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Article

What do global metrics tell us about the world?

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Abstract: There are now a wide variety of global metrics. To find the degree of overlap between these different measures, we employ a principal components analysis (PCA) to 15 indices across 145 countries. Our results demonstrate that the most important underlying dimension highlights that economic development and social progress go hand in hand with state stability. The results are used to produce categorical divisions of the world. The threefold division identifies a world composed of what we describe and map as Rich, Poor and Middle countries. A five-group classification provided a more nuanced categorization described as; The Very Rich, Free and Stable, Affluent and Free, Upper Middle, Lower Middle, and Poor and Not Free.

Keywords: global indices, global metrics, global society, new global geographies, principal components analysis.

1. Introduction

In 2018 a new Internet site was introduced: PreventEpidemics.org. It was heralded as the world's first website to provide a score for each country that measured their ability to find, stop and prevent disease. This new measure of epidemic preparedness is only the most recent in an increasing number of global metrics that have expanded to include a range of phenomena including not just health [1] but also land cover [2], market performance [3], sustainable development [4,5] and global warming [6].

A convincing argument can be made that our understanding of globalization is constituted and informed by the discursive development of global indices. Understanding the nature of these metrics as well as their possible overlap and divergence is an important task. In this paper we will examine a range of indices currently in everyday use. We will analyze them to see the nature of the underlying connections and identify countries of similar characteristics.

2. Global Metrics

In the past few decades a variety of global indices have been developed that range from measuring happiness [7,8] to estimating corruption [9]. One survey identifies 178 global indices that range from an ageing vulnerability index to a free press ranking [10].

Major international organizations provide some of the most widely used indices. The International Monetary Fund (IMF), United Nations (UN), World Bank and many other organizations such as the World Health Organization (WHO) provide global indices based on national data collections. The UN Human Development Index (HDI), for example, measures a country's achievements in terms of life expectancy, educational attainment and adjusted real income. High

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human development countries include Norway, Australia, Canada, Sweden, Belgium and the US while some of the lowest are Burundi, Niger and Sierra Leone. The Gender Inequality Index created by the UN measures progress along the dimensions of reproductive health, empowerment and economic status. The Civil Society Index, for example, plots the position of each country in relation to four dimensions; civil society, structure, environment, values and impact. The Freedom Index provides a measure of political rights and civil liberties.

There are at least three problems in using the indices. First, there is the differential quality of data collected by national authorities. Many poor countries lack the technical staff to adequately measure and prepare the required data. Richer countries can devote more resources to provide good quality, accurate and timely data.

Second, even when accurate and timely, the indices treat nation states as single units, with one measure covering the entire territory. This is an unrealistic assumption especially for larger countries and for states that are not perfectly homogenous. And few are. National scale data is a spatial fiction covering a range of experiences within countries especially between the rural and urban areas.

An important spatial unit that matches more closely with the realities of local lives is cities. A major problem is that there are few sources of good quality comparable urban data. Even such seemingly simple measures such as city population are very difficult to generate. One flawed exception is the Global Urban Indicators produced by the United Nations Human Settlement Program. The program identified 30 urban indicators and 9 qualitative data to be used in comparing cities across the world. The program provides a patchy coverage of these data sets for cities. So far, the program is more of a promise of possible data rather than a delivery of global urban data.

To illustrate the problems of using national data let us consider some measures of globalization. The Swiss Economic Institute, KOR, publishes a globalization index of countries [11]. In 2018 the top scoring countries were Belgium, Netherlands, Switzerland and Sweden. The Globalization and World Cities (GaWC) survey, in contrast, ranks cities by their degree of global connectivity [12]. If we compare the rank of the top countries in the KOR index with the rank of their major city in the GaWC index; then substantial differences can be noted. While Belgium was ranked first by the KOR Globalization Index, the city of Brussels was ranked only 27th, Amsterdam was 26th, Zurich 34th and Stockholm 38th. Small, rich homogenous countries tend to score higher on globalization measures than their respective cities score on global city connectivity. The differences between the two measures highlight the more general point of the importance of the spatial scale of analysis and the fact that different spatial resolutions produce different results.

Third, especially for composite indices, the index is only as robust as the inputted data.

3. The Data Set

There is now a rich array of comparative indices that allow us to compare, contrast and rate countries. They give a sense of how countries in the global community rank against each other.

But the plethora of indices raises questions. To what extent are the indices measuring the same underlying feature? Which indices are most effective in identifying differences? What is the degree of overlap between the different indices and what are the points of departure?

In a provisional attempt to answer these questions we collected data on 15 indices for 145 countries (Table 1). The indices are commonly used, freely available and often cited in established

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newspapers and journals. In other words, they constitute a relatively well used, and respected set of indices.

Table 1: Description of Indices

Economic Freedom: Heritage Foundation measures economic freedom based on 10 quantitative and qualitative factors, grouped into four broad categories, or pillars, of economic freedom: Rule of Law (property rights, freedom from corruption); Limited Government (fiscal freedom, government spending); Regulatory Efficiency (business freedom, labor freedom, monetary freedom); and Open Markets (trade freedom, investment freedom, financial freedom). Each of the ten economic freedoms within these categories is graded on a scale of 0 to 100. A country's overall score is derived by averaging these ten economic freedoms, with equal weight being given to each. ***More free=higher value.***
Corruption Perception Index: Transparency International's index ranks countries and territories based on how corrupt their public sector is perceived to be. It is a composite index – a combination of polls – drawing on corruption-related data collected by a variety of reputable institutions. The index reflects the views of observers from around the world, including experts living and working in the countries and territories evaluated. ***Less corrupt=higher value.***
Human Development Index (HDI): The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions. ***More developed=Higher value. *We scaled the index by multiplying by 100 to match 0-100 range of other indices.***
Democracy Index: The Democracy Index is an index compiled by the Economist Intelligence Unit that measures the state of democracy in 167 countries, of which 166 are sovereign states and 165 are United Nations member states. The index is based on 60 indicators grouped in five different categories measuring pluralism, civil liberties, and political culture. In addition to a numeric score and a ranking, the index categorizes countries as one of four regime types full democracies, flawed democracies, hybrid regimes and authoritarian regimes. ***More democracy=higher value. *Scaled by multiplying by 10 to match 0-100 range of other indices.***
Freedom Index: In the original index, countries are given a total press freedom score from 0 (best) to 100 (worst) on the basis of a set of 23 methodology questions divided into three subcategories, and are also given a category designation of "Free," "Partly Free," or "Not Free." ***In order to standardize our indices, the Freedom Index was reconfigured to reverse the significance of the resulting values. By subtracting original values from an arbitrary number equal to or greater than 100, we created a new freedom score that ranges from 0 (worst) to 100 (best).***
Country Risk: The Fund for Peace's Fragile State Index (FSI) is compiled by collecting thousands of reports and information from around the world, detailing the existing social, economic and political pressures faced by each of the 178 countries that we analyze. The FSI is based on The Fund for Peace's proprietary Conflict Assessment System Tool (CAST) analytical platform. Based on comprehensive social science methodology, data from three primary sources is triangulated and subjected to critical review to obtain final scores for the FSI. In the original index, *More fragile=higher value.* ***In order to standardize our indices, the index was reconfigured to reverse the significance of the resulting values. By subtracting original values from an arbitrary number equal to or greater than 100, we created a new freedom score that ranges from 0 (worst) to 100 (best). *We then scaled the resulting index by multiplying by .75 to match 0-100 range of other indices.***
Gender Inequality (UN): Index for measurement of gender disparity that was introduced in the 2010 Human Development Report 20th anniversary edition by the United Nations Development Programme (UNDP). According to the UNDP, this index is a composite measure which captures the loss of achievement within a country due to gender

inequality. It uses three dimensions to do so: reproductive health, empowerment, and labor market participation. *More unequal=higher value.* ***In order to standardize our indices, the Gender Inequality was reconfigured to reverse the significance of the resulting values. By subtracting original values from an arbitrary number equal to or greater than 1, we were effectively able to create a new index that ranges from 0 (perfect inequality) to 1 (perfect equality). *This standardization assumes that inequality is a negative/detrimental component and is reversed to ensure that higher values align with expected outcome of advanced countries. **Scaled by multiplying by 100 to match 0-100 range of other indices.***

Quality of Life: Social Watch's Basic Capabilities Index (BCI) looks at basic social indicators such as health and education. BCI values for 2011 were computed for 167 countries where data are available out of the 193 member states of the United Nations. ***Better quality of life=higher value.***

Country Indicators for Foreign Policy Risk (CIFP): The data set provides at-a-glance global overviews, issue-based perspectives and country performance measures. Currently, the data set includes measures of domestic armed conflict, governance and political instability, militarization, religious and ethnic diversity, demographic stress, economic performance, human development, environmental stress, and international linkages. *More risk=higher value.* ***In order to standardize our indices, this index was reconfigured to reverse the significance of the resulting values. By subtracting original values from 10, we created a new index whereby a lower figure represents more risk and vice versa. **Scaled by multiplying by 10 to match 0-100 range of other indices.***

Digital Access: International Telecommunications Union Digital Access Index measures the overall ability of individuals in a country to access and use new Information and Communications Technologies (ICTs). The DAI is built around four fundamental vectors that impact a country's ability to access ICTs: infrastructure, affordability, knowledge and quality and actual usage of ICTs. The DAI has been calculated for 181 economies where European countries were among the highest ranked. The DAI allows countries to see how they compare to peers and their relative strengths and weaknesses. The DAI also provides a transparent and globally measurable way of tracking progress towards improving access to ICTs. *Greater access=higher value.* ***Scaled by multiplying by 100 to match 0-100 range of other indices.***

State Fragility: Systemic Peace's Index composed of eight component indicators for the most recent year available for 167 countries with populations greater than 500,000 in 2013 (no data for newly independent South Sudan). *More fragile=higher value.* ***In order to standardize our indices, this index was reconfigured to reverse the significance of the resulting values. By subtracting original values from 100, we created a new index whereas a lower figure represents more fragility.***

Freedom of the Press: Reporters without Borders' index measures the level of freedom of information in 180 countries. It reflects the degree of freedom that journalists, news organizations and netizens enjoy in each country, and the efforts made by the authorities to respect and ensure respect for this freedom. *Less freedom=higher value.* ***In order to standardize our indices, this index was reconfigured to reverse the significance of the resulting values. By subtracting original values from 100, we created a new index whereas a lower figure represents less freedom.***

Satisfied with Life Index: The subjective well-being index represents the overall satisfaction level as one number. The index based on data from UNESCO, the CIA, the New Economics Foundation, the WHO, the Veenhoven Database, the Latinbarometer, the Afrobarometer, and the UNHDR. These sources are analyzed to create a value for subjective well-being: the first world map of happiness. Whilst collecting data on subjective well-being is not an exact science, the measures used are very reliable in predicting health and welfare outcomes. ***More satisfied=higher value. *Scaled by multiplying by .33 to match 0-100 range of other indices.***

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Human Rights Index: The Cingranell-Richards (CIRI) Human Rights Dataset contains standards-based quantitative information on government respect for 15 internationally recognized human rights for 202 countries, annually from 1981-2011. It is designed for use by scholars and students who seek to test theories about the causes and consequences of human rights violations, as well as policy makers and analysts who seek to estimate the human rights effects of a wide variety of institutional changes and public policies including democratization, economic aid, military aid, structural adjustment, and humanitarian intervention. The composite index presented is an average of the 20 measures created by CIRI. ***Fewer human rights abuses=higher value. *Scaled by multiplying by 100, then multiplied by .33 to match 0-100 range of other indices.***
Social Progress: The Social Progress Index, first released in 2014 building on a beta version previewed in 2013, measures a comprehensive array of components of social and environmental performance and aggregates them into an overall framework. The Index was developed based on extensive discussions with stakeholders around the world about what has been missed when policymakers focus on GDP to the exclusion of social performance. ***Better social and environment progress=higher value.***
*Where noted, some indices were "standardized" in order to allow significance of high values to move in a similar direction across indices. For example, the original "Freedom Index" equates higher values with less freedom, while higher values in the "Democracy Index" indicate more democracy. Adjustments were made to ensure that higher values represented positive outcomes.
**Explanation of how proxies were found when indices provided unknown values or insufficient data: Proxy figures were calculated by adding 70% of the average of adjacent countries' values to 30% of the average of the remaining countries' values in the associated World Bank region. If adjacent values were unavailable, a regional average was used. We concur that for some indices, such as biodiversity where similar plant and animal life can be found in adjacent countries, it is feasible that such proxy calculations may not provide the best reflection of a country's true circumstances, given the vast differences across political borders. For example, there is little reason to expect that an index for press freedom in a country with a state-controlled press, such as can be found in Venezuela, can be approximated based on its relatively free surrounding neighbors. Another example can be found frequently in Afghanistan, where its continued war has imposed greater hardships, less infrastructure, a less stable government, and lower satisfaction than any of even its close neighbors who were not in a state of war at the time of index construction. No data at all was available for some countries such as Libya and Somalia.

To be sure, many more indices are available but we see this study as just the beginning; a preliminary analysis of a relatively small but manageable data set. Because the indices selected influence the results, we have drawn a representative sample of indices across a range of global themes such as development, human rights and press freedoms.

Indices often vary in their coverage, so we have estimated missing values as explained in Table 1. Different indices use different scales that make statistical analysis difficult. We standardized the indices to the same scale of 0 to 100. The nature of the standardization is discussed for each index in Table 1.

4. The Analysis

In this paper we seek to answer some basic questions. What is the degree of overlap between different measures and what does their combined use tell us about the world? To answer these questions, we

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employed a statistical technique known as principal component analysis (PCA) that allows us to identify underlying dimensions from the original data [13]. A PCA allows us to identify:

- Underlying dimensions (components),
- What each index contributes to the underlying component (component loadings),
- National scores on these components (component scores).

Table 2 shows that the components explained the total variance of the original data. Notice that the first component explains 68 percent of the total variance. The two subsequent components explain less variance, but three components cumulatively explain just over 86 percent of the total variance. What are these components?

Table 2: Cumulative Variance Explained by Components

Component	Cumulative variance explained
1	68.0
2	79.4
3	86.2

We can identify their characteristics by looking at how each of the original indices scores on the new components (Table 3). These values, known as component loadings, allow us to identify the nature of the underlying components through their statistical relationship with the original data.

Table 3: Component Loadings

Index	Component 1	Component 2	Component 3
Economic Freedom	0.0139	-0.0015	0.9719
Corruption	0.2730	0.0836	0.0201
HDI	0.2800	-0.3037	-0.0051
Democracy Index	0.2681	0.2203	-0.0144
Freedom Index	0.2506	0.3898	0.0229
Country Risk	0.3010	-0.0112	0.0026
Gender Inequality	0.2754	-0.2356	0.0762
Quality of Life	0.2479	-0.3866	-0.0645
CIFP Risk	0.3013	-0.0648	0.0281
Digital Access	0.2863	-0.2034	0.0297
State Fragility	0.2892	-0.1198	-0.0184
Freedom of Press	0.2084	0.4951	0.0515
Satisfied Life Index	0.2093	0.0663	-0.1924
Human Rights	0.2270	0.4190	-0.0484
Social Progress	0.2986	-0.1012	0.0122

4.1. Component 1: Rich, Progressive and Stable/ Poor, Regressive and Unstable

We have entitled the first component *Rich, Progressive and Stable Versus Poor, Regressive and Unstable*. It explains more than two thirds of the total variance and is associated positively with each of the indices, bar one. As is shown in Table 3, all of the indices, apart from Economic Freedom, score equally highly and positively. This component reaffirms and highlights the connection between

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social progress and political stability. It is a powerful component that is the fundamental statistical backbone of explanatory variance in our data set. It suggests that economic development and social progress go hand in hand with state stability.

This statistical finding reaffirms other work that shows how democratic institutions and rule of law promotes economic growth [14]. Acemoglu and colleagues [15], for example, show that democracies increase economic growth. They suggest democratization increases GDP per capita by about 20 percent in the long run. Democracy increases growth through greater investment in social welfare and education, the encouragement of investment and economic reforms and the reduction of social conflict. Democracy, social stability and economic growth go hand in hand.

To a large extent then all the indices, except one, are essentially measuring countries along this one dimension. All the indices have similar sized and positively signed component loadings. Even such specific and distinctive indices as gender inequality, digital access, and life satisfaction are measuring different facets of this one dimension. Many of the different indices would thus seem to be measuring the same underlying reality of political stability, social progress and economic development.

It is always useful to look at the component scores: how each country scores on the component. Table 4 lists the countries that scored highest and lowest on this component. No real surprise; and that is comforting. The component would seem to be measuring something real and tangible and is not just a statistical artifact without connection to our understanding of the world. The top scorers are some of the most stable and richest counties in the world while the lowest scores are some of the poorest and least stable.

Table 4: Top Five Positive and Negative Component Scores for Component 1

Country	Component Score
Denmark	6.29
Sweden	6.22
Norway	6.09
Switzerland	5.99
Netherlands	5.97
Yemen	-5.14
Dem. Rep. Congo	-5.31
Sudan	-5.48
Central African Rep.	-5.59
Chad	-5.60

Component 1 has a connection with the reality of the world and not just a statistical construction from this data set. The component picks up most of the variance in the original data and is powerfully suggestive of the inter-linkages between political stability, social progress and economic growth.

4.2. Component 2: Let Freedom Ring

Component 2 as shown in Table 3, is positively associated with the Democracy Index, Freedom Index, Freedom of Press and Human Rights. The component is useful for identifying the

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more regressive regimes. Table 5 lists the top five negative scores. Again, no surprise, which is comforting in that this component seems to be measuring something real in the external world. The component only explains 11.4 percent of total variance, much less than component 1 but still significant in that it identifies a world divided up into countries with very different freedoms.

Table 5: Top Five Negative Component Scores for Component 2

Country	Component Score
China	-3.74
Turkmenistan	-3.71
Iran	-3.51
Belarus	-3.21
Syria	-3.19

4.3. Component 3: Neoliberalism

Component 3 is associated with one index - Economic Freedom produced by the Heritage Foundation - a group committed to a neoliberal agenda of open markets and limited government. It measures market 'freedoms' associated most closely with a neoliberal agenda. This component has no other strong statistical connections with other indices, which is suggestive of a more insular and singular index. It measures countries along a yardstick of neoliberalism.

5. A Tripartite Global Geography

There is a long tradition of classifying countries in a global geography. The geographical terms used to describe the world are constantly changing. During early years of the Cold War the world was divided into the *First World* of capitalist economies, a *Second World* of communist societies, and a large swathe of countries in South America and Asia that were either neutral or non-aligned and described as *Third World***.** Industrialization in selected countries such as Japan and South Korea and more recently India and China, created a specific category of *Newly Industrializing Countries* with the membership changing as economies such as Japan and South Korea matured into First World designation.

Three other terms also emerged, *developed*, *developing* and *underdeveloped*. The term *developing* suggested a path to progress while the term *underdeveloped* implied a more end state of a permanent poverty. Scholars pointed out that underdevelopment was created in the process of some economies being developed [16,17]. It was not the case that developing countries were slower in catching up to the developed but that the wealth of the developed countries was based on the underdevelopment of the so-called developing countries. From this perspective underdevelopment was not due to lack of progress but to an unfair distribution of the fruits of progress and the transfer of resources from colonies to imperial centers.

The terms *developed* and *developing* are now replaced in academic literature by the new division into *global North* and *global South*. The term *global South* is used to refer to a line roughly 30 degrees North latitude that divides much of the world into richer and poorer countries. The term is widely used despite the problems with lumping together Australia, New Zealand and many South American countries with some very poor countries.

We can use the previous analysis to advance this debate. Having identified an important underlying structure to the statistical variance in this data set we can use the component 1 scores, the

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values for each country on component one, to create groupings of similar countries. We used a k-means clustering, one of the most commonly applied clustering techniques in statistical analyses [18-20]. Applying this form of cluster analysis allowed us to group countries with similar characteristics.

In any grouping exercise a choice has to be made between too few and too many categories. In the first instance, we have adopted a three-group classification. The results are shown in Table 6 and mapped in Figure 1 [21].

Table 6: Three Group Classification

The Rich World	The Middle World	The Poor World
Australia	Argentina	Afghanistan
Austria	Bhutan	Albania
Belgium	Botswana	Algeria
Canada	Brazil	Angola
Chile	Cape Verde/ Cabo Verde	Armenia
Costa Rica	China	Azerbaijan
Czech Republic	Colombia	Bangladesh
Denmark	Croatia	Belarus
Finland	Dominican Republic	Benin
France	El Salvador	Bolivia
Germany	Estonia	Bosnia and Herzegovina
Hong Kong SAR	Gabon	Bulgaria
Iceland	Ghana	Burkina Faso
Ireland	Greece	Burundi
Italy	Guatemala	Cambodia
Japan	Guyana	Cameroon
Luxembourg	Honduras	Central African Republic
Netherlands	Hungary	Chad
New Zealand	Indonesia	Comoros
Norway	Israel	Cote d'Ivoire
Poland	Jamaica	Democratic Republic of Congo

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Portugal	Kyrgyz Republic	Ecuador
Singapore	Latvia	Egypt
Slovenia	Lithuania	Ethiopia
Spain	Malaysia	Gambia
Sweden	Mexico	Georgia
Switzerland	Mongolia	Guinea
United Kingdom	Namibia	Guinea-Bissau
United States	Nicaragua	Haiti
Uruguay	Panama	India
	Papua New Guinea	Iran
	Paraguay	Iraq
	Peru	Jordan
	Philippines	Kazakhstan
	Qatar	Kenya
	Republic of South Korea	Laos
	Romania	Lesotho
	Serbia	Liberia
	Slovak Republic	Madagascar
	South Africa	Malawi
	Suriname	Mali
	Thailand	Mauritania
	Trinidad and Tobago	Moldova
	Tunisia	Morocco
	Venezuela	Mozambique
		Nepal
		Niger

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		Nigeria
		Pakistan
		Republic of Congo
		Russia
		Rwanda
		Senegal
		Sierra Leone
		Sri Lanka
		Sudan
		Swaziland
		Syria
		Tajikistan
		Tanzania
		Togo
		Turkey
		Turkmenistan
		Uganda
		Ukraine
		Uzbekistan
		Vietnam
		Yemen
		Zambia
		Zimbabwe

Grouping the component scores of individual countries on component one into three groups provided a rough classification of what we term *Rich*, *Poor* and *Middle*. These are simple terms but have deeper meaning. *Rich* implies a wealth of not only economic growth but also political freedoms and social stability. The poverty of *Poor* countries is not only in low income per capita but also in the lack of political freedoms and social progress. The *Rich* include Northwest Europe, North America, Australia and New Zealand. The *Poor* world contains much of Africa and Asia. The *Middle* includes those neither very rich nor very poor and includes much of South and Central America, southern Africa and Eastern Europe. In Figure 1, we get a better sense of the global nature of the Middle. The

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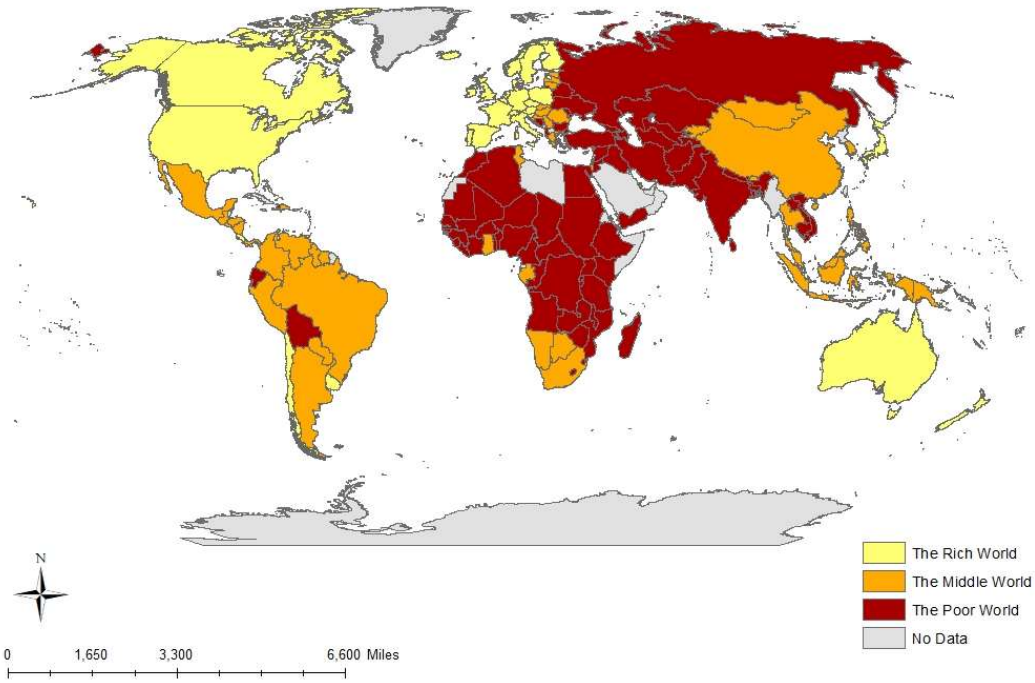
Middle includes those countries on the way up such as China and Vietnam as well as those on the way down such as Venezuela.

Figure 1: A Three Group Classification



6. A Global Geography: Five Groups

A five-group classification, shown in Table 7 and Figure 2, provides a finer mesh. A tight core of very rich countries such as Australia and Denmark remains, but some countries classified as *Rich* in the tripartite division fall a category, such as Estonia, Italy, Poland and Uruguay. The *Middle* of the tripartite categorization became more nuanced, with some, such as Brazil and Colombia, now classified as *Upper Middle* and others, such as China and Russia now grouped under *Lower Middle*. Some classified as *Poor* in the three group classification are shifted into the Lower Middle, such as Algeria, Cambodia and Vietnam. The very poorest category shrinks to a hard core of deep poverty in Africa and the Middle East, including countries such as Afghanistan, Chad and Syria. Let us look in more detail.

Table 7: Five Group Classification

Very Rich, Free and Stable	**Rich and Free**	**Upper Middle**	**Lower Middle**	**Poor and Not Free**
Australia	Argentina	Albania	Algeria	Afghanistan

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Austria	Chile	Bhutan	Armenia	Angola
Belgium	Costa Rica	Bolivia	Azerbaijan	Burkina Faso
Canada	Croatia	Bosnia and Herzegovina	Bangladesh	Burundi
Czech Republic	Estonia	Botswana	Belarus	Cameroon
Denmark	Greece	Brazil	Benin	Central African Republic
Finland	Hong Kong SAR	Bulgaria	Cambodia	Chad
France	Hungary	Cape Verde/ Cabo Verde	China	Cote d'Ivoire
Germany	Israel	Colombia	Comoros	Democratic Republic of Congo
Iceland	Italy	Dominican Republic	Egypt	Ethiopia
Ireland	Latvia	Ecuador	Gabon	Gambia
Japan	Lithuania	El Salvador	Guatemala	Guinea
Luxembourg	Poland	Georgia	Haiti	Guinea-Bissau
Netherlands	Republic of South Korea	Ghana	Honduras	Iran
New Zealand	Singapore	Guyana	India	Iraq

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Norway	Slovak Republic	Kyrgyz Republic	Indonesia	Laos
Portugal	Trinidad and Tobago	Malaysia	Jordan	Liberia
Slovenia	Uruguay	Mexico	Kazakhstan	Mali
Spain		Moldova	Kenya	Mauritania
Sweden		Mongolia	Lesotho	Mozambique
Switzerland		Namibia	Madagascar	Niger
United Kingdom		Panama	Malawi	Nigeria
United States		Paraguay	Morocco	Pakistan
		Peru	Nepal	Republic of Congo
		Philippines	Nicaragua	Rwanda
		Qatar	Papua New Guinea	Sierra Leone
		Romania	Russia	Sudan
		Serbia	Senegal	Syria
		South Africa	Sri Lanka	Togo
		Surinam	Swaziland	Turkmenistan
		Thailand	Tajikistan	Uganda
		Tunisia	Tanzania	Yemen
		Turkey	Uzbekistan	Zimbabwe

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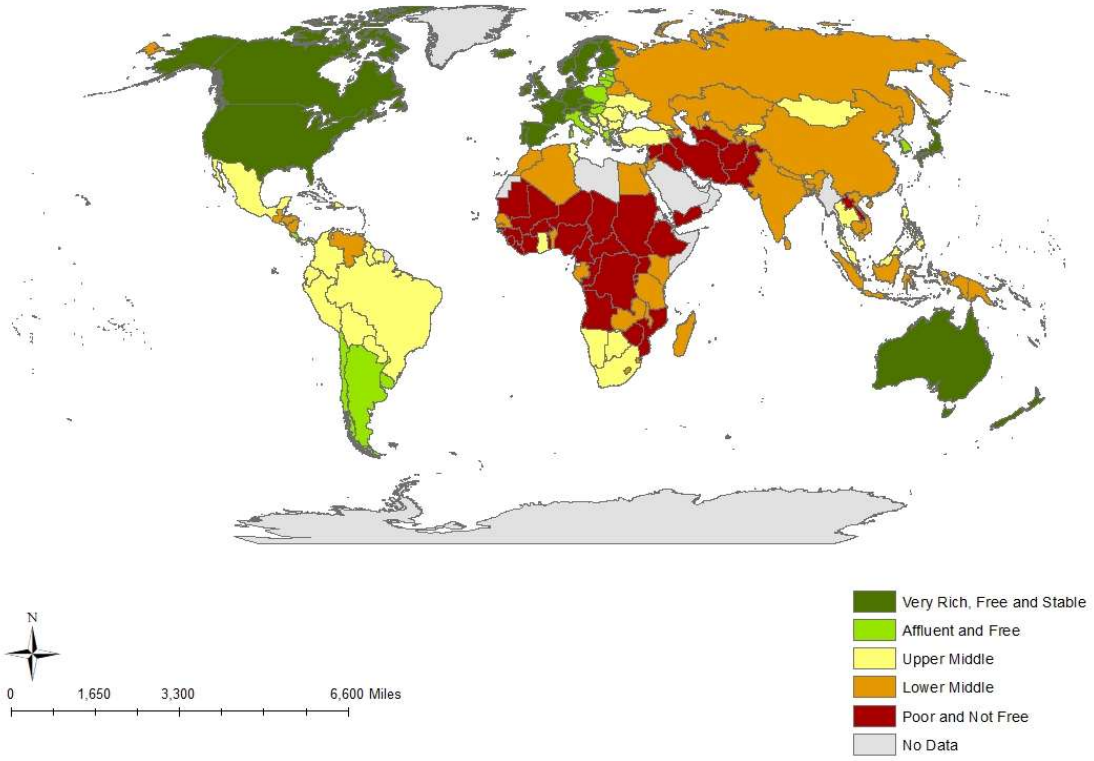
		Ukraine	Venezuela	
			Vietnam	
			Zambia	

Figure 2: A Five Group Classification



6.1. The Very Rich, Free and Stable

This group consists of the very richest countries that are stable democracies and score high on human development and social progress. They are the rich core of the global economy with the highest standards of living and the freest of societies. It is a relatively tight nexus that covers countries only in North America, Europe, and Australasia. Japan is the only country that makes this group from Asia and there are none from Africa, the Middle East or South and Central America. This is the very rich core of the global economy and the democratic heart of the global polity.

6.2. Affluent and Free

This group is only one notch down from the very rich core. It includes countries from across the globe but is most prevalent in Eastern and Southern Europe and in South America.

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6.3. Upper Middle

Between the two extremes of very rich and very poor are two groups that constitute a middle ground between rich and poor, free and unfree, stable and unstable. The term *Upper Middle* is suggestive that this group consists of countries closer to the top than the bottom. There is global coverage with countries in South and Central America, Southern Africa, and Eastern Europe. Asian countries in this category include the Philippines, Thailand and Mongolia.

6.4. Lower Middle

The *Lower Middle* includes countries rapidly developing such as China, but with issues of human rights as well as poorer counties with more authoritarian, undemocratic regimes and more limited human rights. The geographic spread is concentrated in Asia and Africa.

6.5. Poor and Not Free

These are the problem countries with limited economic and social progress and greater instability. The tropical region of Africa is home to many of these countries as well as the cockpit of the Middle East, and Laos, Turkmenistan, and Pakistan.

7. Limitations of Study

The study has a number of limitations. First, the analysis was based on a relatively small sample of indices. The results refer to only the data that was inputted. A larger more diverse set of indices may produce different results. The results reflect the inputted data. However, as we have shown, many indices measure the same underlying dimension.

Second, PCA is only as robust as the initial data. A variety of indices were used and some had to be contorted in order to be compatible. The distortion reinforces confusion for the smaller variance components and makes interpretation difficult. Once we get past the main component the components become less clear cut and obvious.

Third, there are numerous methodological problems in using composite indices [22]. We do not think they invalidate the results, but they make it harder to interpret the components.

Fourth, although the applied k-means clustering technique is among the most commonly applied statistical methods for cluster grouping, other statistical data analysis techniques may provide slightly different results.

Fifth, the classifications of countries are only one snapshot in time. Further work with time series data would allow the changing trajectory of countries to be noted as they move upwards or downwards or even keep their place in these groupings.

8. Conclusions

Despite the limitation of this study there are still some important conclusions to be drawn. We note four.

First, the results highlight the importance of one underlying dimension that combines stability, social progress and economic development. The finding reinforces the idea that stability and social progress go hand in hand with economic development. We are acutely aware of this at the time of state failure or collapse. But it is important to remember that even without complete collapse, the economic and social welfare of a nation is a function of stability and peace. A stable political

system is both a prerequisite and embodiment of social progress and economic growth. It is a truism but no less a powerful finding: social conflict and state instability are both a cause and a reflection of limited social and economic progress.

Second, another less important dimension of the statistical variation across the data is the importance of a range of freedoms, including human rights and freedom of the press. Together these two components explain almost 80 percent of the total variance.

Third, component 3 refers to only one index, that of Economic Freedom. The distinctiveness suggests an index that measures along an insular dimension largely independent from economic development and social progress. It is possible to be neoliberal and poor and unfree. Despite the claims of its apologists, neoliberalism neither secures economic development nor ensures social stability.

Fourth, the country grouping allows us to move beyond simple classification to a deeper appreciation of the national diversity in the global community. The classification is most powerful at the extremes where it distinguishes the very rich, free and stable from the very poor, unfree and unstable.

The classification - indeed the analysis as a whole - is only a preliminary stage in a deeper appreciation of the meaning and limitations of global indices.

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