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Passwords to Knowledge and Income Inequality:

Major Issues to be addressed in the New Age Economy

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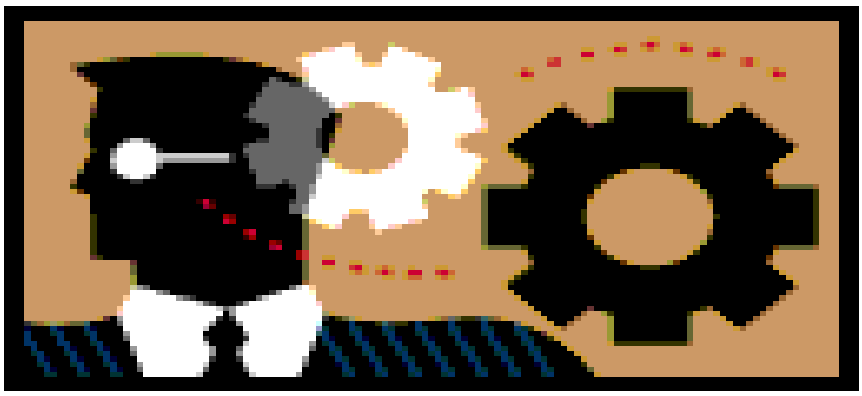

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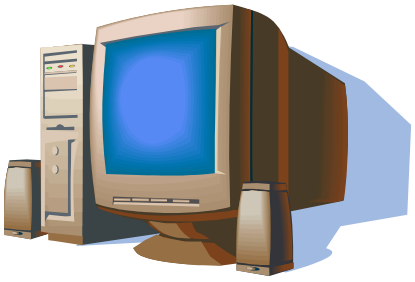

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Major Issues to be addressed in the New Age Economy

In this paper we attempt to link the growing rise of income and wealth inequality to what is referred to as the uneven "access to knowledge" across income classes. We begin the analysis by defining and enumerating the challenges we face in today's economy(ies); that is, what is referred to as the New Age Economy (NAE). And we further attempt to explain how the seeds to the major economic issue that we face here and abroad; that is the growing steep trend of income and wealth inequality; are "seeds" that can be better replanted (through more effective discretionary public policy) by simply retooling the existing institutional design of public education so that, across all income classes, the greater population can be better equipped to solve the challenges they face in this new age economy.

Passwords to Knowledge and Income Inequality:
Major Issues to be addressed in the New Age Economy

by L. A. Huff, PhD

INTRODUCTION

We live in a world where we can't differentiate the forest from the trees. Microeconomic behavior can immediately impact on the macroeconomic terrain. That is, in today's world of mass communications and popular use of computers (and related technologies, such as smart phones), what is done and perceived as an isolated individual event can easily and swiftly become a greater community wide known event with dramatic impact beyond the immediacy of the original individual(s) involved. An economic event transacted by some enterprising person can very quickly become a global macroeconomic impactful event. The speed that an individual occurrence can manifest itself on a macroeconomic terrain differentiates today's world experiences from past eras. And in light of the characteristics manifested in this new age economy, we examine the growing link between the uneven income distribution across income classes (that is low income classes and growing poverty levels versus high income classes and the resultant growing concentration of income and wealth) to the uneven distribution of human capital; manifested in the greater community condition as to who have access to (and knowledge of) the super-information highway and who are stranded on the road sideways broken down and unable to compete (or keep up).

In this paper we attempt to link this growing rise of income and wealth inequality to what we shall call, the uneven "access to knowledge". And we further contend that the seeds to the major economic issue that we face here and abroad; that is the growing steep trend of

income and wealth inequality; are "seeds" that can be better replanted (through more effective discretionary public policy) by simply retooling the existing institutional design of public education so that, across all income classes, the greater population can be better equipped to solve the challenges they face in this new age economy.

Economic Characteristics of the New Age Economy

In today's world, private moments of celebrities' behavior can quickly become immediately communicated globally with dynamic consequences. You need to go no further than observing the growing number of reality shows, computer generated videos, and other mass communications' events; and, in turn observe how large audiences (the masses) are impacted by them. Look at; and not under appreciating the significance of his presidency; the cases whereby Donald Trump's (in some cases, personal private moments) have "next day" immediate global political consequences. And these next day and immediate consequences are accelerated by the mass communication technologies popularly available (literally to all). Even with much less known individuals, groups, and artificial entities (corporations) then Donald Trump; private moments and singularly implemented economic events can have dynamic consequences quite significantly beyond the consequences to those immediately involved (A sick twist to this point is Syria's President Assad's recent explanation that news allegations of torture and mass hangings in his country are the product of "a fake news era" Yahoo: 02-10-217)). And look no further then how, in many cases, private banks' decisions have major consequences to the collective body of people worldwide. That is, a singular event that can have consequences even more

impactful than purposeful federal, national and international discretionary public policy decisions implemented by public officials.

The impact of singular events on the bigger picture is not unique. What is unique is the accelerated process of this movement from an event's impact quickly impacting the wider community. This acceleration process is engineered by the existence of what we shall refer to as the current worldwide experience of the New Age Economy (NAE).

In today's NAE world of people and things, there are many benefits emanating from the NAE. But the NAE also is fuelling significant downside results: uneven distribution of usable knowledge, a growing concentration of income and wealth, and a lack of effective decision making strategically networked in support of the greater good (versus an effective decision making strategically networked system in support of infinitely small subsets of individuals, groups, and artificial entities (corporations)).

In my book, The Age of the Quickening (see <5> 2009), we introduced an applicable political economy analysis and explanation of the economic behavior and outcomes demonstrated in today's New Age Economy (NAE). The NAE is increasingly composed of nonspatial and/or spaceless market events. The massive amounts of decision making by individuals, groups, and artificial entities (such as corporations) are being done within computer and digital based environments. These computer and digital based environments are indeed today's market normalcy.

The rise of more and more economic events taking place during the current era of the NAE in nonspatial and/or spaceless market places have been era defining; redefining what

we call the "market" place. In the context of attempting to describe the economic processes of production, consumption and distribution; from a human economic centric perspective; this age of the quickening and acceleration of, for example, computer based transactions; have greatly restricted conventional spatial oriented economics (what is where and why…) explanatory powers because they lack economic tools that can help us better understand the economic pulse of today's world. The simple equations of maximizing profits and minimizing cost human economic behavior modalities did tend to help explain a previous less complicated world. But the dynamics of human economic behavior modalities manifested in the NAE challenges conventional economic reasoning.

It is our contention made here that ultimate successes and failures towards carrying out the following tasks ultimately seals ones economic status in the era of the NAE; that is, (1) information processing by participants in the NAE can be characterized as the pursuit of knowledge (or "passwords to usable knowledge"); (2) wealth accumulation results oriented activities, or "distribution of the economic pie" share; and, (3) the establishment of a dynamic human resource decision making mechanism(s) designed in light of the economic character of the NAE. Put in another way, the pursuit of carrying out the tasks of (1) information processing, (2) wealth accumulation planning, and (3) overall decision making in support of economic choices define the fundamental challenges faced by participants in today's world of the NAE. The simple challenge of how do you que out unlimited needs and wants (ends); and use limited resources (means) to achieve economic goals takes on a whole new dynamic meaning. This fundamental challenge takes on a new dynamic meaning when the setting includes, for example, an enterprising person sitting in front of his/her computer and is exploring his/her economic imagination. Such a scenario is beyond the conventional challenges of limited resources versus unlimited uses. In "thinking outside the box", let's characterize this enterprising person's fundamental challenge as poetically captured in the statement, "…imagination and intellect are positively correlated; the greater the imagination, the greater the intellect (but bounded by adult imagination and a healthy dose of logic; which separates it from pure childish fantasy)….". Strategic networking, opportunity shopping, information sharing and use, etc. are part of key words

(and activities) that explain market place tools that are critical to success in the NAE for this computer using and information processing enterprising person.

In the NAE manual human efforts is taking a second seat to human tangible and nontangible efforts dedicated to achieving internet based economic activity benefits. Human activity and decision making that impact upon economic outcomes as to who gets what is being determined by complex labyrinths of information sharing and use. And individuals, groups, and artificial entities (such as corporations) use of computer technologies is determining; by means of "passwords to knowledge"; who gets what; and literally, who eats well and who eats less. These "passwords to knowledge" facilitate the quantity and quality of information processing and knowledge acquisition. For example, a new corporate employee might receive digital keys ("passwords to knowledge") so as to make more focused information processing and knowledge acquisition by means of directing a strategic migration through internet and website visits (and use). In turn, the cumulative effects of the aggregation of corporate employees' use of these digital keys to information and knowledge access provides the corporate culture with a comparative advantage with respect to corporate wealth creation tasks. And when we seek factors fuelling the worldwide issue of growing income inequality and wealth, we might get some answers as to who has and who does not have "passwords to knowledge" . We see more and more people parked and broken down on the side of the super information highway with no digital vehicle keys allowing them to drive via "passwords to knowledge" .

Labour markets, final goods and services markets, resource markets, markets et al are increasingly more digitally dependent as to accessing them. Other than a very few primitive cultures and/or communities; including those communities purposefully choosing not to participate in significant aspects of the modern economic computer oriented world; most existing and operating economies and sub-economies have economic success and/or failure being increasingly determined by information processing efficiencies. The degree of efficiencies (or inefficiencies) is dependent upon to what extent the act of processing information turns into effective usable (and/or exchange value) knowledge. And, from an economist's point of view; benchmarked by the global trend and popular use of the

computer; these processing information efficiencies, exhibited by today's economy(ies)' role players, ultimately has led to a quickening and accelerated rate of transaction closing events (vis-à-vis Age of the Quickening). Many are left behind from this world of information superhighways to the more inferior unpaved information dirt roads. Fortunately, popular use of mass communication amenities of the computer and internet has lessen the gap of information exclusivity. But the further problem of sorting a world of virtually an unlimited mass of information, those who don't have the "passwords to knowledge" are caught in a significant competitive disadvantage.

In this age of the quickening of transaction event occurrences, economic power is rewarded to institutional arrangements in our society that control the quantity and quality of the resultant dynamic economic processes of production, consumption, and distribution outcomes. The results of these economic processes can be easily found by tracing the money and economic resource flows. The great questions of what to produce, how to produce it, and for whom it is being produced for, are being answered by an increasingly few representatives of our world economies. Those who have access to the "passwords to knowledge" are in a far better position to determine (and get paid for) the answers to these great questions. And statistics suggest that we are trending away from the greater participation of the world population towards a shrinking population set of the few of individuals, groups, and artificial entities who have effective and efficient "passwords to knowledge". The empirical manifestation of this economic trend and condition can be characterized quite simply by asking the rhetorical question of, "Who have the most dollar votes (market power)?".

Empirical Evidence of the Dichotomy between the Have and Have Nots

The trends manifested in the U.S. distribution of income are discouraging. For example, nearly five decades ago the top twenty percent (20%) income earners in the U.S. received a little over forty-three (43%) of all income earned. And since then, this same one fifth of all income earners received much more then half of all income earned. While during this same period of time, the lower twenty percent (20%) of the U.S. population income earning group never approached receiving a minimum of at least five percent (5%) of the National Income "pie"; a negative income distribution trend that has accelerated in recent times.

With respect to this issue of income and wealth distribution, the U.S. government defines a poor household as one with a total income less than the amount required to satisfy the "minimum needs" of the household. And a household with income lower than the official poverty budget level is considered poor. In 2009, about 44 million people in the U.S, were below the poverty line, or 14.3 per cent of the population. And given the assumption made that African Americans as a group have less "passwords to knowledge" access then most other groups, poverty rates for the following characteristics amplify their economic challenge,

Characteristics	Poverty Rate in 2009
All Races	14.3 %
African American	25.8 %
Married Couples	5.8 %
Female-Headed Households	29.9 %
Under 18 Years of Age	20.7 %
65 Years of Age and Older	8.9 %

SOURCE: U.S. Census Bureau. Current Population Reports: Income, Poverty, and Health Insurance Coverage in the United States, Report P60-238 (September 2010)

The U.S. Census Bureau's publication, Current Population Survey (CPS), provides statistical detail of people in poverty, sorted by various characteristics. Given CPS's various categories, the data indicated that we are approaching nearly fifty million Americans below the poverty line; of which, twenty (20) percent "below the poverty line" were African Americans (while African Americans composed 13 per cent of the total U.S.

population (2014). And the CPS statistical detail further indicates that between the years 2013/14, the only two groups that increased their per cent of poverty by at least one per cent or more were: (1) African Americans, and, (2) people who did not work at least one week for the entire year

The growing income inequality and extent of poverty manifested between African American vis-à-vis the rest of the U.S. economy is not atypical to negative income and wealth distribution trends exhibited across the national plane and the global terrain. That is, when we assess issues related to general economic statuses (holding race constant) by empirical figures that measure (production, consumption, and distribution) economic processes; whether on a national and world view; distribution (of income and wealth) represents the most important economic issue that needs to be addressed. Let's examine the empirical evidence

Recent available data published by the CPS indicate that the richest 5 percent of U.S. households had an average income 13 times higher than the poorest 20 percent of household. [1.] And such uneven income distribution, as this measure suggests, across the population plane is further fueled by a long term negative trend exhibited in uneven income growth across income category classes. For example, between 1979 and 2007, the top 1 percent of U.S. households took home well over half (53.9 percent) of the total increase in U.S. income. Over this same period, the average income of the bottom 99 percent of U.S. taxpayers grew by 18.9 percent. Simultaneously, the average income of the top 1 percent grew over 10 times as much—by 200.5 percent! And since 2009, income growth has been dramatically lopsided, with the top 1 percent capturing an alarming share of economic growth. University of California at Berkeley economist Emmanuel Saez estimated that between 2009 and 2012, the top 1 percent captured 95 percent of total income growth! [2.]

To date, much attention by economist and policy makers have been given to long-term unemployment and the human cost of joblessness. But, until recently, inequality had only received tangential mentions. Yet, such statistical facts, such as, from 2007–2014

households at the bottom of the income distribution experienced larger and larger relative income declines:

Cumulative percent change in average annual household income, by income group, 2007–2014:

	Lowest fifth	Second fifth	Third fifth	Fourth fifth	Top 5 percent
2007	0.0%	0.0%	0.0%	0.0%	0.0%
2008	-2.8%	-3.5%	-3.4%	-2.9%	-1.2%
2009	-3.3%	-4.0%	-4.2%	-3.9%	-0.6%
2010	-9.5%	-7.8%	-6.4%	-5.2%	-4.9%
2011	-10.3%	-8.6%	-8.1%	-6.7%	0.0%
2012	-10.2%	-8.9%	-7.5%	-6.3%	0.0%
2013	-10.2%	-7.8%	-6.8%	-6.0%	-0.1%
2014	-11.0%	-8.4%	-7.8%	-6.1%	-2.3%

Source: EPI analysis of Current Population Survey Annual Social and Economic Supplement family income data

In an address made by Chairman of the Board of Governors of the Federal Reserve System, Janet L. Yellen (<2> (2014)), she indicated that the past several decades have seen the most sustained rise in inequality since the 19th century. She further indicated that the past few decades of widening inequality can be summed up as significant income and wealth gains for those at the very top and stagnant living standards for the majority. And she further suggested that these negative trends are greatly challenging our traditionally placed value of equality of opportunity for all citizens,

"…Some degree of inequality in income and wealth, of course, would occur even with completely equal opportunity because variations in effort, skill, and luck will produce variations in outcomes. Indeed, some variation in outcomes arguably contributes to economic growth because it creates incentives to work hard, get an education, save, invest, and undertake risk. However, to the extent that opportunity itself is enhanced by access to economic resources, inequality of outcomes can exacerbate inequality of opportunity,

thereby perpetuating a trend of increasing inequality. Such a link is suggested by the "Great Gatsby Curve," the finding that, among advanced economies, greater income inequality is associated with diminished intergenerational mobility… in such circumstances, society faces difficult questions of how best to fairly and justly promote equal opportunity…." [3.]

And summarizing from figures derived from the Federal Reserve's triennial Survey of Consumer Finances (SCF (2013))) Chairman Yellen demonstrated that:

1. **After adjusting for inflation, the average income of the top 5 percent of households grew by 38 percent from 1989 to 2013; and by comparison, the average real income of the other 95 percent of households grew less than 10 percent. And the distribution of wealth is even more unequal than that of income, and the SCF shows that wealth inequality has increased more than income inequality since 1989.**
2. **The lower half of households by wealth held just 3 percent of wealth in 1989 and only 1 percent in 2013. About one-fourth of these families reported zero wealth or negative net worth, and a significant fraction of those said they were "underwater" on their home mortgages, owing more than the value of the home.… meanwhile, the average real wealth of families in the top 5 percent has nearly doubled,**
3. **In terms of financial assets, including stocks, bonds, mutual funds, and private pension…the wealthiest 5 percent of households held nearly two-thirds of all such assets in 2013, the next 45 percent of families held about one-third, and the bottom half of households, just 2 percent.**

The Rising Trend in Income and Wealth Inequality is a Global Issue

The Gini coefficient (sometimes expressed as a Gini ratio or a normalized Gini index) is a measure of statistical dispersion intended to represent the income or wealth distribution of a nation's residents, and is the most commonly used measure of inequality. It was developed by the Italian statistician and sociologist Corrado Gini and published in his 1912 paper Variability and Mutability (Italian: Variabilità e mutabilità). The Gini coefficient measures the inequality among values of a frequency distribution (for example, levels of income). A Gini coefficient of zero expresses perfect equality, where all values are the same (for example, where everyone has the same income). A Gini coefficient of 1 (or 100%) expresses maximal inequality among values (e.g., for a large number of people, where only one person has all the income or consumption, and all others have none, the Gini coefficient will be very nearly one. [4. 5. 6].

Table 1.0

GINI COEFFICIENTS FOR OECD COUNTRIES :

HOUSEHOLD MARKET INCOME (PRE-TAX AND TRANSFER INCOME)

Country	Gini Coefficient ($GINI_{HMI}$):			
	Mid-1990s	2000	Mid-2000	2010
Australia	0.467	0.476	0.465	0.469
Austria			0.464	0,479
Belgium			0.482	0.478
Canada	0.430	0.440	0.436	0.447
Czech Republic	0.442	0.472	0.461	0.449
Denmark	0.417	0.416	0.416	0.429
Estonia			0.485	0.487
Finland	0.479	0.478	0.483	0.479
France	0.473	0.490	0.485	0.505
Germany	0.459	0.471	0.499	0.492
Greece			0.471	0.522
Hungary				
Iceland			0.373	0.393
Israel	0.494	0.504	0.513	0.501
Italy	0.465	0.472	0.510	0.503
Japan	0.403	0.432	0.462	0.488
Luxembourg			0.467	0.464
Netherland	0.484	0.424	0.426	0.424
New Zealand	0.488	0.484		0.454
Norway	0.404	0.426	0.447	0.423
Poland			0.521	0.468
Portugal			0.498	0.522
Slovak Republic			0.462	0.437
Slovenia			0.448	0.453
South Korea			0.330	0.342
Spain			0.463	0.507
Sweden	0.438	0.446	0.432	0.441
Switzerland				0.372
Turkey				
United Kingdom	0.507	0.512	0.503	0.523
United States	0.477	0.476	0.486	0.499
Russian Federation				0.486

Source: Institute for Research on Poverty (IRP), Discussion Paper No,1419-14, pp 67-8

TABLE 1.1

GINI COEFFICIENTS FOR OECD COUNTRIES :

DISPOSABLE HOUSEHOLD INCOME (POST-TAX AND TRANSFER INCOME-DHI)

Country	Gini Coefficient($GINI_{DHI}$):			
	Mid-1990s	2000	Mid-2000	2010
Australia	0.309	0.317	0.315	0.334
Austria			0.260	0.267
Belgium			0.269	0.262
Canada	0.289	0.318	0.317	0.320
Czech Republic	0.257	0.260	0.259	0.256
Denmark	0.215	0.227	0.232	0.252
Estonia			0.337	0.319
Finland	0.218	0.247	0.254	0.260
France	0.277	0.287	0.288	0.303
Germany	0.266	0.264	0.285	0.286
Greece	0.345	0.354	0.340	0.337
Hungary	0,294	0.293	0.291	0.272
Iceland			0.269	0.244
Israel	0.338	0.347	0.378	0.376
Italy	0.326	0.321	0.330	0.319
Japan	0.323	0.337	0.329	0.336
Luxembourg	0.259	0.261	0.277	0.270
Netherland	0.297	0.292	0.284	0.288
New Zealand	0.335	0.339	0.335	0.317
Norway	0.243	0.261	0.276	0.249
Poland			0.326	0.305
Portugal			0.373	0.344
Slovak Republic			0.275	0.261
Slovenia			0.245	0.246
South Korea			0.306	0.311
Spain			0.324	0.338
Sweden	0.211	0.243	0.234	0.269
Switzerland				0.298
Turkey	0.490		0.430	0.411
United Kingdom	0.337	0.352	0.335	0.341
United States	0.361	0.357	0.380	0.380
Russian Federation				0.428

Source: Institute for Research on Poverty (IRP), Discussion Paper No,1419-14, pp 67-8

TABLE 1.3

Comparing Household Market Income (HMI) and Disposable Household Income (DHI):

Reduction in Gini Due to Taxes and Transfers for OECD Countries :

Country	GINI $_{ADJ}$: [1.]			
	Mid-1990s	2000	Mid-2000	2010
Australia	0.158	0.159	0.150	0.135
Austria			0.204	0.212
Belgium			0.213	0.216
Canada	0.141	0.122	0.119	0.127
Czech Republic	0.185	0.212	0.202	0.193
Denmark	0.202	0.189	0.184	0.177
Estonia			0.148	0.168
Finland	0.261	0.231	0.229	0.219
France	0.196	0.203	0.197	0.202
Germany	0.193	0.207	0.214	0.206
Greece			0.131	0.185
Hungary				
Iceland			0.104	0.149
Israel	0.156	0.157	0.135	0.125
Italy	0.139	0.151	0.180	0.184
Japan	0.080	0.095	0.133	0.152
Luxembourg			0.190	0.194
Netherland	0.187	0.132	0.142	0.136
New Zealand	0.153	0.145		0.137
Norway	0.161	0.165	0.171	0.174
Poland			0.195	0.163
Portugal			0.125	0.178
Slovak Republic			0.187	0.176
Slovenia			0.203	0.207
South Korea			0.024	0.031
Spain			0.139	0.169
Sweden	0.227	0.203	0.198	0.172
Switzerland				0.074
Turkey	0.490			
United Kingdom	0.171	0.160	0.168	0.182
United States	0.116	0.119	0.106	0.119
Russian Federation				0.058

Source: Institute for Research on Poverty (IRP), Discussion Paper No,1419-14, pp 67-8

[1.] GINI $_{HMI}$ less GINI $_{DHI}$ equals GINI $_{ADJ}$: Table 1.0 & Table 1.1

Table 1.0, 1.1 and 1.3 provide three types of Gini coefficient measures estimated from the mid – 1990 until 2010. Table 1.0 provides estimates of the Gini coefficient ($GINI_{HMI}$) using Household Market Income for each OECD country. This type of income reflects earnings prior to the respective governments' adjustments made through automatic and discretionary policy considerations. The set of $GINI_{HMI}$ suggests that the overwhelming majority of country's $GINI_{HMI}$ are indeed trending higher over time (mid-1990 to 2010); except for some few exceptions. These few exceptions don't reverse the obvious trend towards higher levels of worldwide income inequality.

Table 1.1 provides estimates of the Gini coefficient ($GINI_{DHI}$) using Disposable Household Income. This type of income reflects the impact of government policy on income received and its respective impact on income inequality. Across the set of OCD countries ($GINI_{DHI}$)'s reflect lower Gini coefficients for each year(s) measured; and in turn, reflection of some success in adjusting income inequality. But, for the most part, the trend of higher income inequality across the world terrain continues. Yes, lower income inequality on a given per year basis but the negative trend across the population of OECD countries does not appear to have been abated; even when considering government intervention. And even though Table 1.3 (which measures the reduction in the Gini coefficient (pre- and post government intervention) as $GINI_{ADJ}$ equals $GINI_{HMI}$ less $GINI_{DHI}$) gives an encouraging perspective as to each country's respective role in attempting to soften the impact of income inequality. Yet no evidence of any institutional trends away from the distribution of income negative direction seems to be occurring.

The countries do exhibit a wide range in levels of income inequality. The income distribution in the United States is among the most unequal, and when compared to the narrower set of the richest nations, the distribution in the U.S. is the most unequal. A number of middle-income and developing nations, including Brazil, China, Turkey, and South Africa, though, have distributions of income that are more unequal than in the United States.

In the case of the United States and Israel, above-average inequality in the distribution of market income combined with below-average levels of tax and transfer redistribution leave them with the highest Gini coefficients for DHI among the rich nations.[8.] And the United States has had the most unequal distribution of income among rich nations since the early 1980s. [9.] And further, the United States is one of the countries for which, excluding trends for the 1970s, substantially understates its rise in inequality (between the mid1970s and 2010 the U.S. pre-tax and transfer Gini rose 23 percent and its DHI Gini rose 20 percent).

Trends in the overall distribution of income (e.g. Gini coefficients) suggests that the distribution of income has become more unequal in most countries since the 1970s. The share of total income captured by a tiny minority of the population has been rising continuously since 1980s in many advanced countries, and this has fueled concerns about the social inclusiveness of economic growth. In the United States, the top 1 percent captured 58 percent of real economic growth per family during the 1976–2007 period. And findings such as these likely motivated the Managing Director of the International Monetary Fund, Christine Lagarde, to refer to inequality and the inclusiveness of growth as one of the future major challenges of the global economy that the IMF aims to address.[10.]

A better understanding of the dynamics of the share of total income of the upper income brackets may be crucial to understanding changes in the overall income distribution. For example, understanding top income brackets' share has been particularly useful to studies of important issues in public economics, such as the elasticity of reported income to tax changes, the extent of income shifting and tax avoidance, and more generally, the behavioral responses to changes in taxation. Finally, the new empirical evidence on top shares gave the economic profession a new challenge: conventional explanations of rising income inequality since the end of Bretton Woods such as the skill-biased technological change and globalization forces are no longer sufficient to explain the evolution of top income shares across different developed countries[11.] .

For example, the Gini Coefficient probably further underestimates top income categories when you take into consideration the roles of (unlawful) tax evasion, (lawful) tax avoidance, and other behavioral responses to changes in taxation. Therefore, the use of tax data to estimate top income shares poses potentially serious problems resulting from under-reporting, re-timing of income reporting, and income shifting (depending on fiscal convenience). [12.]

In summary, long-term increases are evident in the Gini coefficients for disposable household income calculated using household surveys, and also with top-income shares calculated with tax data. The English-speaking countries (led by the United States and the United Kingdom) are the most unequal, by most measures, and the Nordic countries are the least unequal. Yet the distance between the most and least unequal among rich countries has diminished, as inequality growth has even surged in some of the least unequal. And lastly, taxes and transfers (as mentioned above) reduced the degree of inequality in every country, but there is dramatic variation in the extent of the redistribution. The impact of taxes and transfers was very small in some highly unequal countries (Russia) and some less unequal ones (South Korea). In some countries, taxes and transfers have a dramatic impact on the distribution of income; Finland has among the most unequal distributions of market income, but one of the most equal distributions of Disposable Household Income (DHI) due to the extensive distribution in its welfare state. The United States combines relatively high levels of inequality in market income with very low levels of tax and transfer redistribution to achieve the highest level of DHI inequality among rich nations.

Where Do We Go from Here ?

The key towards alleviating the continuing concentration of income and wealth potentially lies in establishing initiatives that can address the realm of economic growth opportunities that are, (1) human resource centric, and, (2) evens the playing field in the context of the NAE. A human resource centric approach to facilitating economic growth includes developing human capital (accumulation of relevant knowledge and skills) acquired through education and experience. In the context of the NAE developing human capital can

contribute to economic growth in a complementary way. The increased knowledge and skills of people complement our current and future investments in applied technology physical capital. Thus this economic growth model is one of endogenous rather than exogenous technological change.

Human capital development theory can serve as a basis for important public policy decisions. Studies have demonstrated that the returns from investing in secondary education, in particular, often exceeding the gains from more conventional investment. In developing countries an extra year in school can raise individual income by 15 to 20 per cent a year. [12.] Therefore, implementing a human resource centric growth theory for purposes of addressing policy issues, such as whether subsidies for research and development are socially justified and whether policies that place fewer taxes on income earned from investment will spur economic growth or increase economic welfare represent the most appropriate theoretical application in the era of the NAE and the major issue today of income and wealth inequality. Such a human resource centric variant of new growth theory has demonstrated that investment in comprehensive education can lead to permanent increases in the rate of technological progress as the workforce will be better able to incorporate new ideas and technologies into the workplace.

Towards a New Direction

Chairman Yellens of the Federal Reserve System discussed what she referred to as the inequality of opportunity economic condition that a large segment of the U.S. population face, "…fewer than 1 in 10 children of families at the bottom later reach the top quintile…the story is flipped for children raised in the highest-income households: When they grow up, 4 in 10 stay at the top and fewer than 1 in 10 fall to the bottom…" [4.]

An important factor influencing intergenerational mobility and trends in inequality over time is economic opportunity. For families below the top, public funding plays an important role in providing resources to children that influence future levels of income and wealth. Such funding has the potential to help equalize these resources and the opportunities they confer.

Social safety-net spending is an important form of public funding that helps offset disparities in family resources for children. And public funding of education is another way that governments can help offset the advantages some households have in resources available for children. The fact that the United States ranked 28th out of 38 advanced countries in the share of four-year-olds enrolled in public or private early childhood education is not encouraging.[13.] Similarly, the quality and the funding levels of public education at the primary and secondary levels vary widely, and this unevenness limits public education's equalizing effect. The United States is one of the few advanced economies in which public education spending is often lower for students in lower-income households than for students in higher-income households.[14.] Some countries strive for more or less equal funding, and others actually require higher funding in schools serving students from lower-income families, expressly for the purpose of reducing inequality in resources for children.

A major reason the United States is different is that it is one of a few advanced nations that funds primary and secondary public education mainly through subnational taxation. Half of U.S. public school funding comes from local property taxes, a much higher share than in other advanced countries, and thus the inequalities in housing wealth and income that reverses the benefits of a federal progressive tax system; increasing the ability of more-affluent school districts to spend more on public schools.

Chairman Yellens in her talk indicated that the SCF shows that ownership of private businesses is a significant source of wealth and can be a vital source of opportunity for many households to improve their economic circumstances and position in the wealth distribution. For example, only 3 percent of the bottom half of households hold equity in a private business, but it is a big share of wealth for those few.[15.]

Research shows that business ownership is associated with higher levels of economic mobility.[16.] However, it appears that it has become harder to start and build businesses. The pace of new business creation has gradually declined over the past couple of decades, and the number of new firms declined sharply from 2006 through 2009.[17.] The latest SCF

shows that the percentage of the next 45 that own a business has fallen to a 25-year low, and equity in those businesses, adjusted for inflation, is at its lowest point since the mid-1990s. One reason to be concerned about the apparent decline in new business formation is that it may serve to depress the pace of productivity, real wage growth, and employment.[18.] Another reason is that a slowdown in business formation may threaten what Chairman Yellen believes a significant source of economic opportunity for many families below the very top in income and wealth. . We contend in this paper that a more equitable access to "Passwords to Knowledge" can favorably impact on these negative trends of business formations for family and individuals in the lower realms of the income distribution. For example, Internet and web based businesses require less startup capital and more creative networking.

The NAE and a Proposed Simple Institutional Re-Arrangement of Public Education

As previously discussed, an economic transaction originating on a local basis can spiral, in real time, into an impactful global empirical reality with regional, national, and/or international consequences. And such a singular event can conceivably result in repetitive positive economic value added global outcomes and events. But, unfortunately, the greatest challenge we face locally, nationally, and globally is the potentially resultant uneven outcomes and distribution of income and wealth. Too often applications of usable information and mass communication technology resources fuel the growing gap between the smaller set of the haves and the growing set of the have nots. Therefore, the gap between who can take advantage of and benefit from production, income, and wealth; that is, those uneven benefits that are attributable to mass communication technologies application and use by private individuals, groups, and artificial entities (corporations); is the greatest public policy challenge facing our elected officials and government(s). The application of discretionary and nondiscretionary public policy initiatives in support of

output, employment, monetary, and general price level goals and objectives are being frustrated by negative trends in income and wealth distribution, whether measured on a national or international basis. And the number one economic problem we face as a people; whether we make an assessment by national or global community measure(s); is this glaring negative trend of how the national and global pie is distributed. In this paper we attempted to tackle this issue with a view towards identifying potentially constructive public policy directions (especially specific to the U.S.A.'s economy) that can be implemented. That is, it is our contention made here that a new and simple human resource centric based economic public policy initiative is most applicable to today's world economic challenges. Quite simply, extend public education to a thirteenth year dedicated singularly to teaching survival tools (passwords to knowledge) to the masses involved in the public school form of education.

The proposed simple but innovative public educational model in this paper is based upon the theory that argues in favor of the designing and expansion across all population segments the concept of, "access to passwords to knowledge" in a way that lessens the accessibility opportunity differences due to income and wealth differences. This proposed simple public policy initiative is based upon an innovative human capital development economic model as mentioned above. Simply put, by expanding the archaic public education model of "k to 12" to a required thirteenth year of education that would supply the individual with a working knowledge of how to use modern day technologies (such as, computers) as supportive exploratory strategic systems; supportive exploratory strategic systems designed to teach such tasks as information finding (skills). This last year of public

education would have the specific teaching task focus of providing the student with a better understanding of how to use available mass communications' technologies "tool box" in support of the art and science of decision making relevant to how today's world economies' works. This tool box of survival and market competitive knowledge finding skills are necessary use value tools for the contemporary individual's human development in the world of the NAE. The use value skills of this tool box include maximizing on the benefits of applied technologies available for information processing and decision making; and a secondary benefit emanating from this "required thirteenth year of education" should include an entrepreneurial way of thinking and doing skills development (building a foundation for the individual's ability to capture an increasing level of use value and exchange value (such as, income and wealth opportunities)). Although there are a number of uncoordinated public policy elements already implemented nationwide in support of this economic challenge, we are putting forward in this paper a need to institutionalize it as part of the required basic public education system (implemented not implicitly but explicitly as an extension beyond the conventional "K thru12" public educational model).

We can conclude here that, based upon most empirical indications, the U.S. and the rest of the world have a significant income inequality issue. Quite simply, in general, much empirical studies suggest that low income people have income equal to consumption plus government transfer payment whereby net wealth continues to be zero or less, depending upon amounts of transfer payment resulting in lifelong, intergenerational poverty (no gains or even existence of net wealth component). Whether you agree or not to the possibilities that the NAE characteristics have significant elements of responsibilities to the rising trend of income and wealth inequality, towards a new direction as herein suggested might be easier to "swallow" for you.

STATISTICAL NOTE

THE Gini Coefficients calculated and used in this paper come directly from the study done by Morelli, Smeeding, and Thompson (Pos-1970 Trends in Within-Country Inequality and Poverty: Rich and Middle Income Countries Institute for Research on Poverty (IRP) Discussion Paper No. 1419-14 March 18, 2014). They made use of the, World Top Income Database (WTID) for 21 Countries since 1970. The series were constructed using tax statistics and they also made use of gross types of income (i.e. in the United States, the gross market income is defined before deductions, individual income taxes, payroll taxes, and all kinds of government transfers. The Study noted the existence of favorable tax policy measures implemented in support of the 1%ers; which tended to underestimate their share of the national pie (maybe, clear example of this is presidential candidate Trump's tax strategies on his personal tax issues in which he is holding back review by the public while he further manipulates, in his favor, actual income versus adjusted income results).

1. <1> P5
2. < 1 > p3
3. <2>P1
4. <2>P5

5. Gini (1912).
6. Jump up^ Gini, C. (1909). "Concentration and dependency ratios" (in Italian). English translation in *Rivista di Politica Economica*, 87 (1997), 769–789.
7. The Gini Coefficient was proposed by Gini as a measure of inequality of income or wealth.[5] For OECD countries, in the late 20th century, considering the effect of taxes and transfer payments, the income Gini coefficient ranged between 0.24 and 0.49, with Slovenia the lowest and Chile the highest.[6] African countries had the highest pre-tax Gini coefficients in 2008–2009, with South Africa the world's highest, variously estimated to be 0.63 to 0.7,[although this figure drops to 0.52 after social assistance is taken into account, and drops again to 0.47 after taxation. The global income Gini coefficient in 2005 has been estimated to be between 0.61 and 0.68 by various sources.
   There are some issues in interpreting a Gini coefficient. The same value may result from many different distribution curves. The demographic structure should be taken into account. Countries with an aging population, or with a baby boom, experience an increasing pre-tax Gini coefficient even if real income distribution for working adults remains constant. Scholars have devised over a dozen variants of the Gini coefficient.

   The Gini coefficient is usually defined mathematically based on the Lorenz curve, which plots the proportion of the total income of the population (y axis) that is cumulatively earned by the bottom x% of the population (see diagram). The line at 45 degrees thus represents perfect equality of incomes. The Gini coefficient can then be thought of as the ratio of the area that lies between the line of equality and the Lorenz curve (marked *A* in the diagram) over the total area under the line of equality (marked *A* and *B* in the diagram); i.e., $G = A / (A + B)$. It is also equal to $2A$ and to $1 - 2B$ due to the fact that $A + B = 0.5$ (since the axes scale from 0 to 1).
   If all people have non-negative income (or wealth, as the case may be), the Gini coefficient can theoretically range from 0 (complete equality) to 1 (complete inequality); it is sometimes expressed as a percentage ranging between 0 and 100. In practice, both extreme values are not quite reached. If negative values are possible (such as the negative wealth of people with debts), then the Gini coefficient could theoretically be more than 1. Normally the mean (or total) is assumed positive, which rules out a Gini coefficient less than zero.
   An alternative approach would be to consider the Gini coefficient as half of the relative mean absolute difference, which is a mathematical equivalence. The mean absolute difference is the average absolute difference of all pairs of items of the population, and the relative mean absolute difference is the mean absolute difference divided by the average, to normalize for scale. if x_i is the wealth or income of person i, and there are n persons, then the Gini coefficient G is given by:

$$G = \frac{\sum_{I=1}^{n} \sum_{j=1}^{n} |x_i - x_j|}{2\sum_{I=1}^{n} \sum_{j=1}^{n} xj} = \frac{\sum_{I=1}^{n} \sum_{j=1}^{n} |x_i - x_j|}{2n \sum_{I=1}^{n} xi}$$

When the income (or wealth) distribution is given as a continuous probability distribution function *p(x)*, where *p(x)dx* is the fraction of the population with income *x* to *x+dx*, then the Gini coefficient is again half of the relative mean absolute difference:

$$G = 1/2\mu \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} p(X)p(Y) \left| x - y \right| dx\, dy$$

where μ is the mean of the distribution $\mu = \int_{-\infty}^{\infty} xp(X)\, d(x)$ and the lower limits of integration may be replaced by zero when all incomes are positive.

8. **<3> Ibid, p57.**
9. **<3>ibid, p64**
10. **<3> ibid, pp73-4**
11. **<3> ibid, pp85-126**
12. **<4> cit, p333**
13. Organisation for Economic Co-operation and Development (2013), How Do Early Childhood Education and Care (ECEC) Policies, Systems and Quality Vary across OECD Countries? Education Indicators in Focus Series 11 (Paris: OECD, February).
14. Organisation for Economic Co-operation and Development (2013), *Education at a Glance 2013: OECD Indicators* (Paris: OECD).
15. Distributional statistics for business ownership and assets exclude outliers with large negative net worth.
16. Robert Fairlie (2004), "Earnings Growth among Young Less-Educated Business Owners," *Industrial Relations*, vol. 43 (July), pp. 634-59; Douglas Holtz-Eakin, Harvey S. Rosen, and Robert Weathers (2000), "Horatio Alger Meets the Mobility Tables," *Small Business Economics*, vol. 14, pp. 243-74; and Vincenzo Quadrini (2000), "Entrepreneurship, Saving, and Social Mobility," *Review of Economic Dynamics*,vol. 3 (January), pp. 1-40.
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About the Author

Over the years, L. A. Huff, Ph.D., has cultivated the reputation as "a real-world economist." It has been his lifelong career attempt to extend knowledge of "scholarly jargon and debate" into an activist role of "theory into practice."

With an earlier career in academia as well as international employment experience as a business development economist and economic policy analyst during the nineties, L. A. has built an understanding and reputation in his field as to the issues of entrepreneurship and economic development. Hired in the nineties by the Swedish International Development Agency (SIDA) and the Government of Botswana, he contributed significantly to Botswana becoming Africa's most successful democracy.

Dr. L. A. Huff is America's quite-kept secret economist… not for long; he is back home and writing!