

Why Do Human Development and Globalization Worsen American Inequality and Debt-to-GDP Ratio?

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How to cite this paper: Bechtel, G. (2022). Why Do Human Development and Globalization Worsen American Inequality and Debt-to-GDP Ratio? *Open Journal of Social Sciences*, 10, 425-434.

<https://doi.org/10.4236/jss.2022.106030>

Received: May 7, 2022

Accepted: June 27, 2022

Published: June 30, 2022

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Abstract

Mahatma Ghandi rejected the concept that underlies classical economic thinking; namely, that “the human being is a rational actor always seeking to maximize material self-interest”. His bottom-up capitalism has been tragically updated by Russia’s invasion of Ukraine, which has convinced the world that only common people can bring governments to heel. The Russian assault has worsened America’s debt-to-GDP ratio, exacerbating the Federal Reserve’s struggle to control inflation, unemployment, and the trade war with China. The United States is the largest national economy, with the greatest impact on all other national economies. This paper shows that the leading global assets, human development and globalization, increase American inequality and debt-to-GDP ratio, threatening the global economy as well. We conjecture that Mahatma Ghandi’s bottom-up capitalism and Alperovitz’s (2017) “Pluralist Commonwealth” will transform both corporate capitalism and traditional state socialism into a new global configuration, elucidating why two leading global assets like human development and globalization worsen America’s inequality and debt-to-GDP ratio (<http://thenextsystem.org/principles/>).

Keywords

Ghandian Economics, The Human Development Index, The KOF Index of Globalization, Fractional Polynomial Prediction Coefficients, Data Authenticity

1. Introduction

Inequality. Russia’s invasion of the Ukraine has convinced the world that only common people can bring governments to heel. Recently, Bishop William

Barber II launched a *poor people's campaign: a national call for moral revival*. “Today... From Alaska to Arkansas, the Bronx to the border, people are coming together to confront the interlocking evils of systemic racism, poverty, ecological devastation, militarism and the war economy, and the distorted moral narrative of religious nationalism. We understand that as a nation we are at a critical juncture—that we need a movement that will shift the moral narrative, impact policies and elections at every level of government, and build lasting power for poor and impacted people.

In the coming year, our ranks will increase as we broaden our efforts and stretch the banner of the Poor People's Campaign: A National Call for Moral Revival even wider. We rise to demand that the 140 million poor and low-income people in our nation—from every race, creed, color, sexuality and place—are no longer ignored, dismissed or pushed to the margins of our political and social agenda. We rise not as left or right, Democrat or Republican, but as a moral fusion movement to build power, build moral activism, build voter participation, and we won't be silent any more! We rise to change the moral narrative and demand that the interlocking injustices of systemic racism, poverty, ecological devastation, the war economy/militarism and the distorted moral narrative of religious nationalism all be ended. We rise to challenge the lie of scarcity in the midst of abundance. We rise to lift the voices and faces of poor and low-income Americans and their moral allies with a new vision of love, justice, and truth for America that says poverty can be abolished and change can come”

(<https://www.poorpeoplescampaign.org>).

Echoing this attack on inequality, the United Nation's Secretary General Antonio Guterres advocated corrections to the World Bank, the International Monetary Fund, and the UN Security Council. Guterres stressed that “events have overtaken us. The corona virus has brought the world to the breaking point and exposed deep demographic inequalities. A new UN governance would give each nation an equal vote and no veto. A new social contract would create equal opportunity at all institutional levels. An inclusive and balanced multilateral trading system would provide sustenance and sustainability.” Guterres reiterated these issues at the United Nations 75th anniversary on September 21, 2020. Pursuing “the future we want, the United Nations we need”, the UN passed a Declaration of International Collaboration.

Bottom-Up Economics. Mahatma Gandhi rejected the concept that underlies classical economic thinking; namely that “the human being is a rational actor always seeking to maximize material self-interest [...] His model, by contrast, is aimed at the fulfillment of needs including the need for meaning and community [...] Gandhi's concept of egalitarianism was centered on the preservation of human dignity rather than material development”. (cf. Internet Explorer: Mahatma Gandhi-Wikipedia). Gandhi advocated local, ground-up creation and ownership of companies rather than control of the supply side by international conglomerates. His major, and revolutionary, economic activity centered on the

manufacture of apparel in localities throughout India and South Africa, supplying their poor and hungry populations. Ghandi's profitable enterprises in these huge BRICS nations epitomized his egalitarian philosophy of status-quo reform by beginning with whatever the real economy presents. His successful deployment of bottom-up capitalism outmatched the top-down efforts of the British empire in its failing attempt to control India and the rest of the planet.

Research Structure. Heeding Mahatma Ghandi, Bishop William Barber II, and Secretary General Antonio Guterres, we begin with an assessment of a nation's economic health. Our chosen nation is the United States, the largest global economy, with the largest effect on all other economies, and itself beset by inflation, unemployment, the trade war with China, and the Russian assault on Ukraine. We begin by describing our dependent variates, American inequality and debt-to-GDP ratio and follow up with the first covariate driving them: the United Nation's Human Development Index (HDI). HDI was invented by Amartya Sen and is regarded as the world's leading indicator of economic well-being (Masood, 2016) (<http://hdr.undp.org>). We then detail the KOF Globalization Index and invoke fractional polynomial prediction of American inequality and debt-to-GDP ratio. We conclude with the effects of inflation, unemployment, the trade war with China, and the Ukraine war upon the Federal Reserve's struggle to avoid a recession. In closing, this struggle is enveloped within Alperovitz's (2017) "Pluralist Commonwealth" that transforms both corporate capitalism and traditional state socialism into the "next system" (<http://thenextsystem.org/principles/>). We leave the reader with the dominant question uncovered by this paper: can Bishop William Barber II, Secretary General Antonio Guterres, and Gar Alperovitz tell us *why* leading global assets like human development and globalization worsen American inequality and debt-to-GDP ratio.

2. American Inequality (I)

Inequality was first treated as a social, political, and moral issue by Jean-Jacques Rousseau in 1755 in his *Discourse on the Origin of Inequality Among Men*. Rousseau closes his discourse with the assertion that "...inequality which prevails in all civilized countries...is plainly contrary to the law of nature, however defined, that children should command old men, fools wise men, and that the privileged few should gorge themselves with superfluities while the starving multitude are in want of the bare necessities of life" (Robbins & Coleman, 1938: p. 839). Centuries later, Corrado Gini (1884-1965), who was Italy's leading econometrician and the mainstay of the newly formed Econometric Society until the 1940s, rejected econometrics and joined a new generation of social scientists whose aim was to combine economics, statistics, and mathematics.

The "Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Lorenz curve plots the cumulative percentages of total income received against the cumulative

number of recipients, starting with the poorest individual or household. The Gini index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. Thus a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality (Source: World Bank, Development Research Group). Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. For more information and methodology, please see PovcalNet (<http://iresearch.worldbank.org/PovcalNet/index.htm>)”.

America’s Gini index is vital to the global economy because the United States has the world’s largest national economy, with the greatest impact on all other national economies. Thus, a contracting American economy endangers global prospects, as well as American livelihoods.

This endangerment is paramount to Bishop Barber II’s *Poor People’s Campaign: A National Call for Moral Revival* (cf. Introduction). In contrast to this moral attack on inequality, Pew Research has employed an economic approach: “Barely 10 years past the end of the Great Recession in 2009, the U.S. economy is doing well on several fronts. The labor market is on a job-creating streak that has rung up more than 110 months straight of employment growth, a record for the post-World War II era. The unemployment rate in November 2019 was 3.5%, a level not seen since the 1960s. Gains on the jobs front are also reflected in household incomes, which have rebounded in recent years. But not all economic indicators appear promising. Household incomes have grown only modestly in this century, and household wealth has not returned to its pre-recession level. Economic inequality, whether measured through the gaps in income or wealth between richer and poorer households, continues to widen.” (<https://www.pewresearch.org/social-trends/2020/01/09/trends-in-income-and-wealth-inequality/>).

3. American Debt-to-GDP Ratio (R)

The debt-to-GDP ratio is the metric comparing a country’s public debt to its gross domestic product (GDP). By comparing what a country owes with what it produces, the debt-to-GDP ratio reliably indicates that particular country’s ability to pay back its debts. Often expressed as a percentage, this ratio can also be interpreted as the number of years needed to pay back debt if GDP is dedicated entirely to debt repayment. The US government finances its debt by issuing US Treasuries, which are widely considered to be the safest bonds on the market.

When a country defaults on its debt, it often triggers financial panic in domestic and international markets alike. As a rule, the higher a country’s debt-to-GDP ratio climbs, the higher its risk of default becomes. Although governments strive to lower their debt-to-GDP ratios, this can be difficult to achieve during periods of unrest, such as wartime or economic recession. In such challenging climates, governments tend to increase borrowing to stimulate growth and boost

aggregate demand. This macroeconomic strategy is attributed to Keynesian economics.

A study by the World Bank found that countries whose debt-to-GDP ratios exceed 77% for prolonged periods experience significant slowdowns in economic growth. Every percentage point of debt above this level costs countries 0.017 percentage points in economic growth. The US debt-to-GDP ratio for the fourth quarter of 2021 was almost double early 2008 levels but down from the all-time high of 135.9% seen in the second quarter of 2020. The US has had a debt-to-GDP over 77% since the first quarter of 2009. This unhealthy economic performance has persisted until the latest readings in 2021.

The record-breaking 133.92% occurred in the fourth quarter of 2020 with the COVID19 shock.

4. The Human Development Index (H)

“The 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. The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita.” Each of these HDI dimensions is a national *result* rather than national *goal*. The UN computes HDI as the geometric mean of these three dimensions of well-being.

Explicating the three dimensions and their composite HDI scale, the United Nations Development Program (<http://hdr.undp.org>) continues: “The normalized [0, 1] scale for health and education (in years) and standard of living (in logarithm-of-dollar-units) is obtained as follows: Minimum and maximum values (goalposts) are set in order to transform the indicators expressed in different units into indices on a scale of 0 to 1. These goalposts act as the ‘natural zeros’ and ‘aspirational targets’, respectively, from which component indicators are standardized. [...] Having defined the minimum and maximum values, the dimension indices are calculated as *the ratio of actual value minus minimum value to maximum value minus minimum value*. For the education dimension, this ratio is first applied to each of the two indicators, and then the arithmetic mean of the two resulting indices is taken. [...]

Because each dimension index is a proxy for capabilities in the corresponding dimension, the transformation function from income to capabilities is likely to be concave—that is, each additional dollar of income has a smaller effect on expanding capabilities. Thus, for income, the natural logarithm of the actual minimum and maximum values is used”.

The conversion of HDI’s three dimensions to a common [0, 1] scale was accomplished by Amartya Sen (Masood, 2016: pp. 93-95). Sen’s natural zeros and

aspirational targets are calibrated in years for life span and lifetime schooling. For standard of living these goalposts are measured in logarithm-of-dollar-units. The above ratio then places health, education, and standard of living in the closed interval $[0, 1]$. The geometric mean of these three points is the HDI, which is also in $[0, 1]$.

5. The KOF Index of Globalization (G)

The KOF Index was developed at the Swiss Economic Institute, Zurich (Dreher, 2006; Potrafke, 2015; Savina et al., 2019) and was inspired by Visions of Governance for the 21st Century in Cambridge, MA, USA. It was introduced in 2002, published in 2006, updated and detailed in 2008, and revisited by Savina et al. (2019). This index defines globalization as the process of creating networks of connections among actors at multi-continental distances, mediated through a variety of flows including people, information and ideas, capital and goods. Globalization is conceptualized as a process that erodes national boundaries, integrates national economies, cultures, technologies and governance and produces complex relations of mutual interdependence (<http://globalization.kof.ethz.ch/>). **Table 1** lists the six sub-indicators that make up the KOF Index, whose standardization is described by the Swiss Federal Institute of Technology as follows: “Each sub-indicator is transformed to a scale of one to one hundred, where one hundred is the maximum value for a specific indicator and one is the minimum value. Higher values denote higher globalization and lower values denote less globalization. The data are transformed according to the percentiles of the original distribution.” These percentiles constitute an identity scale; i.e. a scale whose transformation is restricted to multiplication by one.

The six sub-indicators in **Table 1** support Xi Jin Ping’s plea to the 2021 World Economic Forum in Davos, Switzerland: “We must build an open world economy, firmly safeguard the multilateral trade system, and refrain from making

Table 1. Components of the KOF globalization index.

Indicator	Sub-Indicators
<i>Actual flows in % GDP</i>	Trade, Foreign direct investment, stocks, Portfolio investment, Income payments to foreign nationals
<i>Restrictions</i>	Hidden import barriers, Mean tariff rate, Taxes on international trade, Capital account restrictions
<i>Personal Contact</i>	Telephone traffic, Transfers, Foreign population, International letters
<i>Information Flows</i>	Internet users, Television, Trade in newspapers
<i>Cultural Proximity</i>	Number of McDonalds, Number of Ikea, Trade in books
<i>Political Globalization</i>	Embassies in country, Membership in international organizations, Participation in U.N. Security Council missions, International treaties

Table 2. Prediction coefficients for American Inequality (I).

Product Moment Correlations	Goodness-of-fit R ²
H: 0.7326	G: 0.7248
H: 0.7326	G: 0.6910

Table 3. Prediction coefficients for the American Debt-To-GDP Ratio (R).

Product Moment Correlations	Goodness-of-fit R ²
H: 0.8569	G: 0.8300
H: 0.8854	G: 0.8736

discriminating and exclusive standards, rules, and systems, as well as high walls that separate trade, investment, and technology” (<https://www.euractiv.com>). This plea offers an investment-policy guide to foreign nationals, sovereign states, the United Nations, the World Bank, the International Monetary Fund, and the New Development Bank in Shanghai.

6. Method: Fractional Polynomial Prediction

Data and Results. **Table 2** and **Table 3** demonstrate that fractional polynomial prediction of American inequality **I** by covariates **H** and **G**, and **R** by covariates **H** and **G**, is confirmed by very high R²s. This result over yearly values in 1991...2016 is delivered by the following fractional polynomial regressions (cf. *StataCorp, 2011* and *Royston & Altman, 1994*).

$$\text{fracpoly reg I H, noscaling} \quad (1)$$

$$\text{fracpoly reg I G, noscaling} \quad (2)$$

$$\text{fracpoly reg R H, noscaling} \quad (3)$$

$$\text{fracpoly reg R G, noscaling} \quad (4)$$

The prediction coefficients in **Table 2** and **Table 3** show that fractional polynomial regressions 1 - 4 are very parsimonious in predicting **R** and **I** from **H** and **G**. Thus, in each of these four regressions *only one* independent variate suffices to predict its dependent variate (cf. *Royston & Altman, 1994* and *StataCorp, 2011*).

Data Inevitability. **Table 2** and **Table 3** give prediction coefficients for regressions **I** and **R** on **H** and **G** over the period 1991-2016 *before* the global shocks of Covid19, the Ukraine war, and recession. The periodicity of these data suggest that exogenous causes, such as cyclicity and climate, may account for the prediction coefficients in **Table 2** and **Table 3**, and the Federal Reserve should not be blamed for them by Wall Street and economic pundits. As indicated in the Introduction, the United States is the largest global economy, with the largest effect on all other economies.

7. Summary

Data Authenticity. This work discovers that major *American* problems, in-

equality and debt-to-GDP ratio, have been worsened by the two leading *global* assets, human development and globalization. This threat to the United States rests upon the prediction coefficients in **Table 2** and **Table 3**, which are brought by fractional polynomial regressions (1)-(4). The major limitation of this work, therefore, lies in the authenticity of these data. Because rising American inequality and debt-to-GDP ratio threaten the entire global community, we must challenge our findings, which reveal that penetrating precise hard data can refute the authenticity of these data. An explanation of the economic findings here might be provided by Alperovitz's (2017) "Pluralist Commonwealth", which places human development, globalization, corporate capitalism, state socialism, and Gandhian economics into a "next system" that supports the prediction coefficients in **Table 2** and **Table 3** (<http://thenextsystem.org/principles/>).

In the field of medical physics a very different challenge to data authenticity has been contributed by Bechtel (2022: p. 1). "...inhaled hyperpolarized *Xenon* gas produces distinct signals creating a novel way to measure gas exchange in the lungs. We establish correction factors for an important emerging metric of gas exchange whose structural limit is poorly understood. Our findings demonstrate a need to account for *Hemoglobin* in assessing gas-exchange and establishing health reference metrics in *Xenon* MRI" (*ital mine*).

These economic and biological examples uncover very different theories of data (cf. Coombs, 1964). In A. Bechtel's work, controversy over "reference metrics in *Xenon* MRI" presents a scaling issue that threatens medical data authenticity. In the case of our economic analysis, data authenticity might be addressed by Pluralist Commonwealth theory that postulates the bottom-up components suggested in the Introduction.

Scaling. In fractional polynomial regressions (1)-(4) the dependent and independent variates **R**, **I**, **H**, and **G**, are all percents, which are identity scales that exceed interval scales in the hierarchy of scientific measurement. For almost half a century interval scales have been beset with skepticism about their incremental benefits over and above identity scales already in use (Shapiro, 1972: p. 371). The subjectivity associated with interval scaling, i.e. survey sampling, questionnaire interrogation, probabilistic inference, and significance testing, are absent from identity scales which circumvent the host of long-standing, and now acute issues daunting micro-data collection and analysis. These issues are circumvented by the fractional polynomial prediction coefficients in **Table 2** and **Table 3** which rest on time series of **R**, **I**, **H** and **G**.

Results. The coefficients in **Table 2** and **Table 3** demonstrate that human development and globalization increase America's debt-to-GDP ratio and inequality. The magnitude of these coefficients worsens the Federal Reserve's struggle to control inflation, unemployment, the trade war with China, and the impacts of the Ukraine war. Corroborating the Federal Reserve's concerns, the IMF's Chief Economist Gita Gopinath predicted a drop in economic outlook in 2020. In the second quarter of 2020 the American economy, at an annualized

rate, contracted by one third of its value. The United Nations humanitarian agency then alerted the United States, the IMF, and the World Bank that mitigating economic contraction is crucial for endangered poor nations. The prediction coefficients in **Table 2** and **Table 3** provide data-driven support for this UN alert.

Future Directions. In this turbulent century national and global leaders are well aware that the renowned Arundhati Roy has called Narendra Modi's nomination as prime minister of India "a 'tragedy'". She said business houses were supporting his candidacy because he was the 'most militaristic and aggressive' candidate. She has argued that Modi has control over India to a degree unrecognized by most people in the Western world: 'He is the system. He has the backing of the media. He has the backing of the army, the courts, a majoritarian popular vote... Every institution has fallen in line.' She has expressed deep despair for the future, calling Modi's long-term plans for a highly centralized Hindu state 'suicidal' for the multicultural subcontinent. On 28 April 2021, The Guardian published an article by Roy describing the Indian government's response to the Covid19 pandemic as a 'crime against humanity', in which The Washington Post said Roy 'slammed Modi for his handling of the pandemic'. Roy's op-ed was also published in The Wire with the title 'It's Not Enough to Say the Government Has Failed. We Are Witnessing a Crime Against Humanity'".

(https://en.wikipedia.org/wiki/Arundhati_Roy#Views_on_Narendra_Modi). More broadly, Arundhati Roy has become increasingly concerned about human development and globalization, "seeking portals between this life and the next".

In contrast, portals between the recent past and present are constantly being addressed by the United Nations, the United States, the IMF, and the World Bank, and may well give way to fundamental systemic change that transcends corporate capitalism and state socialism. This transcendence was reiterated in 2022 with the "end of globalization as we know it", threatening uncontrolled inflation and recession. In March, 2022 Fed Chair Powell began his press conference by stressing that the Russian assault on Ukraine has financial and economic implications for the global economy and the American economy that are highly uncertain. These foreboding forecasts imply that countries will retreat to their own shores, producing essential and desired goods and services at home in isolation, diminishing their comparative advantages (cf. **Samuelson & Nordhaus, 1985: pp. 833-840, 846-856**). We leave the reader with the dominant question uncovered by this paper: can Arundhati Roy, Bishop William Barber II, Secretary General Antonio Guterres, and Gar Alperovitz tell us *why* leading global assets like human development and globalization worsen American inequality and debt-to-GDP ratio.

Acknowledgements

This article is dedicated to the memories of the author's best critic, Maria Cohn Bechtel, and his mentor, Clyde Hamilton Coombs. The author thanks Aryil Bechtel for his contributions to the concepts of parsimonious prediction and data

authenticity, Timothy Bechtel for describing the global milieu surrounding American inequality, and Dr. Bethany Bechtel for her insistence on monitoring American inequality over time. The author thanks the reviewer for increasing the substance and clarity of this article and Editor Alice Yao for her placement of this work in the social science community.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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