

Economic Democracy

Emerging Determinants of Economic & Social Prosperity

Frank DiMeglio

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**Economic Democracy: Emerging Determinants of
Economic and Social Prosperity**

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Abstract

How a nation or region develops is infallibly linked to how well it can deliver ideas, information and data throughout its population. The greater the freedom to send, receive and synthesize information, the more likely a given country is to have a higher standard of living as measured by per capita income and other economic indicators. This study demonstrates that the economic development of a nation or region is connected to its ability to transport said intelligence in a highly expeditious and economic manner. Without this ability, technological development and the exchange / flow of ideas are intrinsically hampered and directly impacts economic development.

In order to demonstrate this thesis, nations were classified via their respective technology IQ's or information quotient. This IQ is ascertained by several info centric technological variables that drive the flow of information and the freedom of market development / interaction. The information quotient's interactive nature, demonstrated via its close association with business, educational and social development, earmarks it as a *refined* predictor of technology growth hence economic power. There are four major info centric determinants (variables) that make up a nation's technology IQ:

1. Teledensity (T_d) - the number of telephone lines (not phones) per 100 population.

Teledensity represents fundamental communications, which is essential for the distribution of wealth and ideas. It is a consumer building block – via the development

of markets and the creation of economic reach.

A telephone is useless unless connected to a network via a trunk. A trunk or service line can be explained as a portal to the outside world. Teledensity is not a metric of telephones but is a ratio of telephone stations to main lines.

2. Internet Density (I_d) – the number of Internet users divided by population times 100.

Remember, Internet users need access to the outside world via a phone line or other data link. By *definition*, Internet utilization / development *follows* telephony development.

This variable can be associated with increased business efficiency. It is a major factor to reducing costs within the business to business and e-commerce arena.

This thesis invokes that Internet usage vastly increases consumerism *outside* national / regional boundaries thus expanding avenues of opportunity for growth and wealth creation on a global scale.

3. Cable Density (C_d) can bring broadband (high speed) capability to large segments of the populace and business communities. (Especially, small to medium sized business concerns). Cable is the life line of high speed interactive, secure communications. Its potential to bring accelerated growth to communities is exponential. C_d is calculated by taking the number of households divided by population times 100. Still it is

important to issue a word of caution regarding cable density. In many less developed nations the cable infrastructure is old and used for one way CATV transmission. Upgrading to carry interactive voice and data could be prohibitive.

4. Finally, Wireless Density (W_d) represents number of cellular lines per 100 population. Unlike regular telephones, that can share a given line, each activated cellular phone, by definition, represents a line.

Wireless or un-tethered communications represents time and execution efficiency for *both* business and consumer segments. It can also provide fundamental communications for developing nations that do not have a regular telephone network. Cellular Density may be a strong indicator of quick start economic growth – but this remains to be seen. Cellular communication lacks speed, security, range and voice clarity.

Secure data mobility, in the future, can expand business efficiency and further reduce communication, travel and data content to utilization costs. It is the next step associated with interactive Internet utilization as businesses and consumers become increasing mobile and self sufficient producers.

When a nation has a higher relative level of Teledensity, Internet, Wireless and Cable density, it has a significant technological advantage. This advantage manifests itself by

multiplying the impact of information transfer via speed, depth and the interaction of new ideas. *So, if a nation's technology IQ is low, its' society is handicapped from advancing in other technological vectors and, in turn, its' economic development is slowed.*

In summary, the higher these info-centric variables are for a given nation or region, the greater the level of relative economic prosperity, pace of market / economic growth and corresponding standard of living. These indicators form the technological canopy under which an economic democracy can flourish.¹

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Chapter 1

Introduction

The boundary of man's mind is a never ending spectacle. What humans can know is constrained by their nature to find a solution. Still, from time to time, proclamations are daringly made regarding the end of science, the end of philosophy or the end of history – only to find out it wasn't the end after all.

This is not to say that the pursuit of knowledge is not stimulated by such thought. On the contrary, it is because of such searches for simplicity that beauty, truth and future knowledge evolves.

Frances Fukuyama in his work "The End of History and The Last Man" states that the human enterprise has found the optimal solution in liberal democracy. Citing grand victories over tyranny in Europe and Asia during World War II and the collapse of communism in the 1990's, Fukuyama, while realizing that democracy has yet to be optimized, is the end of history from a governance evolutionary perspective.

For Fukuyama the ability of technology to better human life "is critically dependent on a parallel moral progress in man. Without the later, the power of technology will simply be turned to evil purposes, and mankind will be worse off than it was previously. The total

wars of the twentieth century would not have been possible without the basic advances of the Industrial Revolution: iron, steel, the internal combustion engine, and the airplane. And since Hiroshima, mankind has lived under the shadow of the most terrible technological advance of all, that of nuclear weapons. The fantastic economic growth made possible by modern science had a dark side, for it has led to severe environmental damage to many parts of the planet, and raised the possibility of an eventual global ecological catastrophe. If television and instant global communications had existed in the 1930's, they would have been used to great effects by Nazi propagandists like Leni Riefenstahl and Joseph Gebbels to promote fascist rather than democratic ideals.”²

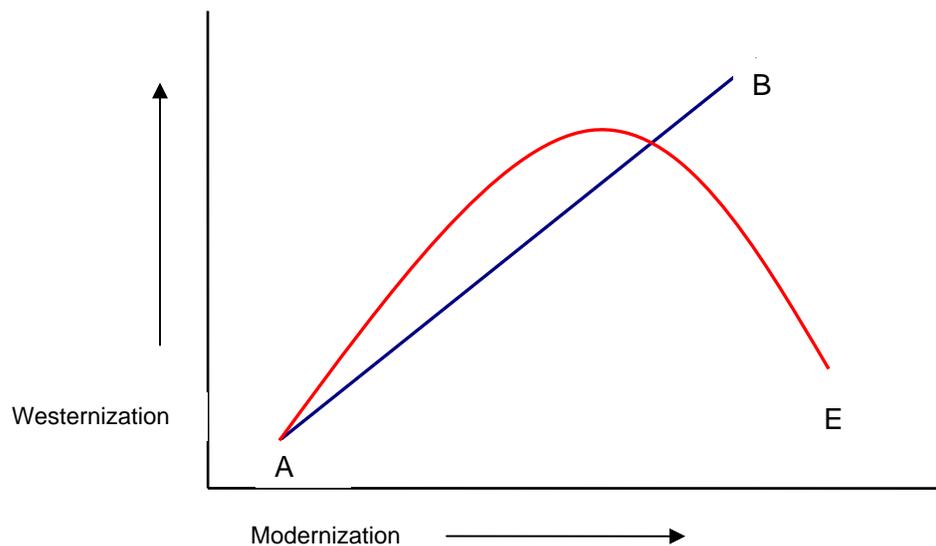
The keys are Western values as a global culture emerges. While technology is important, it is the capitalist social relation (i.e. liberal democracy) that is necessary to sustain human progress.

On the end of the spectrum we have Samuel Huntington's “The Clash of Civilizations and the Remaking of World Order.” Huntington sees the balance of power among civilizations shifting. “The West's universalist pretensions increasingly bring it into conflict with other civilizations, most seriously with Islam and China; at the local level fault line wars, largely between Muslims and non-Muslims, generating kin-country rallying, the threat of broader escalation, and hence efforts by core states to halt these wars.”³

Cultural communities are replacing the worlds artificially brought together by the colonial powers, the former Soviet Union, and other nations. What is important is that

civilizations share cultural affinities – *not* technology or ideologies.

There is no such thing as a universal civilization and modernization does not necessarily equate to westernization or democratizing. There are alternative responses to the impact of the west – and these are often driven by a need to resurrect ethnicity, religion and other dimensions of culture. In the following diagram Huntington sees the world moving from point A to E as opposed to point A to B.⁴



Huntington is describing that *all* cultures desire modernization, if not for only weapon systems. Modernization is *not* necessarily a function of liberal democracy or westernization.

Just a few years ago there was almost no doubt or uncertainty concerning the future of social progress. The Berlin Wall was gone and the Soviet Union dissolved. But just like the great dot.com bubble burst of 2001 we are now placed in the midst of doubt and uneasiness concerning the future.

What fundamentally drives progress, peace, world order and social well being? *What energizes their antithesis?* Are there influencing factors that have not been adequately addressed or improperly categorized by the economic and social theories of the past?

The Objective of this Study:

The objective of this study is to discover emerging global determinants of economic and social *prosperity hidden within the technological spectrum of human communication.* Special attention will be given to recent technological innovations regarding how information and knowledge are merged, synthesized, transferred and absorbed within and around people and nations.

Knowledge, ideas, methods of problem solving and such that are restrained by means of technology or lack thereof, is of critical importance in terms of economic and social advancement. Without the free flow and exchange of diverse ideas, civilization will be trapped in a loop of ethnic, national and religious destruction. *In sum, the widening digital divide is one of humanity's greatest threats. These digital divides entomb people and cultures within themselves. It is a social solitary confinement that breeds not only resentment but brews radical social unrest and violence.*

This effort will demonstrate how technology is not merely a *residual* of social and economic development – *but rather a central component and predictor of stability and growth.*

Furthermore, technology can not be measured by the number of autos, TVs, level of consumerism or weapon systems in a given culture. These metrics of outputs are obsolete and skew true economic integrative potential. *In fact, it is a nation's ability to merge information, data, and problem solving techniques that will determine their growth and survivability in the future.*

To sum, technology will be the arbiter of social equality or the harbinger of the world's demise – it will be up to us to coax its' better nature.

Plan of Analysis:

I have parsed out for examination those aspects of knowledge transfer techniques that can make a fundamental difference in terms of economic productivity and freedom of information flows. They are divided into technical and non-technical elements as follows:

Technical Elements:

Teledensity (T_d) – the capability of voice, fax and low speed data transfer within a nation, measured by the number of main lines supporting a given population. It is, in laymen

terms, the ability for one person to call another within an instant. $T_d = \text{No of main lines} / \text{Population} * 100$.

Internet Density (I_d) – is the ability of a given population to access a device (computer or otherwise) to gather, exchange or build information, conduct business or provide any other form of social correspondence. It is almost an instantaneous written, pictorial, video and / or voice communication. $I_d = \text{Internet Users} / \text{Population} * 100$.

Cable Density (C_d) - is the transport of both CATV and Internet access into a place of residence or business via coax cable. C_d is earmarked by high speed transaction capacity which is central to business development and interactive consumer communication. However, much of this coax cable, while having the potential to transport interactive data, is often used for simple one way CATV transmission – especially in developing nations. $C_d = \text{Cable Subscribers} / \text{Households} * 100$.

Wireless Density (W_d) – is the un-tethered variance of voice and data communications. It expands the mobility and flexibility of information and the labor resource. Wireless can be characterized with the following attributes today.

1. Wireless communication, from a data perspective, is unreliable but a powerful emerging option.
2. It is relatively unsecured and thus not suitable for business transactions, still photos and other pictorial data is beginning to emerge as an important productivity application.

3. The overall quality of voice service is substandard to wire line. This is because radio transmission, by its very nature, is less reliable than wire line transmission. Dead zones are not uncommon and during natural and man made emergencies wireless is still highly unreliable.
4. It can be a jump start for developing nations in need of base voice communication.

$$W_d = \text{Wireless Subscribers} / \text{Population} * 100.$$

All the data for T_d , I_d , C_d and W_d are for the year 2002 and were sourced from the ITU's database titled "World Telecommunications Indicators 2004, 7th edition, ITU. Data, when used for other year's analysis and formulas, was also drawn from the same ITU Db.

Non Technical:

Index of Freedom (IOF) - A measurement of social, governmental and commercial freedom as provided by the Heritage Foundation's Index of Freedom published on an annual basis.

This work demonstrates the relationship between said technical and non technical factors with economic development as measured by absolute per capita income in current US dollars. GDP per capita income was sourced from The World Bank's latest figures.

Particular attention has been given to the growing gap between national incomes. It is believed that this gap is, in large part, a function of a nation's IQ (Information Quotient). This quotient is the sum of national T_d , I_d , C_d and W_d . This can be seen particularly when we compare developed nations to developing or less developed countries.

Questions are answered as to whether freedom of information transfer plays a role in the economic advancement of societies and what the impact of the digital divide is. If the divide, which is technologically driven, is great, can this be the key factor causing a clash in civilizations?

Methodology:

First, an understanding of traditional growth theory is discussed. The Harrod-Domar model suggests that an economy's rate of growth depends on the level of savings and the productivity of investment. Given the backdrop of its shortcomings, the neoclassical model and Solow's works are then discussed.

The neoclassical growth model is a macro model in which the long run growth rate of output per worker is determined by an *exogenous* rate of technological progress.

Technology, in the Cobb-Douglas production function form describes growth in the following equation: $Y = F(K, L) = A K^a L^b$

Or

$$GDP = F(K, L) = AK^a L^b$$

Where:

Y = Income (or GDP)

K = Capital

L = Labor

A = Technology

F denotes a function; and a and b are positive parameters.

While this equation treats A (technology) as a *residual*, this thesis will demonstrate A to be a central factor in predicting long term growth. Thus GDP per capita = F (T_d, I_d, C_d, W_d). This would render our hypothesis equation to be:

$$GDP = f (T_d, I_d, C_d, W_d) \dots\dots\dots \text{Equation 1 Hypothesis}$$

Where:

GDP is per capita GDP (in absolute current US dollars)

T_d is Teledensity: (The number of main telephone lines per 100 inhabitants)

I_d is Internet density: (Internet users divided by population times 100)

C_d is Cable density: (The number of cable subscribers divided by households times 100)

W_d is Wireless density: (The number of wireless subscribers divided by population times 100)

This study utilized over one hundred nations representing over 80% of the world's population and over 90% of global GDP. All data was collected and analyzed from published resources known in the literature. A small subset of the nations used is listed on page 16. Nations were categorized into a spectrum of income and development as devised below:

General Economic Democracy Summary Table for Analysis

Type of Nation	GDP per Capita (ABSOLUTE)	Logic
Developed	Greater than \$13,500 per capita	More than two thirds greater than the world average
Developing or Less Developed	Less than \$13,500 per capita	Less than two thirds greater than the world average
World Average	\$7,900	

Source: The CIA World Fact Book, 2003

All 2002 Data

Nation	Td	ld	Cd	Wd	lof	GPD per Capita PPP
US	64.58	55.14	67.45	48.81	1.8	\$ 36,300
Norway	73.44	50.26	42.41	84.36	2.45	\$ 33,000
Switzerland	74.42	35.10	90.25	78.93	1.90	\$ 32,000
Ireland	50.24	27.09	42.32	76.32	1.80	\$ 29,300
Belgium	49.44	32.83	89.84	78.56	2.10	\$ 29,200
Japan	55.83	44.89	48.50	63.65	2.45	\$ 28,700
Austria	48.88	43.27	32.27	78.62	2.10	\$ 27,900
Hong Kong	56.47	43.01	28.50	94.25	1.35	\$ 27,200
Netherlands	61.77	50.63	92.32	74.47	1.80	\$ 27,200
Australia	53.86	48.17	20.03	63.98	1.85	\$ 26,900
Germany	65.09	41.19	53.28	72.75	2.1	\$ 26,200
France	56.89	31.38	13.92	64.70	2.70	\$ 26,000
Sweden	73.57	57.31	50.93	88.89	2.05	\$ 26,000
Finland	52.35	50.89	43.83	86.74	1.95	\$ 25,800
United Kingdom	59.06	42.31	13.64	84.07	1.85	\$ 25,500
Singapore	46.29	50.44	35.16	79.56	1.55	\$ 25,200
Italy	47.50	35.24	0.75	93.87	2.35	\$ 25,100
Spain	50.62	15.63	5.85	82.42	2.30	\$ 21,200
Qatar	28.60	11.34	77.51	43.29	2.95	\$ 20,100
Israel	45.30	30.14	65.79	95.45	1.80	\$ 19,600
Taiwan	58.17	38.14	67.03	100.00	2.35	\$ 18,000
Malta	52.34	30.30	72.05	69.91	2.70	\$ 17,200
Hungary	36.12	15.76	42.08	67.60	2.40	\$ 13,300
Slovak Republic	26.82	16.05	40.72	54.36	2.90	\$ 12,400
Chile	23.04	23.75	20.87	42.83	1.85	\$ 10,100
Poland	30.75	23.00	26.88	36.26	2.70	\$ 9,700
Russia	24.22	4.09	12.30	12.01	3.70	\$ 9,700
Mexico	14.67	9.85	10.05	25.45	2.90	\$ 8,900
Lithuania	27.03	14.44	19.16	47.53	2.35	\$ 8,400
Brazil	22.32	8.22	5.16	20.06	3.10	\$ 7,600
Turkey	28.12	7.28	6.44	34.75	3.35	\$ 7,300
Thailand	10.50	7.76	5.03	26.04	2.40	\$ 7,000
Bulgaria	36.77	8.08	25.04	33.30	3.40	\$ 6,500
Venezuela	11.27	5.05	17.66	25.64	3.65	\$ 5,400
China	16.69	4.60	27.72	16.09	3.55	\$ 4,700
Philippines	4.17	4.40	18.41	19.13	2.95	\$ 4,600
Albania	7.14	0.39	0.96	27.63	3.3	\$ 4,400
Ecuador	11.02	4.16	15.22	12.06	3.91	\$ 3,200
India	3.98	1.59	12.57	1.22	3.55	\$ 2,600

lof = Index of Freedom.

A multiple regression analysis was performed to test the validity of: $GDP = f(T_d, I_d, C_d, W_d)$.

Summary of Major Findings: .

Both the Harrod-Domar and Solow's work (The Neoclassical Models) regard technology as a *residual* component of economic growth. Residuals are not so significant and are typically influenced by exogenous events.

However, the findings of this study indicate that things have radically changed. The residual of technology, as depicted in this thesis, has moved to the forefront of political and economic dynamics. In fact, the independent variables T_d , I_d , W_d and C_d explain almost 85% of the dependent variable GDP.

The greatest impact was bunched with T_d , I_d , and W_d (all with an adjusted R2 of approximately .84). Cable density (C_d) has significantly less impact.

Technology is driven by information, human corroboration, accessibility to knowledge and, most importantly, *timely interaction*. *Nations and regions that are awash in freedom and access of information demonstrate strong economic power, deep social tolerance and liberal democratic ideals.*