

## CHAPTER V

### CONCLUSIONS AND DISCUSSION

Because of the controversial nature of much of the following material, the limitations and qualifications of this study are listed first.

#### ***Limitations***

1. The range of United States current educational attainment examined is limited from a low of 72.7% (West Virginia) to 92.1% (Alaska) of adult population which completed high school and a low of 12.7% (West Virginia) to 38.3% (Colorado) which hold a baccalaureate or higher degree. There may well be significant relationships outside of these (current) ranges.
2. The relationships examined are largely between “education” in the aggregate and the other, primarily economic, factors. Significant relationships may exist for specific majors or vocations and / or other, highly desirable but non-economic factors.
3. Predominantly economic factors have been used in the evaluation and discussion. Rationally, different conclusions may have been reached if other more subjective criteria such as expanded “Quality of Life” considerations or individual growth / development had been used.

#### ***Overview of Significant Findings***

The following findings are particularly disturbing when the enormous amounts of money, time and effort invested in all forms of education and training are considered.

1. From 1980 the available data indicated a continuously falling real median wage and increasing poverty for individuals employed full-time which is not compatible with

the common belief or perception that there has been, is, or is likely to be a general labor shortage in the United States, at least not since 1970.

2. Despite popular belief and perception, in the aggregate, inflation adjusted annual income of individuals with less than a baccalaureate degree but with post-secondary education (which includes the majority of VOTE participants) continues to fall, albeit at a slightly lower rate than that of high school completers and non-completers, indicating a continuing oversupply not a shortage of employees with these qualifications.
3. The available data does not support the common belief or perception that there has been, is, or will be a shortage of employees with baccalaureate degrees in the United States, rather a good balance between supply and demand based on the stable per hour wage rate.
4. The only group with rising incomes indicating a possible shortage are those with advanced degrees. However this apparent increase may be due to additional time worked or non-employment (investment) income rather than any increase in the actual rate of employee compensation, as popularly understood.
5. Economic growth or development as measured by the annualized rate of change in the inflation adjusted Gross State Product although statistically correlated is not significantly affected by the educational attainment levels of the states expressed as fraction of the population which have completed high school.
6. Economic growth or development as measured by the annualized rate of change in the inflation adjusted Gross State Product is both correlated statistically and significantly affected by the educational attainment levels of the states expressed as

fraction of the population which have baccalaureate or higher degrees.

Unfortunately, this correlation is *negative*. That is a one percent increase in the fraction of a state's adult population is projected to result in a 0.8% *decrease* in its expected rate of growth. A simple cause-and-effect relationship is not posited, however this unexpected result indicates that anticipating an increase in state economic growth by simply increasing the number of college graduates is no longer a viable strategy.

7. Although there is a statistical correlation, a state's median hourly manufacturing wage is not significantly economically affected by the fraction of the population which have completed high school.
8. Despite popular belief and perception, the inflation adjusted minimum wage in the United States has consistently decreased since 1967, with only minor variation about the trend line.
9. The inflation adjusted quintile family income distribution in the United States remained substantially constant from 1947 until 1969, when the distribution began to increasingly diverge. Of particular concern is that this divergence is as much due to decreases in the inflation adjusted income of the lower groups as it is to increases in the higher income groups.
10. The distribution of income in the United States, as measured by the Gini coefficient, is the most unequal of any of the OECD countries, and is rapidly increasing.
11. "Quality of Life" as measured by the total, homicide, suicide, and accidental young adult death rates does not appear to be significantly related to levels of educational

attainment in the United States but some selected quality-of-life measures do appear to be significantly correlated to the Gini coefficient of equality of income distribution.

12. Many of the widely publicized problems of stagnant or falling “productivity” of American workers appears to be due more to abrupt and steep changes in their economic sectors’ Producer Price Index [PPI] than to any lack of motivation or training. That is, because of factors totally outside the control of the employees (as indeed, even the managers and officers).
13. An additional factor in the perception of stagnant or falling productivity is the existence of a dis-economy of scale effect for organizations larger than about 15 billion \$US in annual gross revenue in that profit measured as a fraction of gross revenue tends to decrease past this point. In 1998 there were approximately 90 American corporations in this category<sup>1</sup> up from 77 in 1997<sup>2</sup>. In 1997, the last year for which comparable data was available, the total gross revenues of corporations with more than 15 billion \$US was slightly more than 1/3 of the entire US GDP. Given the recent and continuing trend to consolidation in several major economic segments such as automobiles, communications, wide bodied aircraft and banking, resulting in the creation and/or expansion of organizations this size or larger, it is likely that “productivity, ” measured using several definitions of profits, will continue to fall from the dis-economy of scale effect alone. Of particular concern is the apparent tendency for business executives to

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<sup>1</sup> 500 Largest U. S. Corporations (1998, April 27) Fortune. (F1 -F20)

<sup>2</sup> 500 Largest U. S. Corporations (1997, April 28) Fortune F1 -F20)

base a decision to expand or merge on one set of criteria or definition of efficiency, and then to evaluate plant and/or worker “efficiency” using a different set of criteria or an alternative definition.

14. It now appears that “money” in the abstract rather than serving as a means of exchange and a measure and store of value, has displaced the traditional reality of the possession of raw materials, means of production, means of distribution and markets as the meaning of “wealth” in popular consciousness with all that this implies. As indicated in the discussion of the consumer and producer price indexes in Chapter 4, “Money” no longer has even a relatively common value across the population, and not only rapidly varies across time, but also abruptly varies between the sectors of the economy such that the “value” of their output abruptly varies not only in terms of “money” but in relative relationship. Effectively, money has been quantitatively “deconstructed.” Given that one of the major reasons given for post-secondary education by its participants was to “make more money,” and that the employer rationale for additional education and training has always been explicitly the “bottom line” it is of great importance to realize that this is now a highly nebulous and ambiguous concept.
15. There is yet another “money” problem. Beginning about 1824, with the publication of “Reflections on the Motive Power of Fire” (Réflexions sur la puissance motrice du feu) by French physicist Nicolas Léonard Sadi Carnot, the laws of entropy and thermodynamics have been developed, refined, and repeatedly verified. As part of this development, perpetual motion, that is the hypothetical continuous operation of an isolated mechanical device or other closed system

without a sustaining energy source has been proven impossible. Most people today are aware of this, yet many still feel sure that they can invest their capital such that, with no further effort on their part, it will indefinitely produce income which can increase the basic investment (compounding) and / or can be used for current consumption. If true, this indicates that money and “capital” now have no physical basis but are entirely an intellectual or virtual construction.

16. The preceding sections justify the statement that it is not longer generally possible using the “money” standard to usefully describe employee productivity in terms of sales, earnings or production per employee, as “money” no longer has a consistent or generally agreed upon meaning across time or between economic segments. At first, it appeared possible to use the CPI and PPI to “normalize” the money units however even a cursory examination indicates this is not only a highly subjective but circular process in which the indici are used to adjust the data that are used to produce the indici. It is now clear that much of the concern and self-flagellation about stagnate or even falling employee “productivity” has been generated, not by any actual changes in employee motivation, qualifications or dedication, or even management actions / activities, but rather changes in the unit of measurement (money) which are totally outside their control.
17. As an alternative, the use of production units such as tons of coal, customers served, or television sets per employee hour was considered, but this was also found to be highly variable across time and between industries. For example, in a basic category such as “raw materials - energy,” it would appear possible to use tons of coal per man-hour as a measure. The problem is that there are many types

of coal and many mining methods. For example, bituminous or soft coal is commonly mined using the open pit method and anthracite or hard coal is commonly mined using the cut and fill or deep mining methods, which inherently have very different production rates per man-hour. Thus, even in these apparently similar industrial sectors with static products very different baselines exist. Even with static and uniform products that are easily measured such as barrels of oil or thousands of cubic feet of natural gas, changing production conditions such as the depletion of easily accessible oil and gas fields or political unrest can result in apparent decreases in productivity which are totally beyond the control of anyone. Economic sectors which appear to have increases in productivity are also subject to this affect. For example, the consumer electronics PPI has greatly increased indicating among other things, significant gains in productivity. This “productivity gain” does not appear to be the result of any improvements in employee motivation or training, and indeed only minimally to (production) management actions such as the introduction of automatic insertion equipment, but almost totally the result of changes in the basic components. The original products were assembled from several hundred to several thousand discrete components. Integrated circuits which combined the functions of many discrete components into a single unit reduced the part count to less than a hundred. Continued application of this principal has resulted in LSI [Large Scale Integration], VLSI [Very Large Scale Integration], and the current ULSI [Ultra Large Scale Integration]. It is now possible to construct a high-performance multi-band radio using a single chip, a television using a few chips, certainly less than ten, and a personal computer with

literally a billion or more transistors with a few dozen chips. The conclusion is that while there has been great increases in productivity, or stated another way, great reductions in the labor required to produce, in some segments of the economy, in most cases these do not appear to be mainly due to improvements in employee motivation and training but rather changes in the basic materials / components and production process. As previously stated, static or falling productivity is also minimally connected to employee motivation and training. Therefore it appears that:

- 17.1. “Productivity” in the current economic, social, political, et cetera, environment is only minimally connected to specific education / training for employees, and what connection there is negative, that is insufficient education / training may reduce productivity, but it is doubtful additional education / training will or can significantly increase it.
- 17.2. Comparisons of “productivity” between / among economic sectors is generally a waste of time, especially if the comparison is money based as changes in the relative values of the currencies and / or commodities / services (the PPI) “swamp” or mask any actual changes.
- 17.3. The “Law of Diminishing Returns” applies to employee training and education just as it does to anything else. If the current employees are reasonably competent and motivated, in general it is doubtful that additional education and training will have any significant affect on productivity.



- 17.4. If “productivity” has suddenly become a problem, before any action is taken, the reason for the problem must be determined. As indicated, external factors beyond the control of either management or the employees are likely, and it is simply a waste of time to begin “training.”
- 17.5. As previously established, VOTE was specifically designed for and implemented in the c. 1890-1970 environment of expanding heavy industry, increasing mass production and sustainable entrepreneurial cash crop agriculture. The current environment of unregulated international commerce or “free trade” is so different from the environment in which VOTE was conceived, prospered and thrived that its continued viability in its present form is highly doubtful. These data render the accretion model of economic development more plausible as it shows how the model of profit maximization has changed because of the globalization of capital and internationalization of corporations. (See section on “Free Trade” in the Appendix)
18. The Accretion Model of Economic Evolution is one of the major findings of this study. As indicated in the extensive discussion in the appendix, the key to this model is the realization that existing economic, social and cultural methods and organizations are abruptly replaced only under exceptional circumstances by newer systems<sup>3</sup>. Rather these tend to be overlaid by the newer systems and continue to

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<sup>3</sup> For example, the imposition of collective agriculture under Stalin or the communes under Mao. Such drastic changes also generally are accompanied by social and political chaos.

co-exist at different levels within the overall economy. The following points are stressed:

- 18.1. Layers are as much social and cultural (perceptual) as economic
- 18.2. The gradual decrease in the apparent effectiveness of VOTE appears to be due to the increasing subordination of the traditional (domestic heavy industry, mass production and entrepreneurial free-holder agriculture) economy to a more global and service oriented economy.
- 18.3. VOTE still seems to be affective in some areas because these areas are still operating in the traditional domestic manufacturing or entrepreneurial agricultural mode. It seems almost certain that as soon as these areas convert to the newer modes of economic activity and their need for large numbers of highly trained (and well paid) employees is eliminated, this (residual) effectiveness will disappear.

**THE NEW DICHOTOMY BETWEEN ORGANIZATIONAL AND NATIONAL COMPETITIVENESS: THE ILLUSION OF MAINTAINING NATIONAL COMPETITIVENESS THROUGH PREEMINENCE IN HIGH-TECH INDUSTRIES**

A new general principal is that dominance by a trans- or multi- national corporation which is nominally American in a particular field, is no assurance that America will be dominant in that field or that “Americans” will benefit.

Many researchers include economic segments such as wide-body aircraft (Boeing-MacDonald-Douglas-Lockheed), telecommunications (MCI, Sprint, Bell, ATT, AoL), computer chips (Intel, AMD), communications satellites (Lorel, Hughes), computer programming (MicroSoft, Oracle) and bio-technology as some of the economic niches or segments where America will maintain its global economic competitiveness. The exact

composition of this group is unimportant. What is vital is that all of the significant organizations active in these sectors have research and production facilities and / or sub - contractors located throughout the world, and all of these organizations have demonstrated that they will source (produce) a product where ever it will maximize their short-term profits, even if such production and the resulting inevitable technology transfer seriously compromise the long-term national security and economic interests of the United States. This is a serious statement and examples are provided below:

1. Loral and Hughes, both divisions of the General Motors Corporation, transferred guidance and launch vehicle technology to the Peoples Republic of China when they contracted with the PRC to launch several of their communications satellites.
2. MicroSoft, IBM, Oracle and Novel-- Premier companies in personal computer software and networking have established offices in New Delhi and Bangalor India to take advantage of experienced programmers who earn about 20% of what a comparable programmer would earn in the United States. Significant amounts of the latest release of Novel Netware (v5) were created there. By 2020 software exports are expected to account for 20% of all Indian exports.<sup>4</sup>
3. Boeing -- When Boeing acquired McDonnell Douglas, in 1997, it also acquired McDonnell Douglas's extensive operations in China. McDonnell Douglas Chairman John McDonnell said in March 1997 that the merger "is good news for the Chinese airline industry." McDonnell Douglas's 1996 annual report says the company has at least 10 employees in China involved in the "co-production of and

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<sup>4</sup> See Schmit, J (1999, Feb 24) Software industry grows in India. USA Today B1-2.

spares service center for commercial aircraft." McDonnell Douglas assembles some of its MD-80 and MD-90 aircraft in a Shanghai venture, and procures parts and sub-assemblies from ventures in Shanghai, Chengdu, Xi'an and Shenyang. A November 1996 U.S. General Accounting Office report found that China National Aero Technology Export-Import Co. (Catic) purchased dual-use machine tools from McDonnell Douglas in 1994 and shipped them to China, ostensibly for "civilian purposes." (The factory produced parts for the B-1 bomber, C-17 military transport aircraft and Peacekeeper missiles.) In October 1995, 33,000 Boeing workers went on a 69-day strike to protest the company's decision to export jetliner production and technology to China, which "aims to build its own airliner industry with help from the West," according to articles in The Wall Street Journal published Oct. 13, 1995, and Nov. 10, 1995. On the 58th day of the Boeing strike, Chinese labor activist Harry Wu, who was expelled from China earlier in 1995, addressed striking workers and accused companies like Boeing of ignoring human rights abuses in the pursuit of corporate profits, The Wall Street Journal reported. The rally that day centered around what workers said was Boeing's practice of sending work and technology abroad in exchange for aircraft orders. Representatives from the machinists union contended that while Boeing used to make the tail section for its 737 plane in Wichita, Kan., workers in a military plant in China are now producing the parts for salaries of \$50 per month<sup>5</sup>. Boeing

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<sup>5</sup> An American unionized aircraft sheet metal worker earns at least 20\$ per hour. Assuming 2080 hours per year this is \$41,600 or 69 times what the Chinese worker will earn per year (600\$). It is unclear what type or how much education / training will enable the American worker to produce 69 times as much as his Chinese equivalent.

responded that the total number of jobs the company was exporting had fallen in recent years. The company also announced in 1994 that it would invest \$100 million in a factory to make tail sections for Boeing 737 jetliners, build a spare parts service center, and finance training programs for Chinese flight crews and maintenance workers<sup>6</sup>.

### **IS THE “FREE MARKET” STILL A VIABLE CONCEPT?**

It appears that most people and their political representatives in the United States have a pathological fixation on and obsession with the idealized free market as first described by Adam Smith in 1776 and elaborated by David Ricardo in 1817. Indeed, this ideology or philosophy has proven high effective, however since at least 1885, when Yale political science instructor Arthur Twining Hadley published his seminal work “Railroad Transportation, Its History and Its Laws<sup>7</sup>,” it has been known that the 1817 Ricardian theory of free enterprise does not apply to industries having large permanent investments and a high proportion of fixed to variable costs. Hadley conclusively showed these factors to be sources of (economic) instability and to result in a tendency toward combination, that is restraint of trade. This should be of particular concern to VOTE stakeholders as the segments of the economy which are generally projected or forecast to be the mainstays of the American economy in the next century all have high and continually increasing permanent investments, and all have very high ratios of fixed to variable costs. These segments include wide-body aircraft (Boeing-MacDonald-Douglas-

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<sup>6</sup> see <http://www.irrc.org/labor/Boeing.htm>

<sup>7</sup> Hadley, Arthur T. (1902) Railroad transportation, its history and its laws, New York : G. P. Putnam's Sons, call number 385 H1 1r OSU Main Library

Lockheed), telecommunications (MCI, Sprint, Bell, ATT, AoL), computer chips (Intel, AMD), communications satellites (Lorel, Hughes) and computer programming (MicroSoft, Oracle). Other frequently mentioned areas such as bio-technology also exhibit the same patterns of capital investment (very large start-up costs with delayed payoffs) and allocation (primarily items which cannot easily be liquidated and the capital reallocated).

***Research Questions and summary answers:***

**(1) Given that median wage rates are either stable or decreasing for all educational attainment levels below advanced degrees, how can a general “labor shortage” be declared to exist? (See table edwages in Chapter 4)**

The usage of a special definition of “shortage” with the criteria of a non-zero “skills premium” does indeed indicate a “shortage.” This confusion arises because of the assumption that common words are being used in common ways when in reality a very special and particular meaning was intended by researchers in a very limited field, that of Labor Economics.

**(2) While selected individuals within identifiable target groups can be documented to have attained improvements in their economic status and stability, why has it been so difficult to improve the economic status of their entire group or cohort? Indeed, official governmental data indicates that the fraction of all U. S. full-time employees with incomes below the poverty level has not fallen but has increased at an almost constant rate of about 0.25% per year from about 24% in 1973 to 31% in 1995. (See chart povwages.xls in Chapter 4)**

This appears to be a classic example of an “Error of Composition” in which the whole is assumed to be represented by its parts. In retrospect, from an examination of the data, it is clear that what is actually occurring is a redistribution of income within the lower income categories, not an increase. That is for every person in the lower income categories who advanced their income, another’s income was reduced. It is a game of musical chairs with 10 players and 9 chairs. When the music stops there will always be one person without a chair, no matter how well the players are trained and conditioned, although a different player may well be “out” each time. This is discussed in greater detail in the section in the appendix “Aggregate / Generic vs. The Individual / Case model.”

**(3) Although this study concentrates on mainly the non-agricultural aspects of vocational education, Agricultural Education formed one of the legs of the triad which supported the introduction of vocational education and it continues to be a major component of vocational education in many rural areas, especially at the secondary level. Therefore this study also asked, at least in an introductory way: Does governmental data exist which indicates any clear trends for Agricultural Education similar to the data for Vocational Education, and if so what do these trends generally indicate?**

As the section in chapter four makes clear, the governmental data for the prices received for the major agricultural commodities including livestock is not good, and indicates a drastic change in the near future in that on the average, the sale price is at or below the cost of production, indicating a significant fraction, 50% or more, of farmers and ranchers are losing money. Indeed, for some crops such as corn the sale price is

projected to be zero by 2005 and current hog prices (Jan 1999) of \$7.00 per cwt. are lower, even in current dollar terms, than during the depths of the last depression and are far below depression era prices when inflation is considered. This appears to be a classical situation of the combination of a disappearance of an established market (export sales) either because the customer has decided to produce their own, or because the customer no longer has the funds required to pay for the merchandise, and consolidation of production into a few, very large organizations which have better access to capital, technology and legislators / regulators. In short, the era of the small independent farmer and rancher is generally over. The future of Ag-Ed appears to be the contextulization of learning in rural areas rather than preparation for independent production and self-employment.

***Primary (Implicit) Research Question:***

**Does VOTE remain a viable educational option?**

If by objective data, two of the three primary groups (the learners and the government) are in general not receiving what they are paying for and expect from VOTE, and the third group (the employer) is intensely dissatisfied with “education” in general and VOTE in particular, despite continuing and massive efforts to amend and revise it, there appears to be little or no incentive, requirement or rationale to maintain the current programs and implementation of VOTE as a function of government at great public expense.

***Major Conclusions of Research***

These conclusions are highly disturbing, and while these factors in items 1 through 3 were known to exist, the extent or proportion to which they exist and appear to control organizational and public policy was not anticipated.



1. There appears to be a significant divergence in world view or perception of the state of the United States economy and society between the business and governmental leaders and the majority of people. This appears to be primarily due to the different criteria used. One hand there is a rapidly rising stock market with considerable financial activity, and on the other hand continual reduction in both the number of higher paying manufacturing and industrial jobs and reduction in the wages, benefits and working conditions of the remaining jobs. Abstractions such as increases in the per capita gross domestic product or the Dow -Jones index appear to have largely replaced concrete measurers of the status and attitudes of society such as the infant mortality rate and existence / prevalence of poverty among full time workers.
2. As an extension or amplification of item 1, the significance of the increasing divergence in U. S. per capita income as indicated by the rapidly rising Gini coefficient does not seem to be appreciated. As indicated in Chapter 4, significant income disparity is highly correlated with quality of life factors such as murder rates and individual tax levels. It is the height of folly to assume that the United States will somehow avoid the social instability and alienation between citizens and government that all other nations with high Gini coefficients are experiencing. Areas in the United States with high local Gini coefficients, such as many major urban areas, are already exhibiting many of these symptoms such as high crime rates and random violence, which are contained only with extensive (expensive) and frequently extra-legal law enforcement measures.

3. Major “American” corporations are now American in name only. The time when the Secretary of Defense and former President of General Motors, Charles W. Wilson could in truth say “What is good for General Motors is good for the United States, and what is good for the United States is good for General Motors” are long past. The tacit and frequently sub-liminal assumption that if a community supported a profit making organization that the profit making organization would in turn, at least to some extent, support the community, no longer appears viable. At least in part, this is because the organizations have become so large that they can no longer identify with a nation let alone a community, and the actual policy and decision makers may reside on the other side of the world.
4. Based on economic performance to date, there appears to be little rationale for continuing publicly funded and administered VoTech as currently implemented. The atrophy of heavy industrial and mass production operations in this country have largely rendered VoTech obsolete because of the elimination of the need for large numbers of highly trained, skilled, and paid employees. As indicated in Chapter 4, almost all new jobs will be in the service sector and the higher paying jobs in this sector such as doctors, lawyers, accountants, and teachers all require professional training and licensure which is not within the scope of vocational education. The bulk of the new service jobs require little skill or training, which in most cases can be done on the job by the employer. There will be a need for highly skilled technicians and technologists in some specialties and areas but proprietary institutions are available to provide the required training and education, if the employer is unable or unwilling. Rather than continuing to fund the existing

public “generic” VoTech system, it appears that direct grants to qualified candidates to cover tuition and other costs at these proprietary institutions would be more cost effective.

### ***Contrasts with existing studies and contrary findings***

As indicated in the earlier sections, a careful review of the literature did not indicate the existence of any study of this type in at least the last twenty years. While the findings and conclusions of this study are directly contrary to many currently held beliefs and feelings, there does not appear to be any data, other than individual anecdotes, which contradicts this study. Where this study is vulnerable to criticism is that unavoidably qualitative criteria were used to evaluate the “meaning” of the data. For example, it can be argued that the increasing Gini coefficient is a good thing in that it indicates that the hard working and talented are at last receiving their fair share over that of the slackers and dullards, that most American workers have been paid too much in the past, and lower wages help make America more “competitive.” Such appeals to economic and social “Darwinism” are not persuasive to this researcher but appear to be more of a rationale or excuse than a justification.

### ***A few modest suggestions ...***

It should be noted that as it has been demonstrated that [lack of] VOTE or “education” is neither a significant cause nor “cure” for the declining median wages and increasing disparity of income, with all that this implies, many of the following actions suggested do not directly involve either academic or vocational “education” but actions / activities which should help to attain some of the historical stated and implicit goals / objectives of

traditional VOTE by other means. While admittedly a value judgment by this researcher, the VOTE stakeholder goals and expectations developed in Chapter 2 generally remain highly desirable and from the historical record appear necessary for a reasonably stable and functional democratic society and culture. As indicated by the accretion model, traditional VOTE actions and activities are no longer applicable to, and thus no longer produce the expected outcomes in the newer and increasingly dominant layers of “Value Extraction” (Cannibalistic) and “Trans-national” Capitalism. Therefore, alternative methods must be explored and eventually adopted, even if these appear to be incompatible with the increasingly subordinate traditional layer of heavy industry, mass production and entrepreneurial cash-crop agriculture for which VOTE was specifically designed.

These following suggestions are highly controversial, however the intent is not in any way to replace or overthrow the “Free Market,” but rather to insure its continuing relevance and ability to function. As an analogy, operation of trucks on the public roads in excess of 160,000 pounds gross vehicle weight at excessive speeds by unlicensed drivers is not permitted. These limitations or restrictions are imposed not because of any ideological beliefs in the inherent evil of large trucks, but because the public roads must be used by everyone, because the public roads are paid for by the public, because the public roads are inordinately damaged by overweight trucks, and because operation at excessive speeds and /or by unqualified drivers has been shown to result in unacceptably high accident rates. Note that these restrictions do not prohibit vehicle operations at very high speeds or the transportation of very heavy loads, but that high speed operation must take

place on a race track, and extremely heavy (or large) loads must be transported on a railroad or barge line, or they must be broken down into smaller loads. While it is certainly possible that public roads could be constructed that would allow safe operation of “180 wheeler” trucks at 200 miles per hour, the public has determined that this would involve excessive investments in roads which would directly benefit only a very few individuals and have opted instead to limit truck size and speed to what the existing infrastructure can reasonably be expected to safely accommodate. Similarly, the currently existing American financial, judicial and other social and governmental “systems” and practices also appear to have upper limits on the size and “speed” of business operations which these can safely accommodate. Therefore the following palliative or ameliorative measures, in that these address the symptoms and not the root causes <sup>8</sup>, are suggested:

1. Limitations on the absolute size of organizations that are allowed to operate under the rules of the “free market,” that is before they are treated as a monopoly public utility with limitations on their rates of return, public representatives on their boards of directors, and operational oversight by a governmental organization. This may vary from economic segment to economic segment but as indicated in the section of the “Economy of Scale” in chapter four, most likely should be less than 15 billion \$US gross sales per year.
2. Limitations on the amount of “market share” an organization can have and still operate in the “free market,” that is before they are treated as a monopoly public utility with limitations on their rates of return, public representatives on their

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<sup>8</sup> Which in the opinion of this researcher is the combination of unlimited rapid growth in the size and complexity of economic organizations combined with the explosive development of unregulated

boards of directors, and operational oversight by a governmental organization.

Restrictions and limitations on vertical integration may also be required. For example there is a trend for automotive manufacturers to establish their own retail outlets in competition with their independent franchised dealers. In areas where this has occurred, the number of dealerships has been reduced, competition eliminated, and the number of independent businesses paying local taxes and providing employment decreased. Because the automotive corporations also have divisions that provide consumer financing and insurance, establishment of manufacturer owned retail stores also adversely affects local banks, other local consumer credit providers, and independent local insurance agents.

3. Limitations on the rate at which an organization of significant size can grow and still operate in the “free market,” that is before they are treated as a monopoly public utility with limitations on their rates of return, public representatives on their boards of directors, and operational oversight by a governmental organization. Whether done with the intent to defraud or as a result of “irrational exuberance” by the officers and directors, extremely rapid growth of an organization appears to have a high correlation with serious problems frequently leading to bankruptcy.
4. The family farm has well served the American public, and the re-imposition of state bans on corporate farming, and prevention of vertical integration of the food supply appears to be highly advisable if it is to be retained.

5. The total annual GNP of the United States is estimated to be about \$7 trillion [1998]. The value of the stocks traded on the three major exchanges (NYSE, AMEX, and NASDAQ) are approaching this amount per day, while foreign exchange contracts traded reach this value every few days. It is clear that majority of this activity must be simply speculation, and thus serves no useful social, economic or commercial function. It is therefore suggested that a small tax be place on each individual transaction<sup>9</sup>. A small tax should have minimal affect on legitimate transactions because there are so few of them, but multiple trades within a short period of time would incur a heavy tax liability thus discouraging this type of activity. An alternative would be a special “capital gains” tax on investment profits. This tax could provide for a 99.9% tax on the profit gained from the sale of an asset held for less than 10 days decreasing to a zero tax on profits from assets held for three years or more. The objective of this is to divert the capital and more importantly the time, energy and attention of the very highly talented people involved in these activities into more productive and socially useful activities than simply making “money,” which as demonstrated in of Chapter 4 has become an increasingly meaningless and abstract “commodity.” These are not new proposals, but have been rejected on the grounds that such taxes would simply cause speculative trading activity to move off-shore. This researcher does not find this argument particularly convincing. Prostitution and narcotics are two highly profitable activities which are unlawful in most areas, and the argument is not

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<sup>9</sup> This seems to have been first proposed by Tobin.

made that by being made illegal, these are simply being driven “off-shore.”

Indeed, that is the entire idea.

6. Licensure requirements for officers and directors of organizations above a given absolute size or market share, which should include criminal record and work history checks, physical and mental evaluations, and mandatory random drug and alcohol testing. It is accepted that individuals in occupations or professions such as truck drivers, air line pilots, teachers and even barbers / hair dressers can be required to demonstrate a minimal competency in their specialties with no history of egregious anti-social activity, therefore it does not seem unreasonable to require the same from individuals whose actions and activities may affect hundreds to millions of times the number of people as these professions and occupations do.
7. A useful operational definition of the size where the above restrictions should apply is any organization that is too big to fail is too big to operate as a free market organization because one of the basic assumptions of the “free market” is the elimination of inefficient organizations and the growth of the more efficient. Recent examples include Chrysler (automotive), Lockheed (aircraft), Continental Illinois (banking), and Long Term Capital Management (finance).

***Some possible palliative measures specifically intended to slow the increase in, and if possible reduce, the Gini coefficient***

As indicated in the discussion in chapter 4, the Gini coefficient indicates the degree of equality (or inequality) in the distribution of income. There appears to be significant correlations between the Gini coefficient and many inter-related items which are generally considered to be important in a society or culture such as individual income tax rates,



average life expectancy and crime rates. Because the Gini coefficient appears to be predictive rather than causal, extreme care must be taken in attempting to reduce it if even worse problems are to be avoided. For example, one of the most direct ways to reduce the Gini is a confiscatory tax on high income individuals and organizations with either a direct subsidy check to low income individuals and/or highly subsidizing goods and services for them. Historically, from classical Rome to post-war England, this has had several bad effects: it greatly discourages risk taking and effort by the general population above the minimum required, it introduces extensive and eventually oppressive governmental intrusion into all areas of society, and it encourages the formation of a “leisure class<sup>10</sup>” albeit at a low standard of living. The following suggestions are specifically designed to avoid these problems as these will benefit only the individuals that are gainfully employed without eliminating the possibility of personal gain and advancement, although these do (intentionally) discourage some currently popular methods of individual gain and advancement. These suggestions should not require any additional governmental staffing or data collection, only the application of existing data in a new way.

1. Indexing the Minimum Wage using the CPI. Individuals earning the minimum wage are living so near the edge that any reduction in their purchasing power is apt to directly result in reductions in the basic necessities of life such as food, shelter and clothing. To avoid this, it is suggested that the minimum wage be adjusted in increments of not more than 5 cents per hour. Assuming 2,080 hours of

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<sup>10</sup> As in the devil finds work for idle hands.

employment per year, a one cent change in real income is equivalent to \$20.80 which to most people is not a major sum, but which may well be the difference in eating or not eating for several days for individuals at this income level.

2. Indeed, given the continual rise in the expected minimum skill and educational levels, a case can be made for not only indexing the minimum wage, but for its gradual increase in real dollars to reflect these rising requirements. A two per cent compounded real increase, over inflation would result in the doubling of the minimum wage in about 35 years, while a five percent real increase would double the minimum wage in about 13 years. Increases in this range do not appear to be excessively rapid, especially given the greatly increased (and increasing) demands and expectations of skills and abilities of employees, even those paid minimum wage. Indeed, simply returning the current minimum wage of \$5.25 per hour to the high point of \$7.21 (CV1996\$) in 1969 over 5 years would require increasing the minimum wage by \$0.40 (7.6% simple) per hour per year before adjustment for inflation.
3. Defining personal and dependent income tax deductions using the government's definition of poverty, with only nominal (income) taxes collected from individuals and families at or below these levels.
4. Defining individual progressive income tax brackets in terms of multiples of the preceding year's median wage rather than as arbitrary fixed increments. This is specifically intended to cause the tax rates of the higher income groups to increase if their compensation increases while the income of the majority is static or falls. With the selection of proper brackets, this can avoid the need to increase the tax

rates on falling incomes (as discussed in the section on GINI) to maintain a given level of governmental revenue. Additionally, this would provide considerable motivation to avoid layoffs or the reduction of wages to increase corporate profits, as one of the effects would be to increase the income tax rates of individual executives and stockholders who have benefited from and directly or indirectly control this.

5. Replacing the corporate income tax with a corporate gross receipts tax to reduce tax avoidance / evasion by “transfer pricing.” This has always been a problem with organizations operating in more than one state, with the temptation to structure the accounting practices such that the amount of profit was maximized by reporting the generation of profits in the state with the lowest taxes. With the advent of trans-national corporations this has assumed grotesque proportions, with corporations chartered in such major industrial “countries” such as Aruba, Andorra and Liechtenstein with no income, gross receipt, franchise or other corporate taxes indicating literally billions of dollars of profits while corporations associated with them, chartered in the United States and other countries with “normal” tax structures, reporting only minimal profits and even “losses.” An alternative is to impose “unitary taxation” which allocates profits proportional to sales. For example if a corporation does 20% of its combined business in Oklahoma, then 20% of its combined profits are held to be earned in Oklahoma, and subject to Oklahoma taxation.
6. Re-instituting a steeply progressive corporate income or gross receipts tax structure in place of the current single bracket. This is specifically to discourage

mergers and acquisitions and the formation of mega-organizations. As indicated, the principal of “economy of scale” no longer appears applicable to organizations with more than approximately 15 billion \$US in gross revenues.

7. At the state level implementing a progressive rather than flat rate tax structure on real estate and personal vehicles. If possible the brackets should be structured using multiples of the median assessed residential and vehicle evaluation rather than fixed arbitrary limits. This is specifically intended not only to insure that individuals in the lower income brackets can continue to afford homes and vehicles by reducing their tax burden, but also to discourage ostentation and unnecessary spending on non-productive items and activities by individuals. This is also intended to discourage the creation of mega-plants and mega-malls.
8. Because of the increasing globalization of credit and the existence of a large pool of [euro] dollars<sup>11</sup> outside the control of the Federal Reserve Board, the traditional ability of the “Fed” to manage the U. S. economy by interest rate changes has been greatly reduced. Additionally, interest rate increases tend to have the most severe impact on those with the lowest incomes not only by increasing their cost of credit but also by reducing their employment, while actually boosting the return to (that is income for) individuals in the upper income brackets. It is therefore suggested that the Federal Reserve Board should be empowered to set the rate of a special tax on high-income individuals and organizations, with the proceeds going to the U. S. Treasury, to “fine-tune” the economy. This tax could range from 0 to 60%

or more on all individual incomes over \$250,000 per year and 0 to 10% of all corporate gross receipts over \$100 million per year. This will avoid the Fed attempting to moderate speculative or inflationary activity by those in the highest income brackets by bleeding those in the lowest income brackets white through interest rate hikes and will also serve as “motivation” for those in the highest income brackets to avoid decisions and actions likely to result in activities that will require such intervention.

9. Because the Gini coefficient is such a useful predictor, it is suggested that the federal and state governments compile Gini coefficients by geographic, company and economic sector. The data required is already collected in the form of company W-2 statements. This should provide early warning about shifts in the aggregate Gini, and can be used to indicate which companies or economic sectors are likely to be good partners in economic development projects.

***Some specific recommendations for government on “Education”***

1. Conduct a complete zero-based life-cycle evaluation of the expected “value” of education and training, with all assumptions explicitly stated and evaluated, every four or five years, with annual up-dates. This should specifically cover primary, secondary, vocational and college education and should include non-economic as well as economic factors. While educators must be included in such an evaluation,

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<sup>11</sup> Recent popular media reports indicate that 90% of higher denomination American currency is in circulation outside of the United States. This does not include the huge pool of “money” denominated in dollars but which exists only as ledger entries or computer bytes.

other qualified professionals such as accountants, actuaries, penologists and demographers should form the majority, as most of the questions are NOT specifically educational.

2. As for Item 1, except the cost rather than the value of education at each level is calculated. This should specifically include opportunity costs and alternative return from the investment of the cost of the education. This should include separate costs to the individual, the parents, the employer, and the community at large. As indicated in the section in chapter 4, when more sophisticated analytical methods such as net present value / discounted cash flow[NPV/DCF] or internal rate of return [IRR] analysis is used, the common and traditional assumptions about the economic value of education no longer appear to be operational.
3. The third and most controversial / contentious step is the combination of data from items 1 and 2, to conduct a public, in-depth, comprehensive and meaningful cost : benefit analysis of “education” under current conditions with the specific intent to determine how much and what types of education to publicly fund and / or require. The analysis in chapter 4 using (admittedly overly) simplifying assumptions and accepted evaluation tools such as “Discounted Cash Flow” demonstrates the urgent need to perform this study. Particular attention should be paid to the identification and separation of predictive and causal variables / factors.
4. Given that VOTE is becoming increasingly irrelevant in its present format does not necessarily indicate that VOTE should or will atrophy much as the classical apprentice system has done, but rather it should be transformed into one or more systems which will more closely meet the needs of its stakeholders / customers.

4.1. Such changes are in accord with current ideological and economic trends which emphasize the privatization of many formerly governmental activities such as trash hauling, public safety, prisons and other aspects of education. In 1991 an extensive evaluation of VOTE was performed by senior staff members of The World Bank [The International Bank for reconstruction and Development] and presented to the Executive Directors. [Middleton] While there are drawbacks, the following advantages were attributed to private sector VOTE. “Training in the private sector -- by private employers and in private training institutions -- can be the most effective and efficient way to develop the skills of the work force. In the best cases employees train workers as quickly as possible for existing jobs. Costs are low compared with training before employment, and trained workers are placed automatically in jobs that use their skills. Larger employers often have the technology and their supervisors have the expertise to train in both traditional and newly emerging skills.”

5. All education, not just VOTE, needs to be come much more general and diverse. Such increased diversity will decrease efficiency in the narrow “drill and test” sense but will increase effectiveness. Education must be part of the (not the) preparation for life, of which “work,” while a substantial part, is only a part.

5.1. Using strictly economic considerations, there appears to be little or no rationale for retaining for the traditional 9 month school year. Re placement of the existing 12 year by 9 month (108 months total) program with a 10 year by 12 month (120 months total) programs not only increases available classroom time by 11%, and improves facility utilization by 33%, it also eliminates the need for special summer recreational and employment programs and/or the need for the parents to arrange (and pay) for summer daycare. Because this program would graduate the students at age 16 rather than age 18 this will allow additional time to accumulate money for college if they start at the current age of 18 or will allow them to begin (and complete) college / VOTE or start full time work two years sooner than is now the case. In either case this is two more full years of employment. The current average wage is about \$22 thousand per year, so this change by itself will increase lifetime earnings by \$44,000 on the average and should help alleviate the current reported “shortage of labor.” If the goal of “education” is “to make more money” this seems like a quick and easy way to do so.

5.2. It is the opinion of this researcher that this additional classroom time should not be used for more academics of limited use to the student but for instruction and participation in the many non-academic activities which people are expected to be able to perform in our society but which have generally been learned through observation and imitation of their parents or other adults. As has been detailed by many other researchers, the



traditional nuclear family has “fissioned” and contact between our children and adults engaged in practical and useful tasks has become increasingly limited. Many of these tasks have significant VOTE content. For example the ability to (re)wire a lamp, clean a chicken, use a chain saw to cut wood, replace a light switch or outlet, fix a dripping faucet, change a baby’s diaper, sweat a joint in copper tubing, change spark-plugs in a car or lawn mower, tape and sand a drywall joint, saw and nail a board, drill a hole, drive a screw, and paint a wall. Topics in Home Economics of importance to both genders include how to sew on buttons, how to cook edible and nutritious low-cost food, how to avoid getting salmonella poisoning, how to wash clothes, how to select suitable clothing that is good value for the money, the cost of credit, the magic of compound interest, and how to buy a car. Other topics which in the opinion of this researcher which would be highly beneficial include the standard Red Cross Emergency First Aid class.

- 5.3. Other highly useful classes which do not appear to currently exist would cover explicit financial planning (such as regular and Roth IRAs, 401K plans, and mutual funds) and conditions of employment (the doctrine of “employment at will,” prohibited workplace conduct such as sexual harassment, regulatory agencies such as the EPA and OSHA, subrogation of inventions and discoveries to the employer, non-disclosure agreements, and non-competition agreements.) The existing “civics” classes should be expanded to explicitly cover a citizen’s rights and responsibilities. For example, how many people know that there is a legal duty to report the

commission of a felony and the failure to do so makes you liable for conviction as an accessory after the fact even if you did not participate in the crime? Also, specifically in Oklahoma, what is required to force a referendum or impanelment of a grand jury, what is required to get a citizen initiative on the ballot, and how do you register to vote?

5.4. As controversial as these topics are, it is the opinion of this researcher that even more contentious topics such as firearms familiarization and safety training could usefully be included. At the very least such classes would help eliminate or reduce the unhealthy mystique that firearms have attained in our culture. Hopefully such classes would help to reduce the incidence of firearms related accidents and incidents but in any event would establish some factual basis for beliefs and opinions in an increasingly polarized and contentious area. As a useful “rule of thumb,” the louder the special interest groups complain about the inclusion of certain topics, the more necessary these topics are.

6. The practitioners of VOTE should immediately and aggressively respond to all unsubstantiated charges and allegations against VOTE and/or its graduates. The continuing tendency of VOTE practitioners and the other two stakeholder groups, (Students/Employees and Government) to passively accept and defer to the demands, assumptions, perceptions and pronouncements of the fourth group, Employers, in an effort to reach an accommodation and to maintain a semblance of accord is now counter-productive. Indeed, it is also counter productive for the employers in the longer term because it helps to promote and maintain self-

delusions and myths which are likely to result (and have resulted) in considerable professional and personal problems. These include the illusions of being irreplaceable, omnipotent, and “always right.” Lord Acton accurately observed “Power corrupts and absolute power corrupts absolutely.” VOTE does itself and its stakeholders no favors when it acts as a whipping boy for management and passively accepts the responsibility for claims of lower profitability, lower productivity and decreased competitiveness. Such acceptance is even less justified and more damaging when the organizations making such charges are recording record profits, record share prices, record dividends and record salary and bonuses for its high level management as most private sector organizations are currently doing.

***Some items and areas that need (more) research***

1. It has been demonstrated that secondary and post-secondary “education” in the aggregate does not correlate well with a state’s economic growth or many quality-of-life factors. Further research is indicated to determine if there any significant correlations with specific VOTE occupations / trades and / or college majors and if so how rapidly does this correlation change over time.
2. Recently there has been considerable effort to establish what a person “must know” in order to function as a contributing member of society. This reinforces the folk wisdom that “smart is better than stupid,” and “knowledgeable is better than ignorant.” However, it does not appear that any effort has been made to determine if particular items are predictive or causal. This is not a esoteric point of only academic interest. If these items are predominately predictive, and the

students are drilled in them, the only affect will be to destroy their utility as a predictive factor as, by definition, these will have no significant affect on “productivity” or other desired traits. If however these are predominantly causal, then it should possible to take an individual that is currently contributing to society at a low rate, provide them with only the specific skill or knowledge, and observe an increase in their contribution. Individuals and society have limited resources of time and money for education / training, and these limited resources must be concentrated in areas with maximum returns, which does have several different definitions. What must be avoided is the tendency to teach things simply because these can be taught cheaply, don’t make a mess in the classroom, are “safe,” and are easily testable. Therefore, research to determine if the suggested “things-that-everyone-must-know” are causal or predictive is urgently needed. If what is important is actually socially acceptable behavior, speech, and appearance, combined with hard to define but still concrete and “teachable” skills such as empathy, long and short term memory / recall, and the ability to rapidly acquire and process abstract information, then the existing educational institutions and methods may not be the most efficient / effective way to accomplish this.

### ***Implications for Professional Practice***

1. Learners / students must be made aware that they can no longer reasonably expect consistent or long-term employment, regardless of how well educated or talented they may be nor how well they perform their job, nor should they expect an increasing income or standard of living.

- 1.1. The traditional assets of knowledge, hard work, punctuality, good grooming, personality, and so forth impact employment only by their absence. That is if a person is habitually tardy or lazy they will be discharged but they will not be retained just because they are punctual or hard working.
  - 1.2. In a global economy, employment or non-employment for most people is no longer a matter of personal merit and is far more likely to be determined by factors totally outside the individuals control such as shifts in the PPI index of their current economic sector, changes in consumer demand, foreign exchange rates, or decisions by foreign governments about import quotas or tariffs.
  - 1.3. It is now futile to attempt to build a career based on loyalty to an organization or even a profession, occupation or trade. All economic and most other organizations are now subject to continual re-organizations, mergers, buy-outs, and, so that even if considerable personal rapport is attained with the current management, who may be entirely honest and with best of intentions, these can and frequently are replaced overnight.
2. Learners and students should be encouraged to organize their life around their family and community and not their occupation. They should be encouraged to work to live, not live to work.