22.
4) *Covid mortality:* https://coronavirus.jhu.edu/data/mortality. Accessed 20/1/22.
5) *Health system's soundness:* Real health expenditure to life expectancy ratio.

   Current health expenditure, PPP $ (purchasing power parity USD): https://data.worldbank.org/indicator/SH.XPD.CHEX.PP.CD?view=chart ÷

   Life expectancy at birth: https://data.worldbank.org/indicator/SP.DYN.LE00.IN?view=chart. Most recent data. Accessed 20/1/22.

V. *Militarism*

1) *Military personnel:* Armed forces personnel to population ratio.

   Military personnel: https://data.worldbank.org/indicator/MS.MIL.TOTL.P1?view=chart ÷

Population: https://data.worldbank.org/indicator/SP.POP.TOTL. Most recent value. Accessed 20/1/22.

2) *Per capita military expenditure (in Purchasing Power Parity USD):* https://data.worldbank.org/indicator/MS.MIL.XPND.CD?view=chart (Military expenditure in current USD) × Price level ratio of PPP conversion factor to the market exchange rate: https://data.worldbank.org/indicator/PA.NUS.PPPC.RF ÷ Total population: https://data.worldbank.org/indicator/SP.POP.TOTL. Most recent value. Accessed 20/1/22.

3) *Per capita arms exports*: https://data.worldbank.org/indicator/MS.MIL.XPRT.KD?view=chart ÷ https://data.worldbank.org/indicator/SP.POP.TOTL. Most recent value. Accessed 20/1/22.

VI. *Alienation*

1) *Human rights*: Rate of non-ratification of international human rights treaties. https://indicators.ohchr.org/. Accessed 25/1/22.

2) *Workers' rights:* Rate of non-ratification of ILO's charts. https://www.ilo.org/dyn/normlex/en/f?p=1000:10011:34831575285806::::P10011_DISPLAY_BY:1. Accessed 25/1/22.

3) *Collective bargaining:* Collective bargaining non-coverage rate. https://ilostat.ilo.org/data/?. Accessed 25/1/22.

4) *Unemployment:* Rate of non-participation in the labor force in relation to the total population. http://hdr.undp.org/en/indicators/148306. Most recent value. Accessed 20/1/22.

5) *Political voice and accountability*: Inverse of the Political voice and accountability index, Worldwide Governance Indicators (WGI) project. http://info.worldbank.org/governance/wgi/. Accessed 18/1/22.

6) *Plutocracy*: Share of total wealth held by the top one percent of owners. https://wir2022.wid.world/www-site/uploads/2021/12/CountrySheets. Accessed 20/12/21.

7) *Propaganda*: Total media ad real spending per capita (in PPP adjusted USD). https://trends.e-strategyblog.com/2014/07/24/global-ad-spending-per-person-by-country-2012-2018/20371/ × Price level ratio of PPP conversion factor to the market exchange rate: https://data.worldbank.org/indicator/PA.NUS.PPPC.RF. Most recent values. Accessed 18/1/22. Original data source: eMarketer.com.

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