National identity, globalization, and the well-being of nations

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Abstract: Using a simple production function approach I show that conventional factors and forces of production, national identity, and globalization are important to national well-being, but in varying ways. Whereas investment in capital and globalization, especially social globalization, affect national well-being strongly, national well-being is inelastic to all three measures of national identity. A reasonable conclusion is that nations gain more from interactions with other nations than from national isolation. **JEL Code:** O43, O57, F43, O11, D31, Z00

Keywords: National identity, national colors, globalization, well-being of nations, human development index (HDI), national flag colors

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1. Introduction

This paper estimates the effects of some measures of national identity and globalization on the national well-being of 55 countries in 2007. For ages the forces of nationalism and globalization have coexisted, with globalization tending to gain an upperhand in recent years and nationalism dominating the 19th Century and early years of the 20th Century (Cf. Harry G. Johnson, 1967). Although the coexistence continues to-date, its rate of progress has slowed in the face of the current financial crises and growing voices against "globalism."[1] Under these new conditions it is relevant to ask what the effects of nationalism and globalization are on the well-being of nations.

As a collection of common attributes and values of a nation, national identity is a reasonable proxy for nationalism (Jade P. Dougherty, 2003). In the olden days racial homogeneity and ethnic purity were key characteristics that identified nations. Nowadays nations are heterogenous so that national identity can best be represented by national symbols and national institutional properties. Among national symbols are such things as national flags, national flag colors, and national colors. Key institutional elements of national identity include constitutions and other constitutional elements of institutions. While the effects of constitutions and other constitutional elements of institutions on economic performance are common subjects of study, and while it is intuitively clear that national identity is important to economic performance, estimates of the effects of national identity and globalization on human well-being remain scanty.

In this paper I impose a simple production function on a small sample of nations to estimate the effects of national identity and globalization on the national well-being of 55 nations in 2007. Using an OLS estimator I find that conventional factors and forces of production, national identity, and globalization are all important to national well-being, but in different ways. For example, investment in capital and globalization affect national well-being strongly. However, national well-being is inelastic to all three measures of national identity considered. From these findings I conclude that nations gain more from interactions with other nations than from nationalism, narrowly defined.

In what follows below I first build on the scanty extant literature on the subject in Section 2. In Section 3 I set up a simple framework for the empirical analysis. Section 4 presents the estimation results, while Section 5 concludes.

2. Adding to the scanty relevant literature

Human well-being is ultimately the objective of every economic agent. The concept of utility in the microeconomic theory of consumer choice demonstrates the role well-being

[1]For the difference see Joseph Nye (2002) at http://www.theglobalist.com/StoryId.aspx?StoryId=2392.

plays in life. For this reason human well-being (welfare) attracts a lot of attention (Kahnemann, Diener, and Schwarz, 2003, Bruni and Porta, 2007). However, it was only recently that Anand and Sen (1994) successfully developed and popularized the first comprehensive index of human development - the human development index (HDI). The benefit of the HDI over GDP per capita as a measure of well-being is that it is multidimensional. Clark and McGillivray (2007, and Clarke and McGillivray (2006) describe HDI measurement issues, while Mishra and Nathan (2008) propose improvements. From this literature it is clear that well-being depends on economic and non-economic factors and forces.

It is relatively easy to identify and specify the economic elements of HDI given that per capita income is one of them - after all the determination of GDP is a well-studied issue. What is not as easy is dealing with non-economic factors and forces, like national identity, which influence well-being. However, studies on the value of cultural goods and services like national parks, museums, public libraries, botanical gardens, zoos, theaters, and the arts are inspiring (Aabo, 2005, Kinsey, 2002, Throsby, 2001, Baumol and Bowen, 1966). Following that inspiration Amavilah (2008a) assumed a relationship between national flags and national flag colors and HDI across 93 nations in 2007, and found an inverse correlation between HDI and flag colors and a positive relationship between flag existence and HDI. For a small sample of 57 countries Amavilah (2008b) argued for a relationship between HDI on one side, and on the other side flags, flag colors, number of original articles in a constitution, and number of constitutional changes. Here, too, the results confirmed the first paper, in addition to having negative coefficients for the number of original articles in the constitution, and number of constitutional changes. In Amavilah (2009) HDI depends on conventional factors and forces, national symbols, and globalization, where *national symbols* are represented by *national flags* and *national flag colors*. This paper represents *national identity* by *national colors* and constitutional elements, so that HDI depends on conventional factors and forces, national identity, and globalization.

I clarify the difference between national colors and national flag colors in the data section below. For now I observe that the nexus between economic growth and globalization draws mainly from economic growth and trade theories. Axel Dreher (2003) provides an excellent outline of the nexus and finds that globalization promotes economic growth. Despite the lack of direct evidence, many economists would have no problem inferring from Dreher that globalization is good for human well-being. In an analysis of the 'globalization of human well-being' Goklany (2002) concludes that '... in terms of the truly critical measures of well-bing, ... the countries of world are much closer to being equal than they were a few decades ago" (p. 15).

Also intuitively the importance of constitutional elements is obvious. I have seen it suggested in Jose L. Cordeiro (2008) that Aristotle was the first to articulate the value of

constitutions. However, according to Charles A. Beard (1935), early theory argued that constitutions were merely political instruments of the rich to dominate the poor. Morever, it was only recently that Hayek (1978) added a new interpretation that enhanced understanding of the role of constitutions, whereby constitutions provide for individual liberty. To the extent that the rule of law sometimes hinders individual freedom, a devoted follower of Hayek would say that constitutions contravene economic freedom and thwart economic performance.

Douglass North (1990) furnishes an analytical framework for clarifying how institutions evolve and how they induce change. In that scheme constitutions either promote or inhibit incentives that are essential for economic performance. Thus, recent empirical work on the influence of constitutions on the economic growth of nations are North-constitent, at least in their conclusions. La Porta, et. al. (1998), for example, find that constitutions that are based on French civil law affect economic growth more positively than those based on British common law. Ed Glaeser, et. al. (2004) are skeptical of the importance of political institutions, including constitutions. They find that human capital and good policies, and only later in the process of development do improved political institutions, foster good economic performance.

I surmise from Persson and Tabellini (2004, 2005) that constitutions are like national troops ready when called upon to rally against corruption and other problems that tend to stifle economic performance. Insofar as the troops have no mandate to call themselves up, the success of their mission is inseparable from the governing policy. Policies depend on political regimes, as Persson and Tabellini remind us, a presidential regime has policy implications quite different from a majoritarian dispensation.

The extant literature is similarly clear in its implications that national identity and globalization matter for human well-being, but the same literature continue to measure well-being indirectly through per capita income. The economic sociologist Ming-Chang Tsai (2006) employs a ‘dialectical’ random effect model to assess the impacts of globalization on human well-being and finds a direct correlation between human development and globalization. However, the positive effects are neutralized by the negative indirect effects of globalization by way of debilitated state power, and increased social spending and instability. In the end only the impacts of political globalization are positive, ‘whereas economic and social globalization do not generate favorable influences when development level and regional differences [serve] as controls’ (see paper abstract). This paper lines up behind and adds an additional dimension to Ming-Chan Tsai by making a connection between HDI on one side and national identity and globalization on the other side.

3. Empirical framework

This section outlines the model, data, and the model estimations.

3.1 Well-being accounting model

By definition the human development index (HDI) is a 3D measure of the achievements in health (H1), education (H2), and the standard of living (Y) of a country's population (N). Let $H1+H2=H$, and define some variable

$$e^{HDI}N=H^{a}Y^{b}, \quad a+b\leq 1, \tag{1}$$

where H is human capital, Y is real GDP, and *a* and *b* are weights. Then according to Amavilah (2008a, b, c), H = f(N), and Y is Cobb-Douglas, i.e.,

$$\begin{aligned} H&=e^{\phi q}N \\ Y&=(AL)^{\alpha}K^{\beta}. \end{aligned} \tag{2}$$

Given (2) and assuming $L=e^{nt}N$, (1) becomes

$$Ne^{HDI}N=(e^{\phi q}N)^{a}[(Ae^{nt}N)^{\alpha}K^{\beta}]^{b}, \tag{3}$$

where ϕ is the rate of transforming raw N into quality N, A is the state of technology, L is labor, *n* is the growth rate of L equal to the growth rate of N, and K is physical capital. Therefore, to give (3) a familiar meaning, divide through by N so that

$$e^{HDI}=(e^{\phi q})^{a}[(Ae^{nt})^{\alpha}k^{\beta}]^{b}. \tag{4}$$

Simplifying and taking the natural logarithms of (4) leads to

$$HDI=\gamma_0+\gamma_1\ln k+\gamma_2 n+\gamma_3 q,. \tag{5}$$

where $\gamma_0=\ln(A^{\alpha b})$, $\gamma_1=\beta b$, $\gamma_2=\alpha b$, $\gamma_3=a\phi$, $t=1$. Eq. (5) is the equation to be estimated. In it q denotes a set of national identity, constitutional, and globalization variables.

3.2 Data and sources

The analysis focuses on 55 countries in 2007. To do that we need data on HDI, capital (K, k), population (N), growth of labor (*n*), and a set of *q* variables. The q variables are national identity and globalization. The data for HDI, N, and *n* are available from the UNDP's *World Human Development Reports* (WDRs, various). Human capital (H) has two dimensions: Health/life expectancy at birth (H1), and education/literacy rate (H2).[2] Capital (K, k) is the percentage of GDP that goes into fixed capital formation as given by the IMF's *International Financial Statistics* (IFS) *Yearbook* (2007). GDPPC (Y) is per capita GDP in terms of purchasing power parity (PPP); it is available from a variety of sources including the IMF/IFS, CIA, and WDRs.

The two q variables are national identity and globalization. I represent national identity with *national colors* and *constitutional identifiers*. National colors for some countries are their national flag colors; for other countries national colors are national flag colors *plus* additional colors that make whatever national sense - and I am not going into that part. For instance, the U.S. national colors and national flag colors are the same: Red, White, and Blue. National flag colors for Bangladesh are Green and Red, but national colors would be national flag colors plus Brown and Blue. Thus, to generate dummy variables for the national color variable I examined Wikipedia's "well-known national colours" at http://e.wikipedia.org/wiki/National_colours. Next I arbitrarily set White = 5, Blue = 4, Red = 3, Yellow = 2, and Black = 1. From here the values of other colors are *arbitrary* color combinations, i.e., Green = Y x B = 2 x 4 = 8, Purple = Blue x Red = 4 x 3 = 12, and so on. For instance, the U.S. flag is Red, White, and Blue. The dummy value for US national colors is White + Red + Blue = 5 + 3 + 4 = 12. For Australia national flag colors are Green and Gold, giving a dummy value of approximately 10 (I use Yellow for Gold). However, Australia's national colors include Blue as well as Green and Gold so that the dummy value is 15 (Green + Gold + Blue). I do similar coding for all 55 nations in the sample.

The second set of q variables, which I label constitutional identifiers, relates to constitutions and constitutional elements. There are two data series from Jose Cordeiro (2008). One is the number of constitutions each country has had over the years. This illustrates constitutional changes and stability. The second variable is the number of original articles in each country's constitution, which reflects the quality of the constitution ... perhaps.

Globalization data are KOF data available at http://globalization.kof.ethz.ch/ and in Axel Dreher (2003). They come in one aggregate and three disaggregates. The aggregate is

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[2]See Technical Note 1
http://hdr.undp.org/en/media/HDR_20072008_Tech_Note_1.pdf.

Table 1 - Descriptive statistics

Name	No. Observations	Mean	Std. Deviation	Minimum	Maximum
Country	55	28	16.021	1	55
HDI	55	0.824	0.128	0.521	0.962
Population (N)	55	90.684	232.160	2.900	1324.400
GDP (PPP)	55	1001.700	22.020	15.800	13844.00
Capital (K)	55	22.020	5.285	13.140	42.610
Life-expectancy	55	73.891	7.478	42.500	82.000
Education	55	88.713	14.662	41.100	99.900
N-growth (n)	55	1.385	3.008	-0.760	22.700
National colors	55	12.673	4.849	5.000	27.000
Constitutions	55	11.455	50.125	0.000	375.000
Artiles of Constitution	55	161.510	93.606	0.000	395.000
aGlobe	55	70.214	12.777	39.650	91.510
eGlobe	55	69.018	14.205	36.220	96.670
sGlobe	55	63.606	18.118	22.380	93.850
pGlobe	55	83.670	11.728	51.910	98.030

called the 'Index of Globalization' (aGlobe). The three disaggregates are the 'Index of Economic Globalization' (eGlobe), 'Index of Social Globalization' (sGlobe), and the 'Index of Political Globalization' (pGlobe).[3] Table 1 presents descriptive statistics of the data.

3.3 Implementing the well-being accounting model

Generalized in a conventional econometric form, (5) becomes

$$HDI = X\Theta + q\Phi + \mu, \qquad (6)$$

where X designates conventional factors and forces like exogenous technical change, capital and labor, q represents national identity and globalization, and μ is the error term. I deploy the OLS estimator, making the usual adjustments for statistical problems, using White's (1980a, b) procedure. In such correction I *deliberately err* in favor of *economic significance* vis-a-vis statistical significance.

4. Estimation results and their implications

Table 2 presents the results. From Estimation 2.1 it is clear that national well-being responds positively to changes in capital investment and aggregate globalization. Globalization has the larger of the two positive influences on HDI. National well-being is inelastic with respect to national identity and labor growth, with the negative effect of national colors on well-being being statistically insignificant at the five percent level. Estimation 2.3 excludes the dummy variable for national colors which is insignificant in Estimation 2.1. Even so, the technical efficiency of the estimates does not improve a lot, and the explanatory power of the two regressions as measured by the adjusted R-square remains the same. This suggests the results are robust.

Estimation 2.2 is Estimation 2.1 with the globalization index disaggregated into its economic (eGlobe), social (sGlobe), and political (pGlobe) components. Any globalization (iGlobe) and capital investment affect HDI in a strong way, with sGlobe having the largest effect of the three. Estimation 2.4 assumes zero globalization. In this case only capital investment has a positive, but statistically insignificant, effect on national well-being.

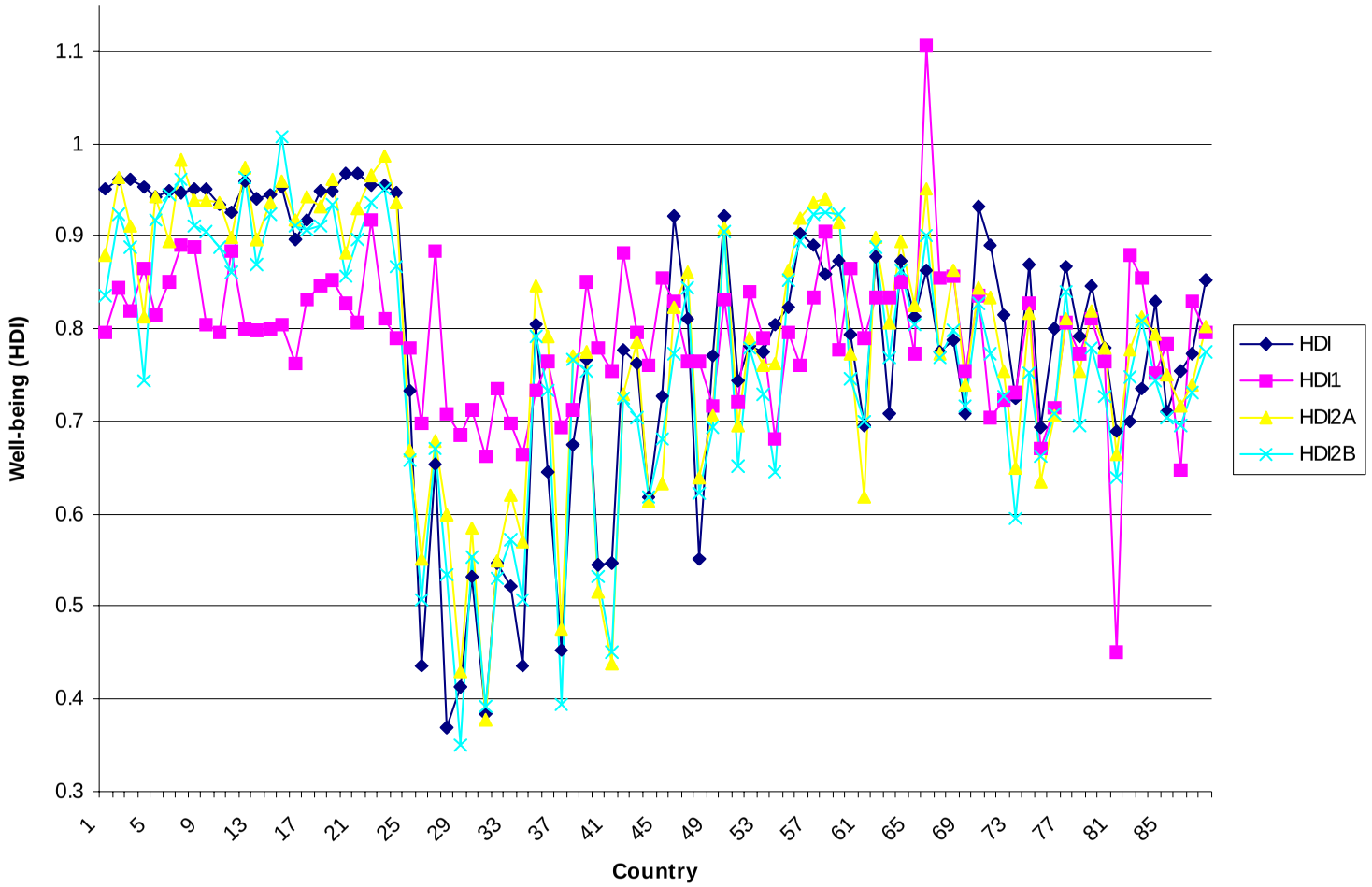
What do the results imply? A one percent increase in capital investment leads to about a three percent rise in HDI, implying the material conditions of nations are very important to their national well-being. A further policy implication of this finding is that in spite

[3]In previous studies I included regional dummies in (6), but the results were not informative enough to warrant doing so here.

Table 2 - National identity, globalization, and national well-being of 55 nations in 2007
(Parentheses t-ratios at 5% significance level)

Variable	Estimation 2.1	Estimation 2.2	Estimation 2.3	Estimation 2.4	Estimation 2.5	Estination 2.6	Estimation 2.7	Estimation 2.8
Conventional								
• Constant	-1.591 (-7.416)	-1.134 (-4.119)	-1.672 (-6.863)	1.209 (4.597)	-1.547 (-7.584)		-1.774 (-8.231)	-1.284 (-4.867)
• Capital (k)	0.029 (1.328)	0.029 (1.114)	0.029 (1.301)	0.001 (0.014)			0.027 (1.164)	0.027 (0.945)
• N-growth (n)	-0.003 (-2.546)	0.004 (-2.835)	0.003 (2.234)	-0.009 (-2.191)			-0.003 (-2.989)	-0.004 (-3.371)
National Identity								
• National color	-0.014 (0.982)	-0.017 (-1.225)		-0.102 (-2.975)	-0.012 (-0.833)	-0.015 (-1.025)		
• Constitution	-0.008 (-1.343)	-0.009 (-1.578)	-0.008 (-1.206)	-0.023 (-1.974)	-0.008 (-1.389)	-0.009 (-1.611)		
• No. of articles	-0.006 (-1.542)	-0.005 (-1.527)	-0.006 (-1.407)	-0.020 (-3.573)	-0.006 (-1.869)	-0.006 (-.895)		
Globalization								
• Average •	0.567 (12.466)		0.578 (11.587)		0.576 (12.061)		0.595 (13.105)	
• Economic		0.119 (1.251)				0.131 (1.384)		0.121 (1.218)
• Social		0.258 (5.585)				0.256 (5.314)		0.274 (5.415)
• Political		0.088 (2.393)				0.095 (2.5590		0.089 (2.065)
Summary Statistics								
• Adj. R2	0.7844	0.7847	0.7870	0.1846	0.7841	0.7809	0.7859	0.7854
• SEE	0.0555	0.0595	0.0592	0.1158	0.0596	0.06003	0.0593	0.0594
• DW	1.5224	1.3556	1.4886	0.8697	1.494	1.2946	1.5328	1.3538
[ρ]	[0.227]	[0.3121]	[0.2430]	[0.5639]	[0.2439]	[0.3451]	[0.2137]	[0.3055]

Figure 1- National well-being under varying scenarios - Comparative statics I



of the limitations of per capita GDP as a measure of well-being, investment in things is still good for national well-being.

National well-being is irresponsive (inelastic) to all measures of national identity. It is true that people normally get emotional about their flags. However, national colors are not a positive determinant of well-being. This makes common sense; the USA, for example, would not go to war because of Red, White, and Blue even though seeing the flag dishonored makes many people mad. One curious observation is that countries with more complex national color schemes generally rank low on HDI. I draw a blank on the economic rationale of this observation. National well-being is also inelastic with respect to the two constitutional identifiers of national identity. Particularly, the number of constitutional changes reduces national well-being. The more frequent the changes in the constitution, the lower HDI. This too is reasonable since too many changes imply instability. Moreover, the negative effect on well-being of the number of original articles of a constitution suggests insecurity insofar as large constitutions are most likely difficult to interpret. There are no scale advantages in this case; the large size of a constitution is an additional opportunity cost of business decisions. India has the largest constitution (395 articles). It is probably hard for businesses and individual persons there to understand their risks, and they are probably more likely to be risk averse when they do. The average size of a constitution in this group of countries is 12 articles (see Table 1), but I am not suggesting that countries with the smallest constitution, like the UK, have the highest HDI.

Aggregate globalization has the largest effect on national well-being: at the aggregate level a dollar increase in globalization adds no less than fifty-five cents to national well-being. Disaggregating globalization, sGlobe has the strongest effect on HDI, followed by eGlobe and pGlobe. By constrast, whereas in Estimation 2.4 globalization is zero, and HDI is a function of conventional factors and forces and national identity, in Estimations 2.5 and 2.6 I set labor and capital to zero so that HDI depends on national identity and globalization. National identity is taken to be zero in Estimations 2.7 and 2.8, and HDI is determined by conventional factors and forces and globalization. The findings are all comparable, which I take to mean the estimates are robust. However, Figure 1 shows discernible differences in the goodness-of-fit.[4] For example HDI2.2 and HDI2.3 have exaggerated spikes in their prediction of high HDI, but do remarkably well thereafter. HDI2.4 underestimates the high HDI and overestimates the middle. Only HDI2.1 gives the best fits overall.

5. Tentative concluding remarks

This paper estimates the effects on HDI of conventional factors and forces, national identity, and globalization. Using a simple production function transformation, I find that capital investment, the growth of labor, and exogenous technical shocks affect national well-being, with capital raising it, and labor growth and technical change lowering it. A policy implication is to improve all three.

National well-being is inelastic with respect to measures of national identity. I speculate (without evidence) that national well-being influences national identity more than the other

[4]For those interested in playing around with Figure 1, a Microsoft Excel *.xls copy is available as an email attachment upon request.

way around. While I am unable to recommend that countries spend less time and resources on promoting their national identities, I am concluding that countries gain more from globalization than from national uniqueness. For this group of countries most gains from globalization come from social globalization, but economic and political globalization are significant as well. These results must account for the fact that an obvious strength of the paper is also its weakness: the simplicity of the methods both theoretical and empirical. Yet this weakness also opens upon research possibilities.

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