“Measuring Economic Freedom – an Alternative Functional Specification and Subsequent Ranking”

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Abstract: The Fraser Institute’s “Economic Freedom of the World” index provides an aggregate measure of economic freedom by taking a simple arithmetic mean of scores over five sub-dimensions: (1) size of government, (2) legal structure and security of property rights, (3) access to sound money, (4) freedom to trade internationally, and (5) regulation of credit, labor, and business. By computing the aggregate score as a simple arithmetic mean, it is implicitly assumed that the different sub-dimensions are “perfect substitutes” for each other. As an alternative, we compute an aggregate economic freedom score and resulting ordinal ranking, by taking a geometric mean of the five sub-dimensions. This alternative specification, the marginal impact of each sub-dimension on the aggregate score is no longer independent of the other sub-dimension scores. Consequently, countries with inconsistent levels of economic freedom across sub-dimensions are “punished” to a greater degree than countries with less variability across the sub-dimensions. For the ordinal ranking of countries which results from this alternate approach, 9 countries mtakix prsBtwacrosTw 6.665 0 Tdsu, (s mta57coupotsking,x prsBtwhe oracrosdown 10.669

I. INTRODUCTION

Economic Freedom refers to the ability of individuals to engage in economic pursuits however they see fit. This includes (but is not limited to) an individual having full and complete property rights over resources that they are endowed with or that they have legally acquired. The level of economic freedom in a society is of critical importance for both individual and social outcomes. Economic Freedom (or a lack thereof) determines the ways in which market institutions allocate productive resources and consumption goods/services across households. This has a direct impact on not only the functioning of markets, but also economic well-being and economic opportunity for the individual.

This study examines the way in which economic freedom is measured by the Fraser Institute's "Economic Freedom of the World" index (EFWI).[1] We begin by briefly providing an overview of the history of the EFWI. We then discuss the construction of this index, and we note a potential shortcoming with respect to the mathematical properties of the way in which different dimensions of economic freedom are combined into a single summary measure. We propose an alternative aggregation method and compute a ranking of economic freedom across countries using this differing approach. Comparisons are made between measured levels of economic freedom (and the ordinal raking of countries with respect to economic freedom) under the standard EFWI and our alternate approach. Finally, by way of a simple univariate Ordinary Least Squares regression, we examine the degree to which economic free

II. HISTORY OF THE ECONOMIC FREEDOM OF THE OF THE WORLD INDEX

The “Economic Freedom of the World” index, produced by the Fraser Institute, was first conceived at a 1984 Mont Pelerin Society meeting session in which George Orwell’s book, 1984, was being discussed. The accuracy of Orwell’s future predictions was the topic of discussion that led Milton Friedman to note a lack of readily available empirical data to support conjectures related to the impact of and trends in levels of economic freedom. The significant question of whether the level of economic freedom was growing or eroding is what led the founder then-Executive-Chairman of Canada’s Fraser Institute, Michael Walker, and Rose and Milton Friedman to arrange a meeting sponsored by the Liberty Fund to discuss the implications of developing such a measure of economic freedom. This initial discussion led to a series of six meetings which generated ideas involving a range of ideas including a “survey-based” economic freedom index, however, that effort failed. Eventually, Gwartney, Block, and Lawson were asked to complete a publishable index, and in 1996 the original EFWI was produced:

surveys, expert panels, and generi

Consequently, a country with area scores of T_5, T_6, T_7, T_8, and T_9 would have an aggregate Economic Freedom of the World index score of:

$$' (9 + \circ \quad L \quad \ddot{a}_5 t E T \ddot{a}_6 t H T \ddot{a}_7 t H T \ddot{a}_8 t H T \ddot{a}_9 t L T \tilde{A}^9 \acute{Y} @ \cdot 5 \ddot{a} t \acute{y} T \qquad (1)$$

Researchers have been engaged in an ongoing debate regarding whether it is or is not appropriate to even attempt to combine different dimensions of economic freedom into a single aggregate measure. Heckelman and Stroup (2005) argue that different subcomponents may impact

particular score or any of the other four area scores. Furthermore, a one unit change in any of the five area scores can be perfectly off-set by changes in the opposite direction of the other four area scores which sum to one (regardless of the initial values of any of the area scores). This can be seen by recognizing that the "Marginal Rate of Substitution" between any two areas, E and G, is

equal to / 4 5 $\frac{\partial U / \partial E}{\partial U / \partial G} = \frac{\partial F / \partial E}{\partial F / \partial G}$. There is no apparent a priori reason to suspect

that the impact of the different areas – size of government; legal structure and security of property

Borrowing the functional form of Cobb-Douglas utility from consumer choice theory, for a country with area scores of T_5, T_6, T_7, T_8, and T_9, we propose computing an aggregate Economic Freedom Index score as a geometric mean:

$$' (9 + \grave{A} \; L \; \ddot{a}^{6} T_5^{\ddot{a}^{6}} T_6^{\ddot{a}^{6}} T_7^{\ddot{a}^{6}} T_8^{\ddot{a}^{6}} T_9^{\ddot{a}^{6}} L \; \hat{A} \, {}^{9}_{Y} @ 5^{\ddot{a}^{6}}_{Y} \qquad (2)$$

Partial differentiation of (2) yields $!\,{}^{3}\!/_{4} \, \dot{\iota} \, \text{Đ} \, {}^{\cdot}\hat{A}$

identifies “Country A” as having the greatest and “Country C” as having the least economic freedom of these three. Focusing on the area scores for “Countries A and B” directly reveals how across the different areas, averages are preferred to extremes for A.

Indeed, a potential

measure of economic freedom, $9 + \lambda$ defined above, for the 159 countries included in this dataset for 2015. A summary of these results is provided by Table 2 (see the final page of this report).

Score Change of only –.02), Sweden, Madagascar, and Haiti (the countries with the largest

difference between largest and smallest area scores is 5.30 or more and a variance of area scores that is 4.18 or above. Moreover, these three countries each have one dimension in which the level of economic freedom is considerably lower than the other four dimensions (for Sweden this dimension is Size of Government; for Madagascar and Haiti this dimension is Legal Structure and Property Rights). These observations illustrate how an index is computed as geometric mean

and Per Capita GDP for the 155 countries included in both the “Economic Freedom of the World”

observation that ' (9 + correlates with Per Capita GDP slightly better than does (9 +

REFERENCES:

Table 2 – Comparison of EFWI-G to EFWI-A (2015)

Rank G	Rank A	Rank Change	Country	EFWI G	EFWI A	Score Change
1	1	0	Hong Kong	8.95	8.97	0.02
2	2	0	Singapore	8.78	8.81	0.03
3	3	0	New Zealand	8.41	8.48	0.07
4	4	0	Switzerland	8.40	8.44	0.04
5	5	0	Ireland	8.09	8.19	0.10
6	7	1	Mauritius	7.97	8.04	0.07
7	8	1	Canada	7.75	8.04	0.29
r 81	81	0	Turkey	6.68	6.82	0.15
r 82	90	8	Zambia	6.67	6.75	0.08
r 83	88	5	Serbia	6.66	6.75	0.09
r 84	89	5	Thailand	6.64	6.75	0.11
r 85	79	-6	Paraguay	6.62	6.91	0.29
r 86	78	-8	Lebanon	6.62	6.91	0.29

Table 4 – EFWI-G, EFWI-A, and Per Capita GDP (2014)

RankG	Country	EFWIG	EFWIA	Per Capita GDP
1	Hong Kong	8.84	8.88	51,808
2	Singapore	8.65	8.69	72,583
3	New Zealand	8.39	8.46	34,735
4	Switzerland	8.32	8.35	58,469
5	Canada	8.15	8.20	42,352
6	Australia	7.97	8.02	43,071
7	Georgia	7.95	8.00	9,977

RankG	Country	EFWIG	EFWIA	Per Capita GDP
79	Laos	6.85	6.92	5,544
80	Croatia	6.84	7.04	21,675
81	Indonesia	6.83	7.02	9,707
82	Zambia	6.82	6.93	3,726
83	Turkey	6.78	6.91	19,236
84	Slovenia	6.72	6.98	30,488