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Organic Business Modeling and the Organism-Ecosystem Unit Duality:
An Analysis of the Consumption to Value Ratios of Economy Subsectors

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ABSTRACT

The health of a corporation relies most heavily upon healthy human beings' value-based productivity for optimal growth and evolution. A duality between personhoods and their respective systems' weighted impacts are in question, as the U.S. Healthcare industries weighted impact affects all other U.S.-GDP subsectors. The author performed an analysis of 21 main U.S.-GDP subsectors based on unclassified 1960-2014 U.S. Bureau of Economic Analysis reports. The author derived a [Consumption:Value] ratio-based equation, demonstrating results in [0.0,2.0] and U.S. dollar scales. The U.S.-GDP-Healthcare subsector increased its average annual consumption by $122,232,000,000 and was part of the U.S.-GDP's 71.4% demonstrating a reduced value ratio between 1960-1969 and 2005-2014. The author describe a weighted duality of personhoods classification, a potential ripple effect violation, and presents a new description of a pathologic, malignant organic business model due to a negatively balanced [Consumption:Value] alteration. These findings highlight reduced marginal utility and value of the U.S.-Healthcare subsector.

KEYWORDS

Business, Consumption, Corporation, Economy, Finance, GDP, Gross, Healthcare, Individual, Person, Personhood, Value

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INTRODUCTION

This manuscript presents a discussion of human health as the base variable for all economic productivity. Micro and macro economies are universally altered over time, and each subsector acts as an individual weighted impact inside each economy (ecosystem). Thus, the author brings a magnified variable perspective for each weighted impact to the forefront of economic evaluations with respect to personhood type, their respective overall health, and value contribution. Nominalized examples of consumption to value alterations inside of the U.S.-GDP between 1960-2014 and a discussion of their interconnectivity from an economic systems-based perspective (attributed to the devaluation of healthcare) demonstrates the health of humans and businesses are inseparable.

The author performed a monetary health analysis of each subsector for U.S.-GDP trends between 1960-1969 and 2005-2014. This analysis can be used as historical and predictive trend analysis of both national and global markets, based on the U.S.'s large global footprint at any one moment considering the U.S. financial economy is the largest on Earth. Many questions exist related to the U.S.-GDP Healthcare subsector and are largely based on rapidly increasing costs and questionable value-based outcomes. The author asks what nominal gain (value) or loss (consumption) of U.S.-GDP collective subsectors value has truly been realized? What value-based governmental agency parameters should the U.S. accept? What Parameters should ultimately be use for basing calculable projections upon with respect to Healthcare dollars specifically, but also for each U.S.GDP subsector? How does the U.S. Healthcare subsector compare to other U.S.-GDP subsectors based on value? Finally, an inquiry into how might the impact of a potential Healthcare loss or gain in value effect a national GDP and the GDP of the global market?

Many variables do contribute to the end-product of any calculation, and this manuscript sheds calculable light upon which heavily weighted economic subsectors of the U.S.-GDP create the greatest impact over time, while taking into account aspects of the General Theory of Relativity's Equalization Principle, Pareto Principle, Living Entity, Ripple Effect, Marginal Utility, Kuhn theory, Bionomics, Health Ballistics, Ecological Fallacy and Biomimicry, among others. The author sheds further light onto which potential uniformly impacting economic variables violate currently accepted economic laws of diminishing return, marginal utility, and ripple effect.

With clear evidence from public and private sectors demonstrating that the U.S.-Healthcare industry has grown inefficiently, a true nominal evaluation of the trend has yet to be discussed in the context of personhood and system types; with weighted monetary values calculated and assigned variables, for discussion. Furthermore, with intra-governmental regulations and data disclosures for accurate interpretation of historical trends varying, a larger question of what truly adds value historically, in the present day, and in the future, exists based on accurate data being released for review in the current moment for prospective decision making.

BACKGROUND

According to the World Health Organization and the World Bank, chronic diseases are the leading cause of death and burden of disease on Earth while being prevalent irrespective of sex and increasing within all age groups (World, 2005). Access to a healthy lifestyle and individual support from the government to continue to lead healthy lifestyles are basic, crucial steps for any country to propagate and maintain a healthy national population (World, 2005). This recommendation is not just theoretical, it is realizable, as most disease-causing variables are known and preventable (World, 2005).

When comparing the U.S. human population to 16 other peer-comparable (high income) countries, the U.S. is ranked 16 of 17 for non-communicable diseases and 14 of 17 for communicable diseases (National, 2013). The worst domains noted were adverse birth outcomes, injuries and homicides, adolescent pregnancy and sexually transmitted infections (STI), human immunodeficient virus (HIV), drugs, obesity, diabetes mellitus type II, hypertension, and general disabilities. The common linking thread between these variables were that of daily lifestyle choices, which impact an individual's entire lifespan. Lifestyle choices also contribute disproportionately to a human's quality of life, their own personal Health Wealth Commodity Value (Washburn, 2016) over their personal lifetime, and their individual value-added contribution to society as a whole.

The Centers for Disease Control and Prevention (CDC) note increasing chronic disease trends over recent decades, with current observations noting 6 of 10 U.S. citizens have at least one chronic disease, while 4 of 10 have two or more chronic diseases (Centers, 2019). The chronic disease Type II Diabetes Mellitus afflicted 1.59 million U.S. individuals (0.91% of the U.S. population) in 1960. Yet in 2015, 23 million U.S. individuals (7.4-9.3% of the U.S. population) were diagnosed with this chronic disease, and there was an additional estimated 7.2 million U.S. individuals (2.9% of the U.S. population) who were undiagnosed (Department, 2017, Centers, 2017, B). Based on this retrospective assessment, the chronic disease of Type II Diabetes Mellitus increased between 813% and 1340% between 1960-2015.

Researchers note that roughly 20% of the U.S.-GDP is dedicated to Healthcare with projections for Healthcare spending to increase by 5.5% annually from 2018 to 2028. This increased expense and consumption will lead to roughly $6 trillion dollars in cost per year by 2028 (Centers, 2017, A). Undoubtably, this financial alteration will directly affect other U.S.-GDP subsectors with reciprocal impacts felt globally. The cost of all U.S. Healthcare fee for service business models has a profit margin; as does any other capitalistic system model. This unfortunately creates a conflict of interest that directly undermines the remaining 80% of the U.S.-GDP marketplace, as sick people are good for the healthcare subsector base point while directly undermining all other subsectors production value optimization. What is good for the Healthcare Corporate Personhood (business) is likely at the expense of the Natural Personhood (human) working in all subsectors of the U.S.-GDP.

Human symptomatic disease states are the current profit maker of the U.S. Healthcare industry and simultaneously the greatest cause of productive business retardation (e.g., absenteeism, presenteeism, reduced quality end-product, reduced profit). This increased expense is simply placed back on all businesses by a variety of means. This allows for reduced economies of scale as health is the absence of disease and therefore mitigating the need for such a large Healthcare industry. This is part of the modern healthcare façade (Washburn, 2016), which is a paradox of monumental impact, and adds evidence to the concept that disease causes the Healthcare industry to grow at the expense or loss of productivity from all other GDP subsectors. This is arguably the largest contributor to value mitigation uniformly in the U.S.-GDP and is in crucial need of investigation.

As all commodities are a basic goods with a minimal standard or basis grade (a nominal value which is measurable, calculable, alterable, predictable and weighted based on need), it is not historically common practice to assign these terms to the health of a person or business. This assigned basis grade value does not currently exist for the commodity of a Natural Personhood's health (Washburn, 2016).

In accordance with economic growth and decline cycles (Popescu, 2010), each economy has subsectors that account for the accurate growth and decline changes observed. The observed individual subsector fluctuations inside of the full economy system do not always coincide with the observable systems summed economic cycle that they are part of; some are disproportionately weighted with appreciably differing impacts.

Different analogues of an ecosystem (such as Biological, Industrial, Economical, Digital, Sociological, and Business) along with the different analogues of an organism (such as Natural or Biologic and Corporate or Business personhoods) exist. Being classified as different does not mean they are actually separate as these denotations merely allow for a clear recognition of a unit as a fundamental interconnective aspect of each ecosystem with an organism (labelled as ether a unit or system or perhaps both depending on the relative perspective at any one moment). Irrespective of the analogue description being a single organismal unit or single system unit (both arguably the same based on perspective) when researchers observe an increased consumption and decreased value-based production balance, death of the analogue will eventually be realized once terminal critical mass has been reached.

Ecological variables are necessary to examine structural, contextual, sociological effects and disease development in a population (Schwartz, 1994). A healthy growing society must have organizations that integrate human life, environments, and institutions (Szent-Gyorgyi, 1981). Researchers have previously presented a discussion of this unity as part of the Living Entity, where the health of a person is central to any healthy organization (Costea, 2007). The concept of Bionomics also mentions the functional unit of an ecosystem as its human population, and it states that all elements of that closed ecosystem must interact with each other (Rothschild, 1990). This interaction also directly and indirectly affects the business unit, thereby increasing potential in and around its ecosystem for sustainability (Sui, 2009).

A business ecosystem has been described as both "a dynamic structure which consists of an interconnected population of organizations" (Peltoniemi, 2004) and also "an economic community supported by a foundation of interacting organizations and individuals which are the organisms of the business world" (Moore, 1996). As organizations (businesses) are non-biologic units part of a system, they can't function, grow, and interconnect with their ecosystem without their Natural Personhoods' direct and productive daily involvement. This clearly infers the impossibility of disconnecting Natural Personhoods from their respective corporate personhood, as they alone are the basic operating unit that create the value of all business operations.

Nature finds the most efficient mechanism for survival, as described by biomimicry (Benyus, 1998). By observing historical failed systems, one can appreciate an evolutionary revolution seen as the natural way all units (individual organism or systems alike) has evolved over time. The *Structure of Scientific Revolutions* describes that to correct the trajectory of a failing system, a potentially radical alteration of that systems trajectory is needed for survival (Kuhn, 1967). Hence, a logical conclusion would be that any system noting increased consumption and reduced product value are on a trajectory for death unless change is realized, and this is in essence evolution and survival of the fittest. Just as a biological organism will evolve, grow, produce, and die to fulfil its lifecycle (Popescu et. al., 2007), a business will do the same. Both organism types will possess variables that consume more than others during this cycle as an adaptation in the moment. This is evolution with the productive organisms/systems growing and the consumptive organisms/systems eventually dying when resources are depleted.

Despite all variables of any interaction being comingled, none have an exactly equal impact upon the whole of the system in which they reside in any one moment (Pareto, 1896). A positive value-based end-product or service outcome is a sign of good business health. This is only possible with a healthy, productive work force, and researchers therefore allocate a heavy impact weight in alignment with the preceding Pareto Principle. This relationship ratio between a Natural and Corporate Personhood unit leads directly to growth or consumption of value overall and can be nominally appreciable when calculated.

Money Multipliers have a downstream impact effect that is synonymously observed with the principle known as the Ripple Effect (Money, 2019). Historically, any impact has most direct and largest effects upon the variable adjacent to the interactions and has subsequent diminishing returns (just like ripples in a pond when a stone is thrown into the middle of it). This concept has been thought to be universal until the current discussion challenged how the health of a human and business truly interact on a single unit and simultaneous system unit level. A fundamental value-base discussion and nominal representation noting a unit as an individual and synonymously as a system is unclear from the traditional perspective of business modeling and economic scales. This subtle yet incredibly influential descriptive duality has led to a complication in its definition that ultimately needs clarification. It also elicits a potentially marginalized, newly discussed economic variable needing attention for economic prosperity,

national security, and global evolution. This perspective is based on a relativity-based observation similar to Albert Einstein's proposed Equivalence Principle as part of his General Theory of Relativity (Einstein, 1915). The impact or force noted by any observer is the same, however, interpreted or viewed differently based on perspective of the observer.

From an economic perspective, the Effects Multiplier equation [1/(1-mpc)] (Money, 2019) classically represents savings vs spending of resources and is based on the magnification of a unit at any one moment. The macroeconomic perspective and impact is relative, based on the unit values used in the equation. For example, the economy of single household can be calculated similarly to that of a national economy based on the general equation above. Classically, a biologic organismal unit (human) has on average little impact upon the ecosystem (economy) in which it resides, and conversely, the ecosystem has little impact on that organism, specifically (Washburn, 2016; Piantadosi, 1988). When calculating a marginal propensity to save or consume, the current manuscript describes the use of relativity-based magnification of a single unit at a specific timepoint, a duality of the Natural Personhood that has the same economic dynamic as a national GDP becomes a reality. A microeconomic and macroeconomic impact that depends on magnification can be the same based on perspective and is inseparable based on the sum impact to the system in which they both reside. Another interpretation of this concept is based on simple magnification of the global economy or Earth in general. When viewing planet Earth from space, researchers could view it as both a system unit and simultaneously as a single-celled organismal unit.

Despite the individual Natural Personhood and its population being one in the same based on observation perspective (Washburn, 2016; Array, 2008) there are a few individual units in any system unit that do in fact have an imbalanced weighted impact attributed to their position of influence, in their respective ecosystem (ex: a CEO, president or director). With observing health as a basic architectural necessity for daily function, their individual health directly effects their daily function (thought, actions, etc.), and ultimately impacts their system in entirety, more so than other single individual based on their weighted impact. This is a magnified relativity-based principle as their individual, heavily weighted, ripple effect is potentially void of marginal returns inside their system as they directly impact each and every component of their business or system.

A national economy reflects the same impacting strata based on magnified relativity-based principles. All businesses and employees add to their national GDP, based on leadership. This weighted variable perspective is also observable when comparing all national economies for global economic analysis, including continental economic shifts based on how the national GDP changes daily. For example, the greatest global economic impact is disproportionally felt from the U.S. and China (International, 2018), as they are by far the two single largest economies in the current global market. Both have a single Natural Personhood (a U.S. President and a Chinese Paramount Leader) that leads their nations' populations and national economies. These

two Natural Personhoods have an unequally weighted impact upon the rest of their respective national and global economies. This perspective is now termed the *Systems Relativity Perspective* and is represented in a 2D format; (Figure 1).

Just as a national GDP has subsectors in constant need of review for optimal growth patterns, each subsector must also have subcategories that need constant re-evaluation. While the U.S.-GDP increased 32-fold (17,393 billion ÷ 543 billion) from 1960-2014 (Health, 2016), many components to the U.S.-Healthcare system did not trend according. The Healthcare investment costs increased nearly 61-fold (150.9 billion ÷ 2.5 billion), the personal Healthcare costs increased 110-fold (2,562.8 billion ÷ 23.3 billion), the Healthcare consumption expenditures cost increased over 116-fold (2878.4 billion ÷ 24.7 billion) and administrative cost of private health insurance increased nearly 215-fold (236.6 billion ÷ 1.1 billion). When reviewing the change for government administration of Healthcare, it increased a staggering 4012-fold (41.2 billion ÷ 0.1 billion) (Health, 2016); (Figure 2).

The way in which people tend to pay for U.S. Healthcare services has also changed drastically. According to the CDC, from 1960 through 2014, health insurance payment amounts increased nearly 304-fold ($2009.4 billion ÷ $6.6 billion = 304.455), while private payments pay-lines only increased about 26-fold ($329.7 billion ÷ $12.9 billion = 25.558). This equates to a nearly 10 times greater increase in health insurance cost as compared to that of the U.S. GDP over the same time period (304 ÷ 33 = 9.879). Further comparison of payment lines in 1960 note nearly a 2-fold greater out of pocket private Healthcare payment line as compared to the use of health insurance or third-party payees ($12.9 billion ÷ $6.6 billion = 1.954). This is compared to the values in 2014, noting health insurance payments were over 6 times greater than private payment line ($2009.4 billion ÷ $329.7 billion = 6.095) (Health, 2016); (Figure 3). Considering the U.S. dollar inflation rate was 7.98-fold between 1960-2014 (CPI, 2018), a 38-fold times greater rate of growth for insurance payments (304 ÷ 7.98 = 38.095) as compared to the inflation value of the U.S. dollar is calculably appreciated.

According to the Bureau of Economic Analysis, Gross Output (GO) is defined as "…the market value of an industry's production… [sales or receipts and other operating income, commodity taxes, and inventory change]", and Value Added (VA) is defined as "…the contribution of each industry's labour and capital to its gross output… equal to an industry's gross output minus its intermediate inputs [the consumption of goods and services purchased from other industries or imported]" (Department, 2016).

The CDC notes that the U.S.-GDP Healthcare subsector was 17.8% of the entire U.S.-GDP in 2016 (Health, 2016), while the U.S.-BEA notes that Healthcare was 7% of the U.S.-GDP (Department, 2016). This large difference in governmental public reporting and release of information adds to the ambiguity surrounding the true value or consumption of the U.S.-Healthcare industries. For the purposes of this investigation, the author used U.S.-BEA's values based on conservative calculations compared to the CDC values, considering the stark difference in publicly released valuation.

Figure 1. Systems relativity perspective, duality of organism and ecosystem with inverse observation impact based upon observer's investigation

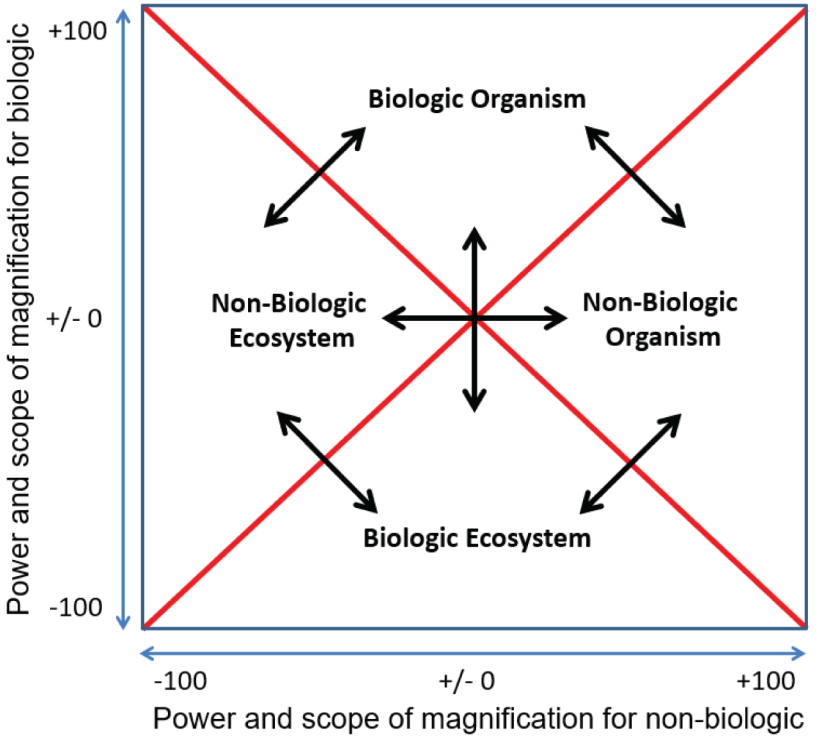


Figure 2. Comparing U.S.-GDP and healthcare subcategories times increased U.S.-dollar cost between 1960:2014

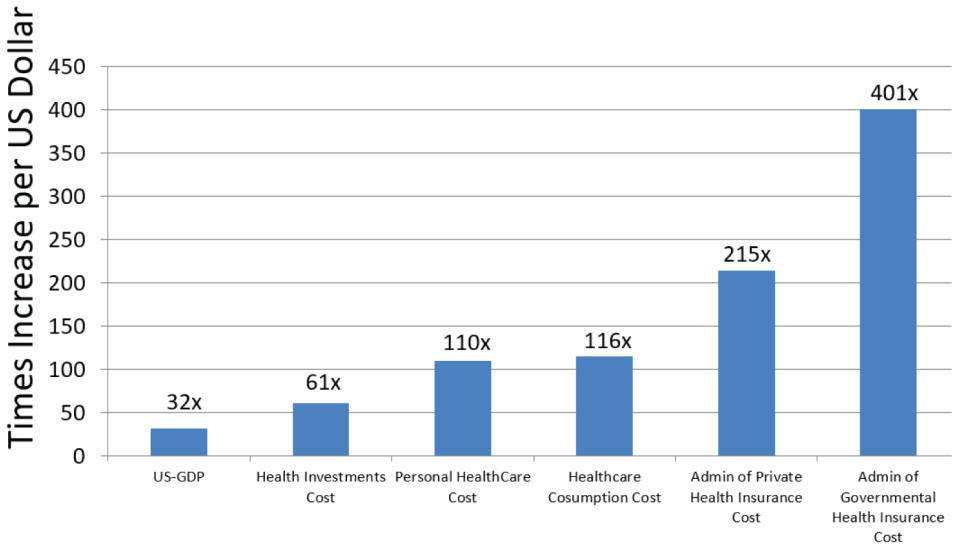
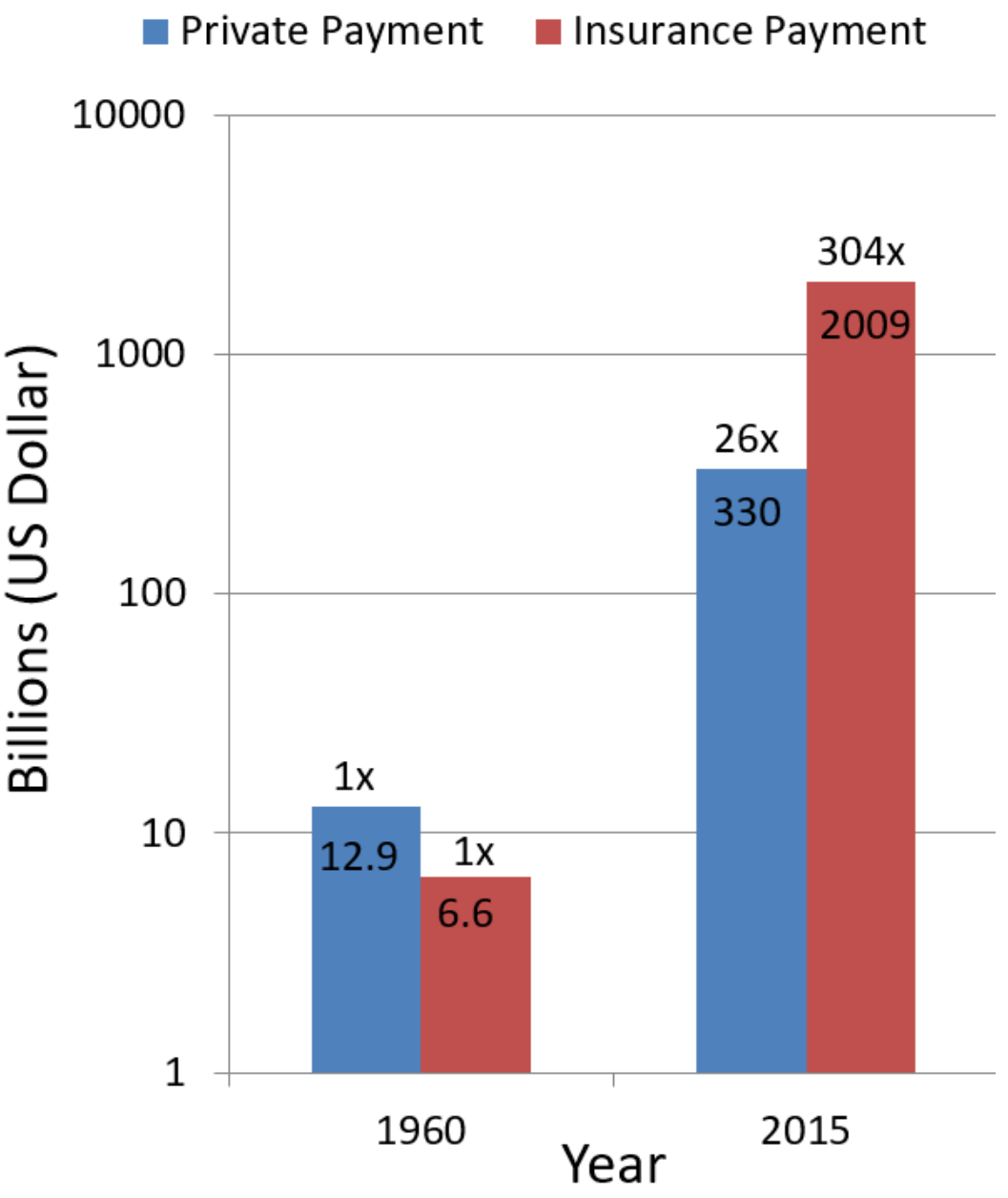


Figure 3. Logarythmic represenation of healthcare payment Source 1960:2014, in billions U.S.-dollars



METHODS

The author used the BEA U.S.-GDP subcategorized GO and VA industry for the time periods of 1960-1969 and 2005-2014 as a clear delineation of time spans. The average of each GO and VA for each time-period was used to reduce individual year variance inside of the multi-decade analysis. The author used the year 1960 as the starting date

because 1960's are observed to be the initiation of significant U.S.-GDP growth in general relation to the GDP trends over the last 100 years (Trading, 2018).

The author subtracted the 1960-1969 VA average from that decade's GO average, establishing the resource consumption value (synonymous to the marginal propensity to consume [MPC]). The author then divided the consumption value by the VA, establishing a ratio of the average resource consumption to the average VA. The author performed the same approach for the time period 2005-2014. Then, division of the 2005-2014 consumption ratio value by the 1960-1969 consumption ratio value was represented within the range of [0.0,2.0] for each subsector of the U.S.-GDP, between 1960-1969 and 2005-2014.

By comparing each of the BEA 21 main U.S.-GDP subcategories, the author could calculate a consumption to value range [0.0,2.0], where a value of [<1] represents a reduced consumption of resources (greater product value ratio), and a [>1] represents an increased resource consumption (loss of product value ratio).

[Consumption: Value] Ratio Equation

Gross Output (as noted per BEA) = GO
Value Added (as noted per BEA) = VA
Average GO of time period 1960-1969 in U.S.-Dollar (as noted per BEA) = (A)
Average GO of time period 2005-2014 in U.S.-Dollar (as noted per BEA) = (B)
$[(GO_A - VA_A) = (MPC \text{ or } Consumption_A)]$
$[(Consumption_A) \div (VA_A) = (Consumption_A{:}Value_A)] = [C]$
$[(GO_B) - (VA_B) = (Consumption_B)]$
$[(Consumption_B) \div (VA_B) = (Consumption_B{:}Value_B)] = [D]$
$[(D \div C) = (Consumption{:}Value \text{ ratio alteration of } A \rightarrow B)]$

The author performed further evaluation to assess for U.S.-Dollar consumption ratio nominal difference and ratio alteration between the time periods as follows:

The U.S.-Dollar Conversion

$[(D - C) = (Consumption{:}Value \text{ ratio nominal difference of } A \rightarrow B)] = [E]$
$[(B \times E) = (\text{the consumption change per C/V ration alteration})] = [F]$

The Multiplier Effects Equation

The author also performed further evaluation to assess for Effects Modifier impacts.

With the assumption that a duality exists between an individual and an economy (unit vs system), the author used the equation [1/(1-mpc)] as the base calculation for comparison to the [Consumption:Value] equation. This can be interpreted and applied by interchanging the respective equations numerical and symbolic constants, such that: [1/(1-mpc)] = [GO/(GO-[GO-VA])] = [GO/VA], with the assumption that [GO] =

GDP value and that [GO-VA] = Consumption Value or the unit under investigations (the marginal propensity to consume value):

[1/(1-mpc)] = [GO÷(GO-[GO-VA])] = [GO÷VA] = [EM_1] for 1960-1969
[1/(1-mpc)] = [GO÷(GO-[GO-VA])] = [GO÷VA] = [EM_2] for 2004-2014
[EM_2] ÷ [EM_1] = EM ratio alteration from 1960-69 to 2005-14
[EM_2] - [EM_1] = EM ratio nominal change from 1960-69 to 2005-14

RESULTS

See Tables 1 and 2.

Table 1. Data Set Example #1: U.S.-GDP Healthcare subsector, 1/21 subsectors used, Value Added (VA) by industry

Years: 1960-1969	$Millions	Years: 2005-2014	$Millions
1960	11,828	2005	828,880
1961	12,602	2006	883,002
1962	13,759	2007	925,919
1963	14,709	2008	996,023
1964	16,306	2009	1,051,042
1965	17,638	2010	1,079,189
1966	19,805	2011	1,111,578
1967	22,633	2012	1,153,783
1968	25,526	2013	1,186,799
1969	29,178	2014	1,222,659
1960-1969	Total = 183984 Average = 18398	2005-2014	Total = 10,438,874 Average = 1,043,887

U.S.-GDP Healthcare Subsector [Consumption:Value] Ratio Value

1960-69: GO (27401) - VA (18398) = 9003 (consumption)
9003 ÷ 18398 = 0.4893 ¬ *(1960-69 Consumption/Value ratio)*
2005-14: GO (1738393) - VA (1043887) = 694506 (Consumption)
694506 ÷ 1043887 = 0.6653 ¬ *(2005-14 Consumption/Value ratio)*
0.6653 ÷ 0.4893 = 1.3597 ¬ (Consumption/Value ratio alteration)
0.6653 - 0.4893 = +0.176 ¬ (Consumption/Value ratio nominal difference)

U.S.-Dollar Conversion Value

[(0.6653 - 0.4893) = +0.176]

Table 2. Data Set Example #1: U.S.-GDP Healthcare subsector, 1/21 subsectors used, Gross Output (GO) by industry

Years: 1960-1969	$Millions	Years: 2005-2014	$Millions
1960	17,135	2005	1,387,401
1961	18,209	2006	1,464,157
1962	19,964	2007	1,547,550
1963	21,974	2008	1,641,370
1964	25,223	2009	1,716,120
1965	27,182	2010	1,779,402
1966	29,960	2011	1,855,767
1967	33,207	2012	1,935,797
1968	37,839	2013	1,988,423
1969	43,312	2014	2,068,301
1960-1969	Total = 274005 Average = 27401	2005-2014	Total = 17,383,928 Average = 1,738,393

[(694506 x +0.176) = (+122232 consumption change per C/V ratio alteration)]

Effects Multiplier Ratio and Nominal Value

1960-1969: [1÷(1-mpc)] = [GO÷(GO-[GO-VA])] = [GO÷VA] =
(27401÷18398) = 1.4893 = [EM_1]
2005-2014: [1÷ (1-mpc)] = [GO÷ (GO-[GO-VA])] = [GO÷VA] =
(1738393÷1043887))] = 1.6653 = [EM_2]
1.6653 ÷ 1.4893 = 1.1182 EM ratio alteration from 1960-69 to 2005-14
1.6653 - 1.4893 = 0.1761 EM ratio nominal change from 1960-69 to 2005-14

The [Consumption:Value] ratio equation results note that 15 of 21 (76.2%) U.S.-GDP subsectors were consumptive in value. With the understanding that a null value change is 1.0 in the scale [0.0:2.0], Healthcare ranked 9 of 15 [1.3597] most consumptive U.S.-GDP subsectors; (Table 3).

The healthcare subsector had a nominal ratio change of [0.176] between time periods and ranked 11 of 15 most consumptive U.S.-GDP subsector; (Table 4).

Monetary conversion of Table 4 data notes 15 of 21 (71.4%) U.S.-GDP subsectors increased U.S. dollar consumption, Healthcare was ranked 6 of 15 among consumptive subsectors and Healthcare was observed to have an increased average annual consumption of $122,232,000,000: (Table 5).

Multiplication of the Healthcare's subsector nominal increase ratio alteration of [0.176] with attributed U.S.-dollar value demonstrates the conservative potential increased average annual U.S.-GDP subsectors individual consumption of $439,491,000,000.

Example calculations:

Table 3. Ranked annual average changes of US-GDP subcategories based on alterations of the [Consumption:Value] ratio between 1960-1969 and 2005-2014

Category	[C:V] Ratio Alteration Between 1960-1969 and 2005-2014
Mining	0.4803
Construction	0.6540
Educational services	0.7591
Professional, scientific, and technical services	0.7861
Accommodation and food services	0.8591
Retail trade	0.8765
Finance and insurance	1.0550
Administrative and waste management services	1.0850
Other services, except government	1.0906
Manufacturing	1.1551
Utilities	1.1818
Agriculture, forestry, fishing, and hunting	1.2082
Healthcare and social assistance	1.3597
Arts, entertainment, and recreation	1.4023
Transportation and warehousing	1.4698
Management of companies and enterprises	1.5464
Information	1.5777
State and local	1.6925
Federal	1.7396
Real estate and rental and leasing	1.9152
Wholesale trade	1.9500

[($\sum$(0.176) x (Table 3 individual U.S. dollar values)) =
($-439,491,000,000.00) excessive average annual consumption)]

This is all based on the philosophy that the reduction in general health of employees leads to general reduced productive value of any business, not simply Healthcare businesses; (Table 6).

The Amended Effects Modifier Equation

[1/(1-mpc)] = [GO÷(GO-[GO-VA])]=[GO÷VA]

demonstrates that 15 of 21 subsectors had a negative ratio value, and Healthcare [1.1182] ranked 9 of 15 consumptive subsectors; (Table 7).

Table 4. Ranked annual average changes of US-GDP subcategories based on nominal differences of the [Consumption:Value] ratio between 1960-1969 and 2005-2014

Category	[C:V] Ratio Nominal Difference Between 1960-1969 and 2005-2014
Mining	-0.4806
Construction	-0.4658
Educational services	-0.2011
Professional, scientific, and technical services	-0.1549
Accommodation and food services	-0.1340
Retail trade	-0.0725
Administrative and waste management services	+0.0435
Finance and insurance	+0.0452
Other services, except government	+0.0524
Utilities	+0.0895
Healthcare and social assistance	+0.1760
Real estate and rental and leasing	+0.1912
Arts, entertainment, and recreation	+0.2041
Management of companies and enterprises	+0.2151
State and local	+0.2161
Wholesale trade	+0.2281
Agriculture, forestry, fishing, and hunting	+0.2326
Federal	+0.2474
Manufacturing	+0.2489
Information	+0.2513
Transportation and warehousing	+0.3366

The Effects Modifier Equation

$$[1/(1\text{-mpc})] = [GO \div (GO - [GO - VA])] = [GO \div VA]$$

demonstrates 15 of 21 subsectors had a positive effects modifier impact effect with the Healthcare subsector [0.176] ranking 11 of 15 subsectors; (Table 8).

DISCUSSION

The health of a nation's Natural Personhood population is the heart of its GDP, and researchers should view it as a commodity. Furthermore, researchers should investigate the Natural Personhood as a universal constant that is applied to the life force of any nation's consumption and value calculations. Considering that many variables affect a system and each has an unequally weighted impact at any one moment, a complementary equal but opposite full spectrum system-based impact force must also

Table 5. US-GDP subcategories ranked based on US Dollars annual average ratio equivalent change in [Consumption:Value] for the years 1960-1969 and 2005-2014

Category	Annual $ in Millions Consumption Between 1960-1969 & 2005-2014
Construction	-256,986
Professional, scientific, and technical services	-91,195
Mining	-76,390
Accommodation and food services	-45,242
Retail trade	-33,459
Educational services	-20,548
Administrative and waste management services	+10,764
Other services, except government	+11,245
Utilities	+14,699
Arts, entertainment, and recreation	+21,160
Management of companies and enterprises	+40,870
Finance and insurance	+41,271
Agriculture, forestry, fishing, and hunting	+52,141
Federal	+94,831
Wholesale trade	+95,369
Healthcare and social assistance	+122,232
Information	+140,233
Real estate and rental and leasing	+148,913
Transportation and warehousing	+154,340
State and local	+159,013
Manufacturing	+866,202

exist. Under this premise, such a variable can universally affect the whole of a system instead of simply part of it as noted by historically observed Diminishing Returns and Ripple Effects in virtually any analysis. This complementary equal but opposite full spectrum system-based impact force is now termed an *Equalizing Variable*. With the fitness of an organism directly leading to its optimal growth, maturation, and survivability (irrespective of size and biologic or non-biologic nature), its health should be considered such an *Equalizing Variable*, which is in accordance with Einstein's Equivalence Principle. The *Equalizing Variable* also allows the generalization of the principle to other areas of systems based practice (economics, finance, business, etc.) and not isolated to physics as we know it historically.

Within the U.S.-GDP from 1960-2014 and of 21 main subsectors denoted per the U.S. Bureau of Economic Analysis, the subsector of Healthcare ranked as the sixth most U.S. dollar financially consumptive, the ninth most [Consumption:Value] ratio changed, the ninth most Effects Modifier nominal ratio changed, and the eleventh most [Consumption:Value] nominal ratio difference changed under the time periods

Table 6. US-GDP subcategories ranked based on US dollars annual average ratio equivalent change in [Consumption:Value] and summed for the years 1960-1969 and 2005-2014

Subsectors	Annual US-Dollar Difference (Millions) 1960-1969 vs 2005-2014	Annual Amount x 0.176 Healthcare Equivalent [C:V] Loss	US-Dollar (Millions) Value Totals
Construction	-256986	-45230	-45,230
Professional, scientific, and technical services	-91195	-16050	-16,050
Mining	-76390	-13445	-13,445
Accommodation and food services	-45242	-7963	-7,963
Retail trade	-33459	-5889	-5,889
Educational services	-20548	-3616	-3,616
Administrative and waste management services	+10764	+1894	-1,894
Other services, except government	+11245	+1979	-1,979
Utilities	+14699	+2587	-2,587
Arts, entertainment, and recreation	+21160	+3724	-3,724
Management of companies and enterprises	+40870	+7193	-7,193
Finance and insurance	+41271	+7264	-7,264
Agriculture, forestry, fishing, and hunting	+52141	+9177	-9,177
Federal	+94831	+16690	-16,690
Wholesale trade	+95369	+16785	-16,785
Healthcare and social assistance	+122232	+21513	-21,513
Information	+140233	+24681	-24,681
Real estate and rental and leasing	+148913	+26209	-26,209
Transportation and warehousing	+154340	+27164	-27,164
State and local	+159013	+27986	-27,986
Manufacturing	+866202	+152452	-152,452
Total of Subsectors Summed Value Potential			-439,491

investigated. Despite the Healthcare subsector not being the number one consumptive subsector, the basic construct that Healthcare is inseparable from any one subsector brings to light its disproportionate and heavily weighted impact over all of the U.S.-GDP. This observation demonstrates a potential violation of Diminishing Returns, Marginal Utility, Ripple Effect and even the concept of Economies of Scale general laws. The utility and perceived effectiveness of the current Healthcare model has been eroded and is now nominally appreciable via the [Consumption:Value] ratio calculation herein. While the U.S.-GDP subsector of Healthcare is a separate nominal category, the author calculated and discusses it as a variable that can't be segregated from any one component of the U.S.-GDP.

Table 7. Ranked average annual effects multiplier ratio alteration change per US subcategory when comparing the average of 1960-1969 and 2005-2014

Category	EM Ratio Alteration From 1960-69 vs 2005-14
Mining	0.7503
Construction	0.8015
Educational services	0.8901
Professional, scientific, and technical services	0.9102
Accommodation and food services	0.9312
Retail trade	0.9543
Finance and insurance	1.0248
Administrative and waste management services	1.0288
Other services, except government	1.0332
Utilities	1.0572
Manufacturing	1.0956
Agriculture, forestry, fishing, and hunting	1.0960
Healthcare and social assistance	1.1182
Arts, entertainment, and recreation	1.1354
Real estate and rental and leasing	1.1581
State and local	1.1647
Management of companies and enterprises	1.1692
Wholesale trade	1.1839
Information	1.1902
Transportation and warehousing	1.1961
Federal	1.5819

Moreover, when correlating each U.S.-subsectors calculated [Consumption:Value] ratio to a U.S. dollar value and then adjusting for a [+0.176] consumption alteration effect, an equivalent nominal monetary value is calculably appreciated for each subsector. When all subsectors are summer, the annual U.S.-GDP equivalent nominal monetary value potential of $439,491,000,000 is a observed as a loss when comparing 2005-2014 average to the 1660-1969 average time period.

With this retrospective value used with the premise that Natural Personhoods directly are affected by their individual health (leading to direct Corporate Personhood end-product value gain or loss) the potential reallocation and investment of these salvaged resources could have led to a large U.S.-GDP mitigation of loss historically. This savings could have potentially had neutralizing effects on the U.S.-GDP nation debt, as it is currently observed in excess of 21 trillion dollars, and in turn affected the global economy as a system (or single unit depending on the perspective). These savings should not be lost going forward.

Table 8. Ranked average annual effects multiplier nominal change per US subcategory when comparing the average of 1960-1969 and 2005-2014

Category	EM Nominal Alteration Value
Mining	-0.4805
Construction	-0.4658
Educational services	-0.2020
Professional, scientific, and technical services	-0.1549
Accommodation and food services	-0.1343
Retail trade	-0.0725
Administrative and waste management services	+0.0435
Finance and insurance	+0.0452
Other services, except government	+0.0524
Utilities	+0.0895
Healthcare and social assistance	+0.1761
Real estate and rental and leasing	+0.1912
Arts, entertainment, and recreation	+0.2071
State and local	+0.2161
Wholesale trade	+0.2281
Agriculture, forestry, fishing, and hunting	+0.2326
Management of companies and enterprises	+0.2451
Federal	+0.2474
Manufacturing	+0.2489
Information	+0.2835
Transportation and warehousing	+0.3366

With Healthcare costs overall increasing drastically in the U.S. and only predicted to continue on that course under its current business model (fee for service with minimal preventive and lifestyle medicine application), the value perception of the U.S. Healthcare industry will continue to be nominally devalued not only monetarily, but perceptually as well. Of the 21 subsectors investigated, the author noted 15 as consumptively devalued (71.4%) from 1960-2014. The U.S. government's rankings are of significant interest as the Federal and State government as U.S.-GDP subsectors were ranked three and four of 15 most consumptive [Consumption:Value] ratio alteration, four and seven of 15 [Consumption:Value] nominal alteration, eight and two of 15 U.S. dollar consumptive, one and six of 15 Effects Modifier ratio alteration consumptive, and four and eight of 15 Effects Modifier nominal change consumptive over the time periods investigated. At no one point during investigation time did any governmental subsector have a positive productive value or positive U.S. dollar alteration per analysis.

Further discussion and direct investigation should address the fundamental issue of why researchers have noted these regulating governmental bodies to have increased

overall resource consumption for nearly six decades and as to why the CDC and BEA have such differing U.S.-GDP dedicated Healthcare dollar descriptions noted in formal government documents all available for public review.

To have governmental agencies and leadership cause such increased consumption of resource and mitigation of value (both realized and potential) causes one to think about what could have been and what could now be with new perspectives, accountability, and new business modelling in mind. With future value-based government leadership altering the trajectory of heavily weighted variables inside of the U.S.-GDP starting with revamping of the Healthcare subsector, a significant positive-value return on that investment will be highly probable and lead to increased value across all GDP subsectors.

This observation may not be isolated to the U.S.-GDP marketplace and could be intimately woven into other national economies, further impacting the global system and marketplace. New leadership vision must establish a firm alteration of Healthcare systems' trajectories based on calculable, value-based endpoints; this is likely to come from new business modelling coupled with preventive and lifestyle evidence-based medicine modalities.

When discussing options for a basis grade evaluation and implementation of the commodity value for a nation's health, their chronic disease incidence and prevalence rate could easily be a general starting point. However, when describing a single Natural Personhood's health, a Health Wealth Value (Washburn, 2016) is a viable and easily calculable start for this basis grade establishment and refinement.

This consumptive devaluing growth is akin to a biological pathology known as malignancy, as it grows uncontrolled and without consideration to the rest of its organismal unit (classically biological, however now discussed with both biological and non-biological units). By observation and use of the organismal duality concept between biological and non-biological units, along with the *Systems Relativity Perspective*, the evolution of an organic business model structure for both healthy and malignant structured businesses is observable and calculable.

Regarding national security, the health of a national population is the cultivating source for a healthy national defensive force. By sheer numbers, if a great proportion of a national population is diseased, there is a reduced national population able to perform for national defense purposes. With increasingly efficient and value-based Healthcare, national defense will follow accordingly, irrespective of technological compensatory advancements.

CONCLUSION

The author has retrospectively calculated and demonstrated a pattern of consumption and value production of 15 of 21 (71.4%) of the U.S.-GDP subsectors that are further resource consumptive. Additionally, the author notes a reduced value from 1960-2014. The interplay between a biologic and non-biologic unit is broached as an intimate aspect of the [Consumption:Value] based outcome measures noted in an economy.

This duality need not be simply construed as an abstract, fundamental interplay of an organismal unit in its analogous environment any longer.

This inseparable reality between the biological organismal unit and the non-biological organismal unit, with observed environmental variables impacting their respective health and further impacting their respective evolution in a system, is now expressed in theoretical calculation and numerical application (as noted by retrospective evaluation and discussed projected outcomes). This calculation brings to conversation the heavily weighted impact variable of human health inside of business and in turn, a national GDP as they are the same based on a magnified, relativity-based perspectives.

With the endpoint of a healthy business model being an increased product value, the U.S.-GDP noting a value loss inside 15 of 21 of its main U.S.-GDP subsectors from 1960-2014 is of grave concern. Despite great overall growth, there has been a diminishing return that could have been mitigated, limiting or simply negating the current US economic deficit. This observation brings to light a potential diseased state of the U.S.-GDP and could be construed as the opposite of healthy and simply chronically diseased.

This increased consumption of the U.S.-GDP is acting like a cancerous malignant business model, allowing for a near universal devaluation of the U.S. and in turn, global systems. While the U.S. economy has increased over the decades, it has been severely retarded by this pathology left unchecked and unaccounted for. Further data mining and investigation into the health of humans inside of businesses, national economies, and the global system overall along with their true nominal unit value needs to be initiated; for both Natural Personhood and Corporate Personhoods integrated systems benefit.

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