# PRINCIPAL CAUSES OF CHANGES IN U.S. PRODUCTIVITY

BY

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Abstract

Title of Thesis: PRINCIPAL CAUSES OF CHANGES IN U.S. PRODUCTIVITY

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Productivity growth in the United States has taken a downward trend since the nation entered the decade of the 60s. This issue is contemporary because its consequences are apparent in every American industry. Government, business and individuals are equally affected because prices continue to escalate. Hence, the cost of living appears to be unmanageable. Several factors have contributed to the slump in United States productivity growth. The most important of these factors are low capital investment, strained management and labor relationships, insufficient research and development spending, low employee motivation, the attitude of organized labor unions, lack of national commitment, high government spending and the general managerial philsophies.

There are six parts to this thesis: the first deals with

definitions and concepts, historical review, and the nature of the United States economy, the second presents productivity trends by sector, the third entails comparative productivity trends of the U.S. and Japan. The fourth section presents the effects of other major factors on productivity including management - labor relations, the energy crisis, and a detailed analysis of U.S. managerial processes. The fifth section deals with present and future produtivity trends, and the final section gives conclusions and recommendations.

This thesis presents a descriptive analysis of the causes of the United States productivity slump. Historical information is used to make significant comparisons where necessary. The objective of this thesis in its various parts, is to present facts surrounding the United States productivity decline in the wake of controversy over the issue.

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# CHAPTER I

## Definitions and Concepts

Productivity is defined by dictionaries from many perspectives. Some define it as the degree of effectiveness of industrial management especially the effectiveness in utilizing labor and equipment. Others look at it as the ability or capacity to produce in abundance or richness in output. whatever definition there is, the key words around which productivity is built are effective utilization of labor, equipment and capital for efficient production. It is the key determinant of a nation's future growth.

Productivity, which is a ratio of output to input, can also be measured in different ways. For instance, it may be computed as a ratio of output to capital, or to labor, or to a combination of the two. Historically, the measure of productivity which is most commonly used has been output per unit of labor input, frequently referred to as "labor productivity." This measure reflects not only the labor's effort but also other factors, such as the state of technology, capital per worker, availability of materials, the efficiency of management, and the rate of operations.

The output part of a labor productivity ratio may also be defined in several ways. The simplest and most common way is what is called physical output, where the components are physi-

cal units such as pounds, bushels, numbers, etc. The arithmetic average of the productivity change of any of these components can be measured by weighing the units by man hours or the closest equivalent, such as labor cost.

There are also broad aggregates, such as manufacturing or the total private economy and these aggregates are constructed in terms of another concept called net output. Purchased "intermediate" products consumed in the production process are excluded.[1]

This type of measure is relation to man hours reflects not only the average of the individual productivity changes, but also reflects shifts in the relative importance of low-or high-productivity industries as well as saving in materials inputs.

Pragmatically, productivity is a mission of every responsible organization be it profit or nonprofit in nature. It is a very huge subject which encompasses the entire economy of a nation and it affects everyone indiscriminagely. To the generalists which consists of legislators, educators and corporate businessmen, productivity strands as taxes, government policies, capital, access to resources, adequacy of labor and management, competitors, and the frequent flow of goods and services.

Special - interest groups such as union and industry leaders have their own perspective. In most cases these groups position themselves on the opposite side of any productivity is-

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[1] The Statistical History of the United States from Colonial Times to Present. By Fairfield Publisher, Inc. (Connecticut: Fairfield Pub. 1969), p. 593

sue. Conservationists and consumerists will direct their attention to other facets of the same issue, while parties and issues can be further fractioned by divergent views from regional or political factions.

When productivity is viewed from the perspective of a single organization, be it a factory, government agency, or a service unit, many of the opposite opinions are excluded. In such instances cause and effect relationships are more visible and more urgent. In organizations managers coordinate input with output to meet certain schedules and predetermined objectives. They are constrained to buy technology and within budgetary limits. Their search for efficiencies never ceases and they perceive productivity improvement as a duty of their office, even though this duty is less imparative than the drive for maximum profitability.

For the individual workers, basically concerned with their immediate occupations and livelihood, productivity may even be viewed from a narrower perspective. To them, productivity means sharp tools, materials being available, knowing what is expected of them and what to expect in return and some supportive environment. These anticipations apply to workers at all levels, but the fulfillment of each anticipation actually depends on individual situation. For instance, an office boy and a janitor may share equal motivation and yet they may suggest entirely different paths toward productivity improvement, ie.,

both of them view productivity from different perspectives.

It is obvious to expect different views and be able to diagnose each one. These divergent in views make the pursuit of productivity challenging and frequently frustrating. There are chances of winning and without being intimidated by the resulting complexity, we should bear in mind that there is never a one-shot solution. There is no all-purpose productivity principle developed as yet and no intellectual to point out a proven way. However, there is a wealth of productive practices thaat can be seened to reveal those that conform to each perspective.

Sometimes it is easier to understand something by realizing exactly what it is not. Most often productivity is categorized with patriotism and motherhood as being obviously worthy. It obvious is, but there are some skeptisms. Both boosters and detractors tend to magnify its virtures and its faults and to some degree productivity gains do not necessarily increase profit. A product or service can be produced with less input and still be a money loser if no customer wants to purchase it. Equally so, little is accomplished by boosting the productivity of one segment of a process when the gain cannot be passed along simply because the next segment is not prepared for it.[2] Such situation will definitely become constraint on productivity and as such we can say that an unplanned productivity growth can be unproductive. And when a higher level of output

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[2] James L. Riggs and Glenn H. Felix, Productivity by Objectives (Englewood, N.J.: Prentice-Hall Inc., 1983), pp. 2-5

is achieved by disproportionately increasing the input, productivity actually declines. Producing more products with the same input is a gain only when the quality level is maintained steadily. If you sacrifice quality in order to boost quantity of output, value of output seldom increases. Hence, productivity is a measure of value.

There is an adhesive relationship between productivity and employment. It is evident on one side that a job is forfeited whenever a labor saving change eliminates a position. On the other side is evidence that more productive industries. From this relationship one can say that reducing a company's labor force by 10 percent may save the jobs of the other 90 percent, but such rationalization will be unsound to those employees who may be dropped from the payroll. From a management perspective it is both humane and economically defensible for managers to avoid productivity - induced layoffs through retraining, relocation, or retention until natural attrition provides an opening. This actually portrays the fact that a pledge of job security is the conscience of productivity movement. In other words, the more secured an employee feels about his job the more willing he is to enhance productive methods.

Productivity requires total firm commitment but nearly every organization gives lip service to it. The more progressive or more desperate ones usually back their words with re-

sources that are totally dedicated to the productivity movement. In the case where money is scare, the backing can take the form of sharing authority and encouraging innovative actions. Strong leadership from the top down to the bottom also creates a conducive atmosphere from which improvement can flow with minimal financial support.

There seems to be no true substitute for vigorous support from above and creative leadership can build the framework for productivity growth anywhere. Sometimes worker-involvement teams are developed in single departments, but their contribution to productivity may be unnoticed by other departments within the same organization. A good leader, however, can stir a group of workers toward spectacular performance, but this is harder to do without topside backing and it will increase employee satisfaction of accomplishment.

Credit for a productivity gain should be owed to many sources. The people who are responsible to foster the gain and the capital that will nourish it definitely deserve a share of the credit. Customers who will purchase the products or ser vices should not be overlooked and prudent management suggests that those directly responsible for the gain be rewarded first in order to promote continuing improvement. As such, the customers should receive a share by means of price reductions, which is not a welfare gesture toward the customers because low prices increase demand in a competitive market. A company can

then supply more of its products to the market if it offers lower prices. The additional goods can be supplied by the same work force through its higher productivity, thus employment is relatively stable or even rising, and the customers enjoy stable or declining prices.

Prices for products or services from the more productive industries are normally held steady or may change slightly over a long period of time. It is worth noting that sharply inflated prices are associated with less productivity growth and this phenomenon emerges in every country.

Productivity is also affected by many factors including fiscal policy, political decisions both at home and abroad, resource shortages and consumer's spending. Whenever wage increases exceed gain in production efficiencies, the goods or services produced from labor and capital will inevitably become more expensive. Competitiveness will be lost in the marketplace and a dollar buys less in quantity.

The long term effect of declining productivity is even more disturbing than immediate inflation. A drop in productivity actually means more resources are being consumed to produce just the same output as before. Less output then becomes available per individual and the scramble to maintain the share one has grown accustomed to becomes habitual. It is a struggle to improve our individual status and at most times expectations are dimmed to the extent that we realize today's children may

be much less prosperous than their parents. It is this rational assessment of the future that motivates current concern about productivity.

## HISTORICAL REVIEW

Historically, the United States is the envy of the world in its remarkably high level of productivity in relation to production. However, many of the mid - 20th century problems of the United States stem from the nation's rate of economic growth, ie., the rate at which production of goods and services has increased.

In domestic affairs the growth rate has been largely critized by the public as both too rapid and not rapid enough. The issue has become controversial and there seems to be no consensus as yet. People who consider the growth rate too rapid seem to look at it as the cause of certain strains of adjustment such as the technological displacement of skilled employees and the depression of particular industries and areas. And those who consider it too slow have attributed their reasons to the persistently high unemployment especially in the late 1950's. In the 1960's, the public became concerned that perhaps the economy is not able to expand jobs fast enough to keep up with the increased numbers of youth seeking their first jobs. More recently we have seen price inflation which is largely associated with the war in Vietnam and this inflation has plagued the nation because spending has grown faster than the ability to produce.

On the international level the United States has been faced with problems. Firstly it has been deeply concerned with accelerating its own growth rate in order to keep ahead of rival industrial nations such as Japan, and second is the concern of helping poor nations to also get ahead on their own path of rapid growth. After recovering from World War II, Russia, Japan and other European nations have continued to grow faster than the United States and these countries have provided more competition in world markets. Some poor nations have even been tempted to look to communist nations for leadership to the path of rapid progress due to America's lagging growth. These poor nations are also seeking material assistance and good advice on how to raise their own production levels. Not only have there been no quick ways to raise the path of rapid national expansion, but also advisors often have found the problems of initiating rapid growth in underdeveloped nations strange and sometimes worthless.

These problems have stimulated new interest in the growth experience of the United States and it is hoped that it will be a little wiser in dealing with its own growth problems and giving guidance to other nations as well. This does not mean past experience can be repeated or it can be applied as an exact guide in the future. However, there is a growing body of new information and new interpretations about America's growth and the intelligent citizen today needs some insight into the pro-

blems as well as some acquaintance with these new ways of looking at the United States economy.

It is no great surprise to most Americans to learn that their nation has the highest consumption level among all nations of the world. Most of them have long taken for granted that the United States is the first ranking industrial nation of the world. What most of these people have failed to realize especially those who have not traveled abroad, is just how far ahead of other industrial nationals are the United States incomes. Second is to find out how desperately low are incomes in the poor nations. The clothing, automobiles, homes, personal possessions, and incomes that Americans take for granted seem fabulous to people of other nations who view American moves and or see American tourists. It is difficult for them to realize for instance, the only six percent of the world's population, Americans have over half of the world's telephone and automobiles.[3] These items are imported to the United States which implies an imbalance between United States import and export rates.

In order to make more meaningful internationl comparisions, it is better to begin with family income comparisions in the United States. This is a measure that is seemingly comparable to personal income and its more familiar to most Americans. Reports from the 1960 census revealed that the median family income was $6,845 at that time. If all families

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[3]John M. Peterson and Ralph Gray, Economic Development of The United States (Homewood: Illinois, Richard Irwin, Inc., 1969), p. 4.

were ranked by income level and then dividing them into five equal groups, one-fifth of the families with the highest ranking incomes would average more than double the national median. And the one-fifth of the families with the lowest ranking incomes would average a little less than one- fourth of the national median.

From this scenario, then, what do people in the United States refer to as "poor"? The term "poverty" has been frequently applied to family incomes below $3,000, but this is rather arbitrary. If families in the United States average anywhere between three and four persons in the lowest fifth of all families, then their average income will come to about $400 to $500 per person.

Compared to the other industrial nations, the United States was far above in GNP per capita in 1960. There are wide variations among the underdeveloped nations and for some of the poorest nations, the GNP per capita is below one twentieth of the United States average.[4] And because most of these lowest income nations are heavily populated, roughly half of the people in the world during 1960 lived on an income below $100 a year, which is less than $2.00 a week. In any case therefore, the United States is ranking above most nations of the world in terms of per capita income.

The beginning of the economy of the United States is characterized by three facts. The first is that the eastern coast

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[4]Ibid., p. 7.

of America was settled initially as a European pioneer colony. Second, its colonial culture and institutions were greatly influenced by the advanced stages of European transition from a medieval traditional economy to a modern market economy. Third, its national status started with a well-developed market economy at the very beginning of the industrial era.

Europe was in the late stages of a transition when the American colonies were settled. At that time the traditional economy (cooperation through exchange) was already giving way to a market economy. In America there was no struggle to over throw a ruling class and so most individuals were attracted by natural opportunities and were forced to become self-reliant and adaptive.[5]

At the time the United States was found it begun with a fully developed market economy and that was when the Industrial Revolution was in its early stages. This means the United States started at an advanced stage of development with a high degree of readiness to begin industrialization and rapid economic growth. The nation begun as an agricultural nation highly specialized in export crops such as wheat, corn, etc. and was actively engaged in world commerce. It was equipped with institutions, leadership, skills, and wealth required to launch its own development.

The market economy was not invented by an individual. It arose gradually out of the activities of many Europeans even

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[5]Ibid., p. 37

long before national governments were formed and before anyone quite understood it. Economists merely begun to describe how it worked and from that point they gave it a name "Capitalism".[6]

The acquiring of political independence by the United States did not bring about immediate economic independence, nor did it bring immediate progress in the living standards. The American economy remained predominantly agricultural and closely tied to European markets and the chief commercial crops had still to be sold abroad, while most manufactured goods were imported. The level of per capita income at the time was dependent upon production for trade and prospects for raising per capita income were closely tied to the fortunes of trade.[7] With this type of trade practice there was no advantage whatsoever in seeking to make the United States immediately self-sufficient. Therefore movements toward self-sufficiency were suspended during this period and every effort was geared toward export trade.

The United States economy was actually not ready to become a modern industrialize economy at the very end of the Revolutionary War in 1783. Although it started with a relatively high income consumer market, an active commercial class, and political institutions all of which were favorable to business enterprise, it needed at least half a century more before becoming ready for rapid industrialization. There was enough natural resources available at the time, but they had to be combined

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[6]Ibid., p, 38

[7]Ibid, p. 141

with an adequate supply of labor and capital. Knowledge of how best to combine these resources was also needed. Rapidly accelerated per capita growth begun in the United States just prior to the Civil War of 1860.

The rate of United States economic expansion and rise in productivity after the Civil War was great and manufacturing by then provided the main stimulus to this rapid increase. Between 1860 and 1913, the share of world manufacturing production in the United States rose from 23 to 36 percent. After 1913 America's manufacturing output along was equal to the combination of its three nearest rivals - France, England and Germany. American productivity and manufacturing capacities begun to grow rapid around 1840, but the Civil War caused heavy damages and during that period efforts were directed toward arms production which retarded investments in every sector of the economy. The Civil War apparently interrupted the growth rate of total production but shortly therefore, total production fully recovered and underwent the most rapid rate of increase in American economic history.

The fast rate of growth in output than the increase in inputs definitely suggests that something more than mere expansion happened. Improvements in both the method and organization of production must have taken place. An increase in productivity is commonly used as a measure of the results of such improvement. Estimates showed that three decades prior to 1920,

capital input in the private sector of the United States economy increased at a yearly average rate of 3.4 percent and that of labor input increased to 2.2 percent.[8] The combination of labor and capital inputs therefore increased at therate of 2.8 percent per year and total output rose by 3.9 percent which gave a total factor productivity ratio increase of 1.3 percent annually.

Two important things should be clearly noted from these increases. The first is that an increasing amount of capital was being used per worker in order to attain the rising output per worker. Second, output was increasing faster than either the labor input or the capital input. Improvement in methods and organization, therefore, were surely the forces behind this combination of inputs to produce more output. Labor at the time accounted for more than three quarters of the total cost of production, but capital was contributing more to the increase in productivity because new methods usually require investment in more capital in the form of new types of machinery and equipment.

The assumption frequently hed by peopleis that modern industrial progress was achieved in the United States at the expense of workers. It is also believed that property owners transferred the gains in productivity for themselves and profits were obtained partly by reducing the real wage income of workers. Some of these beliefs may not hold in all cases be-

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[8]Ibid., p. 257

cause while an increasing proportion of capital was used in production from 1889 to 1919, it was estimated that the averge unit price of capital increased much more slowly than did the unit price of labor. This means real income attained by capital owners increased less rapidly than income earned by labor.

With the close of the Civil War the industrial development of the United States increased tremendously and productivity reached its peak. Productive economic developments continued to advance, almost without interruption. Immediately following the war factory system was fully established and manufactures developed to a point that gave the United States the undisputed industrial leadership of the world.[9] Industry and commerce were heavily helped by accumulations of capital and labor advanced to power formerly unheard of, which later resulted in problems in the relationship between employers and employees. The concept of finance also played an increasingly important part in politics and in the minds of the people.

Although relationship between employers and employees has been strained for the past few decades due to organized labor movements, there has been a continuing increase in the efficiency of the employed. In the post World-War II period studies showed that the Americans experienced increases in output per unit of labor much higher than those in England. The productivity of labor in American industry was also over twice as great per man as productivity in British industry. Several fac-

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[9]Edward S. Cowdrick, Industrial History of the United States (New York: Ronald Press Co., 1923, p. 191.

tors were responsible for the difference. First was the greater degree of standardization and specialization in America than was in Britain. Second, American industry was characterized by better planning and supervision of production. Finally, the American workers seemed to have been more productive because of their attitude toward their jobs. They were more interested in their jobs and seemed in general to have been more willing worker than workers in Britain.

## NATURE OF UNITED STATES ECONOMY

The United States economy can best be studied by first taking a closer look at capitalism, what it is and what it does. In the United States there are huge corporations and well-established business enterprises and at times people wonder just how these establishments came to being. For instance, a manufacturing company needs materials, machinery, equipment and technical knowledge to operate efficiently. It also requires an enormous amount of labor and probably some means of transporting its materials and supplies. All the workers who contribute, directly and indirectly, to its productive operation must be fed, housed, clothed and amused; otherwise they cannot work neither can they be induced to work. What then isit that makes such things posible within the American economy system? What single force creates it all? The answer is the magical powers of capitalism, as strong in the economic world today as gravitation in the physical.[10]

This capitalism is the power of stored money and hundred of millions of dollars go into United States businesses each year. Hundreds of billions are expended on factories, mills, railways and machinery, and without this capital, in some form, the vast industries of the United States, as those of the rest of the world, could not have come into existance. In the con-

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[10]Carl Snyner, Capitalism the Creator (New York: The Macmillan Co., 1941), p. 121

struction of these factories, mills and railways, these billions must be provided in order to sustain the workers who are employed. This is an economic phenomenon which holds in every nation whether it has a free economy as in the United States, or a compulsory economy, as in Russia.

The industries in the United States are not imaginative or mere fantasy of capitalism. The capital required to build them for economic activities has to come from some place. For the most part, the capital for United States industrial enterprises comes from the few who divert part of their income from consumption to investment. Apparently their function is to collect the funds that create the capital equipment of this country, which makes possible the huge products and services.

It is absolutely essential to note here that if economic progress should be achieved in any nation, then someone has to provide the required capital. The capital could be provided by the state or an economic class within it. However, within the state there is usually no class which insures the most effective use of such funds. As for the politicians and officials, they are rarely men of high business ability, and still more important, they have no imperative interest in either efficiency or profit.[11] In a society of free enterprise the mechanism that attain all these ends is capitalism.

The great wealth of the United States is due almost wholly to the growth of manufacturing, mining, transportation and

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[11]Ibid., pp. 121 - 122

trade with little attributed to agriculture. This tremendous industrial growth has required sufficient supply of new capital, without which invention, discovery, and enterprise would have been inefficient. This new capital is derived directly from the industries themselves, with each industry providing its own capital through reinvestment. Individual savings has also contributed to this capital, but on a very small scale.

The supply of capital comes from the profits of the industries, the accumulation of which is due to the energy and initiative ideas of highly capable individuals with talents for efficient management. As the wealth and income of these individuals grow from time to time, greater amount of capital is pumped into the system for industrial expansion and the creation of new industries.

The powers and potential of the United States industries stem from the fact that its economy system is a mixed one. It is capitalistic, government regulated and its model is the price system. The market system is determined by the supply and demand of goods and services, and those who produce the goods and services most desire by the society survive. The distribution of resources and growth promotion of the entire economy is determined by free enterprise system through competition.

Private property and private enterprise are the twin cornerstones on which the American economy system is built. The United States heavily rely on private and profit-motivated in-

dividuals with productive initiatives to get its economic work done. The vast undeveloped land and investment opportunities relative to the labor supply is encouraging the establishment of private enterprises in every sector of the United States economy. An environment of personal freedom protected by political institutions and a legal system that recognizes private property rights, made the search for private gain a logical and acceptable basis for American economic growth.[12] Government and business roles are so intertwined such that the survival of large firms that would otherwise collapse if left to their own devices has been assumed as government responsibility. This is one important idea that makes the American economy a dynamic one, ie., government encourages economic development initiatives. However increasing government is participating, most decisions about what and how much to produce are made by private individuals and companies, rather than by the state. These private individuals and companies exercise ownership rights and generally buy or sell them without permission from the government; financial power is therefore concentrated in stockholdings.[13]

Although the United States has a free enterprise system, Americans are always ready to turn to the government to reduce hardships caused by market forces, or to shape market forces to their own advantage. For the past few decades they have witnessed new expansion of the role of government in economic act-

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[12]Arthur M. Johnson, The American Economy. (New York: Free Press - Macmillian Pub. Co., 1974), p. 152.

[13]Ibid., p. 158.

ivities. Though there are relatively few areas in which government decision have completely replaced the market place, the impact of government policy can apparently be seen in all market transactions. Government activity accounts, directly or indirectly, for at least a third of the total spending in the economy, and regulates in some fashion or another most market activity.[14] Thus, the economy system is arranged such that government decisions and individual choices are mixed together. However, Americans are still in the process of determining what the proper mix of government and private economic activity should be.

In spite of the variety of protective schemes that have been designed by government to quarantee greater economic security for Americans, the past five decades of American economic history have been characterized by depression, war, unemployment and inflation. Apart from the brief interval which took place in the late 1950's and the early 1960's, the American economy has been anything but stable.[15] Nevertheless, we cannot ignore the substantial increases in output and real income which are the characteristics of the post-war decades. In fact today Americans enjoy a material standard of living far above that of 1929 and this is the result of rapid economic growth. Yet, despite this and the vast technological advancements, Americans as they entered the 1980's seemed insecure about their future just as they were in 1930.

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[14]Roger L. Ransom, Coping with Capitalism, (New Jersey: Prentice Hall, Inc., 1981), p. 12.

[15]Ibid., p. 146

The problem of economic insecurity remains a national goal which is both frustrating and perplexing. After fifty years of economic progress it is hard to believe the notion of economic insecurity. The situation is a confused one, probably because the forces that produce economic insecurity today seems to be more subtle than those that produced anxiety during the depression. Incomes are at historically high levels, and most Americans can barely record a situation in which extremely large numbers of people were unable to find any kind of work. Nevertheless, everyone is concerned about the United States economic future and many Americans are apparently convinced that the system is suffering from some kind of uneasiness which will prevent it from meeting the challenges of the 1980's.

To account for this perceived economic uneasiness economists have detected many potential causes for the relatively poor performance of the United States economy in the 1970's. They have used the term "stagflation" to describe the problems, but the term itself conveys the contradictory nature of the economic illness with which the United States is dealing. If the problem of a demand for goods and services which is too large, is combined with that for goods and services to small to promote either economic growth or inflation, a single diagnosis is formed to describe symptons, but that also reveals some confusion in the explanation of what lies at the root of the present predicament.

Whatever problems the economists have in diagnosing the causes of this illness, the American people have no difficulty in identifying the sympton which is the source of their discomfort. The problem of which they complain is inflation, which is puzzling to some extent. Inflation is not a new phenomenon and as such any economist virtually knows what causes it. To put it very simple, inflation occurs whenever there is too much money chasing too few goods in the economy. If for some reasons we find it difficult to control the supply of available goods, the control of the amount of money available within the economy can be handled by the government. Accordingly, then, an obvious way to check inflation is to have the government reduce the money available for purchasing good and services. Economists have known this for years and have even suggested a variety of government policies that might accomplish this end. Most of the proposals have been tried and several have proven quite effective. Yet Americans are reluctant to apply these well-known remedies. Therefore it seems as though inflation is been tolerated when in fact it could be stopped.

The cost of living is also going up in the United States which has always been a land of abundance. Plenty of land, natural resources, and raw materials have been available and the industrial arrangements for the use of natural resources actually reflects this abundance. However, that situation seems to be changing and the current increase in the cost of living may

be a warning that the diminishing resource base can no longer support the rate of expansion of activities that has characterized the last century.[16] Therefore some institutional changes are difinitely needed to encourage better use of these resources.

In addition, there seems to be some institutional hardship in the United States because economic institutions are just not able to adjust to changes that are taking place in the economic environment. The problem of inflation, which seems to captivate the attention of almost everyone, stems from the inability or unwillingness of firms and labor organizations to respond to the pressures of changing market conditions. This emphasizes the fact that the market institutions have difficulty ensuring a full employment of resources without encouraging a significant rate of inflation. This is the dilemma that is posed by stagflation on the United States economy.

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[16] Ibid., p. 148

# CHAPTER II

## United States Trends in Production by Sector

### Goods Sector

The concept of productivity is a serious concern of every one because it entails man's efforts to raise himself from poverty. The record for the United States in this regard begins mainly in the latter part of the Nineteenth Century. This period is relatively brief, but it is the period and setting in which efforts to raise productive efficiency were notably successful. In the increase in real net national product per capital between 1889 and 1957, productivity advancement accounted for about three-fourths. This means not only was there a gain in the standard of living, but an increase in the quality and variety of goods and an expansion of leisure time. There was also increase provision in the future growth of the economy, as well as for national security.

The goods sector of the United States economy includes industries such as agriculture, mining, contract construction, manufacturing, transportation, communications, public utilities and government enterprise. The inclusion of agriculture and government enterprise is a modified version of the sector. In terms of economic importance, the goods sector is slightly superior to the service sector. For instance, in 1961 output in the goods sector accounted for 43.2 percent of gross national

product, while the service sector accounted for 28.6 percent.[17] The tendency for output in the service sector to grow more rapidly than the goods sector was during the post-war period. That dramatic trend was in employment, where the service sector's share rose from 40.4 percent to 54.0 percent. The decline in agricultural activities and the growing importance of government accounted for a substantial part of this shift. However, the goods sector's share of labor compensation has kept pace with the growth of employment before and after the war.

Productivity is higher in the goods sector than the service sector of the United States economy. In 1961 output per man in goods grew 1.7 percent faster than in service.[18] This fast output rate was the result of the inclusion of agriculture and government enterprise as parts of the goods sector. Increases in both agricultural and government activities boost economic growth within the goods sector, thus its rate of productivity growth is relatively higher.

If both government and agriculture are excluded from the goods sector, the situation will be quite different. The exclusion of government will raise the productivity rate of the service sector because output per man will rise more rapidly in service industries other than government. The exclusion of agriculture will lower the rate of productivity in goods because agriculture as an industry with low gross product per man, will definitely become less important over time.

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[17]Victor R. Fuchs. Productivity Trends in the goods and Service Sectors, 1929-61, (National Bureau of Economic Research, 1964), p. 4.

[18]Ibid, P. 12.

There is a relationship between productivity and labor quality and to define labor quality with precision is very difficult. However, a few words concerning its use may be helpful. From casual observation it is apparent that man-hours or labor are not always the same with respect to productivity. The effect of a given number of man-hours on output, holding technology and other inputs constant is likely to vary depending upon such factors as the knowledge, intelligence, and strength of the persons supplying the hours of work. These factors contribute to variations in productivity if it is considered in terms of labor quality.

For practical purposes, however, labor quality may be defined as the ratio of labor input to man-hours. In the period 1929 - 1961, labor quality in the United States was approximately forty to fifty percent per annum.[19] This was the rate at which labor compensation per man-hour in the goods sector rose relative to the service sector. Increase in productivity followed next because other input factors were allowed to vary relative to the quality and man-hours of labor. It is therefore evident that differential trands in productivity within the goods and service sectors were the results of differential trends in labor quality.

Several studies of industrial productivity have revealed that there is a high correlation between changes in output and changes in productivity especially for long period of time.

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[19]Ibid, p. 23.

This correlation is simple in words, but difficult in reality. Changes in output obviously imply changes in productivity, but the direction of changes in productivity depends on many factors. Changes in output that will maintain a steady, or even result to an improved quality output, definitely mean positive productivity changes. If quality drops following changes in output, then negative productivity changes are rather achieved.

Moreover, changes in output should necessarily be followed by changes in demand for the product, assuming here that quality is maintained or improved. A reduction in output but with high quality could lead to positive productivity changes because more of the product can be purchased by customers and may be at a lower or higher price depending on the market structure. Industries in the goods sector today have obtained rapid gains in productivity by showing declines in the relative prices of the goods they produce. These price reductions have resulted to increase in quantity customers need and therefore increase in output levels.

Positive correlation between changes in output and changes in productivity was achieved within the goods sector of the United States economy between 1929-61. The tremendous increase in output, which is determined by income change, changes in taste, or even other production variables that are external to the industries in this sector, has permitted the realization of increased economics of scales, thus causing increased produc-

tivity.[20] This productivity gain was relatively lead by almost every industry except contract construction and government.

Technological changes or shifts in the production function of industries in the goods sector also contributed to its high productivity. Most of these industries substituted skilled labor for unskilled at very rapid rates. It may be that technological changes demanded such substitute and the impact was manifested in more capital intensive industries. Productivity trend in the goods sector may increase more than what it was up to 1961 provided industries are willing to invest in physical capital. This means more equipment and machinery with minimum and highly qualified personnel to fulfill the labor need.

## Service Sector

The service sector includes wholesale and retail trade, finance, insurance, real estate, personal services, professional services, business services, and repair services. This classification is partly arbitrary because all industries provide services. However in some industries such as education and medical care, the service aspect is more readily apparent. The service sector consists largely of industries that have not received much attention in the past from economists interested in productivity analysis. Some economists have suggested that these industries typically have slow rates of technological change, while others have agreed that the most distinguishing characteristic of this sector is the inability of people to

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[20]Ibid., p. 16.

measure its output correctly. The reason for this inaccuracy is that the output of industries within the service sector is rarely in physical units as it is in the goods sector. Output is at most intangible and that makes its measurement very difficult.

The United States economy consists of two sectors - the goods and the service sectors. The service sector is lower than the goods in economic importance though postwar record shows that there was a slight tendency for output in the service sector to out weigh the goods sector. The service sector could have been economically important as does the goods sector, but due to difficulties in measuring inputs and outputs this economic equivalence has yet to be achieved.

Between 1929 - 1961, United States productivity was low in the service sector relative to the goods sector. The rate of productivity growth in terms of output per man in the goods sector was 1.7 percent per annum more rapid than in the service sector.[21] There was of course a general decline in hours per man immediately following the great depression, but the impact of this decline was much more pronounced in the service sector.

Employment plays a very important role in measuring the rate of productivity growth and economic advancement. The basic employment concept used in the service sector is "persons engaged". This includes self-employed proprietors in addition to wage and salary workers, all of whom are classified as

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[21]Victor R. Fuchs, Productivity by Differences within the Service Sector (New York: National Bureau of Economic Research, 1967), p. 39.

full-time employees.

The concept may be subject to considerable errors because it is difficult to obtain complete coverage of the numerous of small firms that are in service industries. The importance of obtaining an accurate count of the self-employed is that, they account for a significant fraction of total employment in many of the service industries. Employment estimates from the Census of Business for these industries are probably not as reliable as those obtained for the goods sector or industries. This inaccuracy has negative effects on the trends of productivity in the service sector in that no proper account is given of labor input and output relative to productivity.

Although the rate of productivity growth has been slow in the service sector relative to the goods, but if service industries generally tended to show positive rates of change in output per man, a serious question could be raised concerning the practice of assuming a zero rate of change for service industries for which no convenient method of estimating output, independent of employment, has been found. If an assumed positive rate of increase, say, one percent per annum, is applied to these industries it could be argued that such a procedure is no more arbitrary and perhaps even more accurate.

The relationship between industry rates of growth and output per man is of particular interest especially for the service sector. Many studies have established a significant posi-

tive correlation between these two variables. The explanation of the relationship usually runs in two opposite directions. One is from productivity change to industry growth, and the other from industry growth to productivity. The first explanation is that rapid productivity growth leads to lower prices which stimulate demand and output. The alternative explanation is that changes in income or taste that increase demand and output permit economics of scale and other efficiencies which show up as higher productivity. However, these explanations are mostly confined to or are dominated by industries within the goods sector. Therefore for the most part little is known about productivity growth rate in the service sector, especially for those industries with no practical method for measurement.

The degree of capital usage in both sectors had a significant impact on variations between the rate of productivity growth. Looking at differences between the two sectors, I can arrive at numerous assumptions in order to reach to some degree of comparability between 1929 and 1960. From the speculative nature of some of these assumptions, it does seem that the goods sector had more capital per worker in 1960 than did the service sector. The sector ratio of capital per worker between the two sectors was roughly two to one. The goods industry was also more capital intensive, especially in 1929, though not to the same extent. The Internal Revenue Services data suggest that the sector differential in growth rate of capital input

per worker may have been of the order 50 to 60 percent per annum, with most of the differential occuring after 1947. This implies that output per man was always greater in the goods sector.

It is worth noting that accountants measure elements of organizational profits quite well, but they ignore costs like pollution and depletion of limited resources which have little or no effect on profits. They normally assume that these costs should be ignored because they are dumped on people. The production of goods and services for people are among the objectives of organizations, but neither financial accountants nor cost accountants measure productivity for people. Instead, they assume that every dollar of an organization's revenue or profits represents values delivered or values added. Increasing productivity in terms of such measurement is realistically applicable to goods but not service industries. When the process of measurement is difficult to standardize, measurement of the rate of productivity growth in the service sector becomes a problem.

Productivity of service organizations can be calculated as the product of four operating functions - input, processing, output or follow-up, and timing and coordination. If I assume an arbitrary rating of seventy percent for each function, the productivity will be twenty-four percent gross for any service industry. This is calculated simply as .70 x .70 x .70 x .70.

Consider a simple example by assuming that thirty percent of those admitted to a state mental hospital do not actually require hospitalization but could rather be better if treated as outpatients. Function one, input, would then have gross rating of seventy percent. Assume that over crowding and understaffing will delay psychiatric attention, restrict therapy, and limit patient counseling. Obviously lack of skills, understanding or even caring for these patients will further reduce effective treatment. Function two, processing, might therefore have a lower rating say fifty percent. At this point it is apparent that only seventy out of one hundred patients should be in the hospital and only half of the seventy can be helped. In order words, through function two, thirty-five patients can be effectively taken care of and so a productivity measurement of thirty-five percent gross is attainable, ie .70 x .50.

The arithmetic as you can see is simple when it is accepted that there are indeed four related operating functions which must be equally appraised to determine the productivity of any service industry or organization. However, conventional measurements tend to constrict the views of people to one function only. For instance, cost per inpatient in a mental hospital constricts analysts' views to the processing function and ignores the input function (who is being processed), the output or follow-up function (what happens to those being processed), and the timing and coordination function (when processing and

other functions actually take place). To view the productivity of a service organization from one function only is to deny its goals and objectives. When conventional productivity measurement is applied to single function of the service industry, it implies that it doesn't matter what is accomplished as long as it is done at minimum cost. And as the scenario has clearly indicated, if any one of the four operating functions has a zero rating, productivity is obviously zero.

Productivity means efficiency in organizations and effectiveness in accomplishing organizational objectives. For the goods sector effectiveness is assumed to be controlled in the competitive marketplace where goods sell only if they are effective in meeting consumer preferences, needs, and demands. For service organizations, however, effectiveness is not controllable in the marketplace, and there are a number of reasons for that.

First, when an industry in the goods sector adjusts production to meet consumer preferences, that industry does so on an aggregate basis in response to aggregate demand for the product. But for the service sector there must be individual responses to individual service needs. Second, there is a difference of power between large service organizations and individuals who need services. Usually personnel in service organizations act as "gatekeepers of society", with power to exclude individuals who displease them from society as a whole.22

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[22]Herbert Heaton, Productivity in Service Organizational , (New York: Mc Graw-Hill, Inc., 1977), p. 174.

Third, compulsions like compulsory school attendance surpress the voices of individual needs instead of meeting them as the goods sector.

Productivity means fruitful, fertile, and creative. An organization being productive means it is accomplishing or achieving its objectives. Productivity in service organizations involves both the efficiency with which resources are used and the effectiveness of services rendered. Although most industries in the goods sector use profits in a competitive marketplace as method for measuring productivity, multiple measurements could be used since measurements actually control objectives and results. For instance, if emphasis is heavily placed on output per working hours as the principle measurement of productivity, the consequence will be displacement of people from organizations and then organizational effectiveness will be ignored, at least in the service sector.

## Capital

For the past few years there has been a growing concern about whether the United States will engage in a high enough level of investment in order to assure continued growth in productivity and high levels of employment. The negative trend in productivity of the early 1970's and the very large employment requirements needed at the time to reduce unemployment, especially of the mid 1970's and to provide for a growing labor force further emphasized this concern. The disordered financial

markets in 1972 through 1974 even gave rise to further questions about the ability of United States financial markets and institutions to provide capital for investment outlays.

The intensity of this concern has given rise to an extensive literature on what is known today as "the capital shortage". The analysis of this issue differ in many ways as to the extent of the problem, its causes, and the availability of solutions to the problem. Some people see the problem as real and continuously extending widely throughout the United States economy. Others look at it as a false one or as one that is limited to specific sectors within the economy.

The capital shortage issue reflects the assumption that investment needs are large in order to make provision for productivity growth. Large investment needs are necessary to provide for employment, improve standards of living and to provide the framework for economic developments. Some Americans see this problem as one arising from inadequacies in the structure and operations of the financial system.

The capital shortage problem is a shortfall of investment relative to production requirements. In 1973 when the United States experienced a sharp acceleration in prices the consequence was severe capital constraints on the production of major industrial materials. Industries like petroleum refining, production of aluminum, steel, paper, and cement had operated at their highest capacity levels since the second quarter of

1951. In many of these industries there has been very little productive capacity growth in recent years. Environmental regulations have contributed to holdups in the construction of new plants. These regulations have even led to the shutdown of some existing plants, and have prevented the activation of some standby capacities. Investment in new capital was discouraged by the relatively low profits of United States domestic non-financial corporations between 1966 and 1971.[23] Productive capacity in the paper industry and also in petroleum refining appeared to have grown less than two percent between 1969 and 1973. In the cement industry productive capacity showed little or no growth and only one new petroleum refinery has been opened since 1969.[24]

The lack of sufficient attention to investment incentives in these industries and to the problems they face as a consequence of environmental rgulations, has resulted to shortages of many basic materials needed by other industries to expand production. Because of these shortages business firms have been unable to increase production rapidly enough to meet the demands of their customers. There has also been tremendous increase in the number of unfilled orders and delivery delays have created price pressures, especially for shortage in the supply of major materials.

In September 1974, the projections of capital needs and savings potential of the United States economy was that busi-

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[23]The American Assembly, Columbia University. Capital For Productivity and Job (N. J.; Prentice-Hall Inc., 1977) pp. 2-3.

[24]Ibid., p. 3

ness investment and residential construction spending through 1985 would comprise a large share of G.N.P. than had been the case during the period 1961 to 1973. Federal, State and local governments would continuously have financing needs because of capital shortage. For business and savings, there would be a gap between projections of funds uses and savings during the 1974 - 1985 period. These projections implied that some sectors, such as housing, small businesses, and even some large businesses, would definitely be unable to achieve their predetermined levels of investment due to the difficulty of obtaining finance. As such, productivity can be expected to decline and the entire economy should anticipate severe financial difficulties.

The United States had the worst record of capital investment among the major industrialized nations during the 1960's. Consequently, productivity growth during that period was among the lowest of leading industrialized nations. Nations with high productivity growth during that period were those that devoted relatively more of their resources into capital investment. At present the United States competitive position in world markets is endangered by industrialized nations with good record of capial investment. These nations have acquired more modern plants and equipment, and have also replaced absolete ones.

Record on United States capital investments reflects the heavy emphasis Americans are laying on personal consumption and

government spending as opposed to savings and capital formation. Although the economy is sufficiently large and dynamic to overcome this situation, future economic growth must be tied much more directly to the adequacy of capital investments. It is therefore necessary that United States government policies become more supportive of capital investment and Americans need to make a shift in their domestic policies away from continued growth in personal consumption and government spending, toward greater savings, capital formation, and investment. This is one of the most important economic challenges of the decade ahead.

Concern about developments in United States financial markets first arose public interest during the years 1972 to 1974. This came as a result of the enormous amount of external financing required by United States business firms. The increased financing requirements and the continuous escalation of interest rates which took place during this period gave rise to concerns about the ability of financial institutions and markets to supply sufficient funds to meet the investment needs of business firms. A special concern was raised about the sources of finance for smaller firms and firms with lower credit quality ratings.

As business financing almost completely fell off in 1975, people began to replace these concerns with fear that the economic explosion in the financing requirements of the United States Treasury would "crowd-out" private borrowers. People actually thought this crowding out in the financial markets

would limit the ability of business investments and housing expenditures so that the economy would get out of recession. Over the longer run then, this would limit the capital formation that was necessary to assure the productivity growth and employment which would support rising standards of living and keep the United States economy competitive in world markets.

The situation however, turned out to be worse because of a mismatch between the needs of investors and the preferences of savers. There were instead excesses of financing in the early 1970's which left some financial institutions in positions that made it difficult for them to play their necessary roles in financing the legitimate needs of investment toward expanding the entire economy.

The large volume of business financing that occurred between 1973 and 1974 was the result of several forces within the economy. Business expenditures on fixed assets expressed as a percent of G.N.P. remained at historically high levels throughout this period. Industry investment in physical units also remained at a relatively constant and moderate level during this period. However, inflation which was especially pronounced in industrial material prices, caused replacement cost of inventories used in production and sales to substantially exceed their original production cost. Therefore business firms found themselves forced to finance extraordinary large increases in the book value of their inventories. Consequently, the pre-de-

termined objective to increase the rate of productivity growth was unfilfilled.

The concern about the rate of United States productivity growth is an important issue because productivity is the major source of the economic growth that enables a nation to raise living standards. This concern goes along with that about capital because there's no record or statistical evidence, of any country that failed to show an upward trend in productivity and capital per work simultaneously. This is by no means a coincidence because increase in productivity and the income it brings establish capital formation. And capital formation helps to increase productivity. Therefore, capital is an essential element of productivity growth in any nation.

The height of concern about United States productivity growth was during the recession of 1973 - 1975, when the growth rate of capital formation came to a complete halt. For the first time in twenty-five years, productivity declined for as many as six quarters, two in 1973 and the rest in 1974.[25] The National Commission on productivity in 1975, shows that the rate of increase in output per man-hour did tend to decline gradually during the post war period. The trend rate of increase was about 3.6 percent per annum around 1947, 3 percent around 1960, and by 1974 it was down to 2.4 percent.

There were also cyclical declines in the rate of productivity growth which similarly occurred in other industrialized

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[25]Ibid., p. 37

nations. However, their average rates of productivity growth have generally been higher than that of the United States because of the tremendous increase in their rate of capital growth. The relatively slow rate of productivity growth experienced by America in recent years is the result of the low rate of capital information.

Industrial societies and business firms have to save some of their output for reinvestment in the replacement, modernization, and expansion of industrial machines. This, which is also known as the "industrial seed corn", is exactly the process of capital formation and nations that neglect it find themselves susceptible to scarcity, inflation, unemployment, and declining standards of living. In recent years, the United States has been eating very deeply into its industrial seed corn.

In the century of industrialization that began immediately after the Civil War, the United States had a social, political, and economic climate that favored savings and investment in every business sector. With abundance of natural resources and growing population, the United States was far ahead of other nations in the process of capital formation. The nation was also relatively ahead in terms of productivity and national wealth.

However, in recent years the United States seems to have lost touch with its basic formula for national success. Several factors have contributed to this lost of track. There has been

an increasing emphasis on consumption, especially in the form of government services. Along with this has been loss of incentives for savings and investment. Consequently, productivity advances are declining and the capacity to provide advances in real income and jobs for a growing labor force is also going low.

In the wake of this economic problem the United States is not alone. One of the negative repercussions of economic growth is that nations are tempted to live beyond their means. This is done in industrialized democratic nations where governments come into power simply by promising more than the opposition. The process is universal and has been seen at work in the United States.

What do I mean when I speak of nations been tempted to live beyond their means? In democratic nations the expectations of people increase as politicians increase their promises in the struggle to gain politial sovereignty. These expectations become demands and then later entitlements. Government therefore respond to these demands by legislating more generous services and benefits, taking increasing amount of wealth out of the economy by way of taxes. The major emphasis here is usually on consumption rather than production, or redistribution of wealth rather than its creation. Hence, governments grow at faster rates then the tax base that supports them.

Capital formation, then, which is the life - giving pro-

cess by which nations reinvest part of what they make in future productive capacity, is absolutely forgotten in the rush to provide continuous and comprehensive welfare programs. And when a nation begins to eat its seed corn, to discourage savers and investors, to continuously tax away private and corporate earnings, the rate of productivity growth will continue to decline.

In the United States the productive sector has tremendously declined due to government social welfare programs. More people are either on payrolls or have joined the chronically unemployed. Demand has exceeded supply, and the resulting inflation has accentuated conflict in the struggle to keep ahead. Labor demands are far in excess of increases in productivity, and the government is continuously increasing its welfare programs in response to political pressures. High rates of inflation and unemployment are expected to become even chronic in years ahead. Federal, state, and local government expenditures have relentlessly increased from one-tenth of G.N.P. in 1929 to more than a third of G.N.P. in 1977, and will pass fifty percent in 1990's if the present trends continue.[26]

The United States economy has drifted out of balance because the government sector is growing faster than the tax base that supports it. The consumer sector has been damaged by inflation, and its confidence has become very sensitive to changes in the price index. And the producer sector, which provides the jobs and income on which everything in the economy

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[26]Charles D. Kuchner, Capital and Job Formation. (Illinois: Dow Jones - Irwin, 1978), p. 5

rests, is even losing its importance because of the lack of means and incentives for capital investment.

Unless the United States can change its economic programs by redirecting more of its annual output into strengthening the productive sector, the nation will continue to face increasing frustration of its economic and social goals. Full employment, rising income, stable prices, greater energy independence, and a tax base for social services require capital formation.

## Labor

Decline in the rate of United States productivity growth has captured a great deal of attention in recent years from both academic and business communities. Productivity gains have dropped nearly in half during the past decade, resulting to both increase in the rate of inflation and a slower rate of economic growth. This decline in productivity is not a short-run problem and therefore cannot be overcome by short - run solutions. Even increased inflation rate takes time to reach a particular height and it must equally take time to decelerate. Productivity plays a key role in that process.

The rate of growth of labor productivity is important in the process of econimic growth. In the present age when all sectors of society seem to feel that they are entitled to an ever-increasing standard of living, it is growth in output per man-hour of labor input that enables each worker to increase his or her standard of living. Workers are certainly expected

to demand and obtain increases in nominal wages and it is increases in productivity that will enable those dollars wage increases to be translated into real wage increases. Therefore any decline in the rate of increase in labor productivity should be considered seriously, since such decline entails a reduction in the rate of sustainable increase in standards of living that any society can support.

An examination of the annual rates of growth in United States labor productivity for the past thirty years (1948 - 1977) reveals a pattern of rates that considerably varies from year to year. Among the highest growth rates was 8 percent in 1950 and the lowest of 3.4 percent in 1974. Even yet one of the lowest (1.7 percent) occurred in 1949 and the third highest (4.5 percent) in 1976.

In order to make sense out of these findings, I will adapt the most frequently used method by comparing the years before the late 1960's with those since then. Such a comparison does give a broad spectrum of the rates of productivity and it also indicates a significant fall off. To take one frequently used division, between 1948 and 1966 labor productivity in the United States grew at an average annual rate of 3.36 percent in the private domestic business sector, while between 1967 and 1977 the average annual rate of increase fell to only 1.78 percent.[27] Certainly this indicates that some economic disorder occurred during that period.

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[27]Shlomo Maital and Noah M. Meltz, Lagging Productivity Growth-Causes and Remedies (Mass: Ballinger Pub., Co., 1980), p. 111.

A division into two groups with the dividing point set in the late 1960's, however, gives the single greatest indication of a serious economic problem. And by way of contrast, it is interesting to consider the average annual rates of growth over each of the most recent decades. Between 1951 and 1960, labor productivity grew at an average annual rate of 2.73 percent; while between 1961 and 1970, the average rate of growth increased slightly to 2.95 percent. Since 1971 there has been a lower rate of growth, averaging only 1.86 percent. This rate is heavily influenced by one unusual year, 1974, when actual decrease in labor productivity of-3.4 occurred. There was also a serious disruption in the economy during that year caused by the Arab Oil embargo.

Besides, the rate of United States labor productivity growth has been seriously hindered by the sexual composition of the workforce. More women have been employed since the late 1960's and to some extent this has affected the quality of labor productivity. This should not be interpreted to mean that female workers are necessarily less productive than males, but women entering the labor force during the period under consideration have worked for less time than the average males who were already in the workforce. This, couple with the large numbers of teenagers who have entered the job market in recent years, represent lower quality human capital.

Still, there are other factors that resulted in the de-

crease in the average ability of physical capital to contribute to the production of output around 1970. In 1970 two social regulations were passed by Congress which had power to substantially alter the type of capital spending that business establishments could undertake in the United States. The year 1970 represented the peak of the environmental movement in America. During that year the adoption of the legislation that created the Environmental Protection Agency (EPA) as well as the Clean Air Act Amendments, which set strict auto emission standards and directed EPA to determine ambient air quality standards, came into existence. In addition, Congress also passed the Occupational, Safety and Health Act, which gave all employers a "general duty" to provide a place of employment "free from recognized hazards" and to comply with the Acts standards of safety and health.

Both of these regulations have the potential for limiting the rate of growth of labor productivity. To the extent that there is limited amount of savings available in the economy due to the importance attached to consumption, more of this saving has been required for capital expenditures mandated to clean up the air and provide safer working conditions. Therefore less capital has been available for investment that could increase the physical output of each worker. I am not arguing that the two acts are socially counterproductive. The society may have received benefits from them, but when total output of labor

productivity is considered, they became impediments to the rate of growth.

The Occupation, Safety and Health Act has affected the growth rate of labor productivity in a way other than changing the type of capital investments made. Compliance with the provision of the act necessitated revisions in the structure of work and place of work. This includes such things as adjustments in the speed of assembly lines and addition of certain safety procedures to production processes. Therefore adoption and enforcement of the Act resulted to industries having the same number of workers using the same capital stock and producing less physical output.

It is apparent that much of the slack in the rate of productivity growth since the 1960's came as the result of society choosing other goals to pursue. A substantial part of the price of these goals is lower rates of productivity growth. If America desires to clean up its air, protect its workers from on-the-job hazards, and also allow previously unemployed workers with low levels of job experience to enter the labor force, the society will surely be worse off achieving these goals at the cost of lower rates of productivity growth.

# CHAPTER III

## Comparative trends in productivity

## United States and Japan

Concern about the causes and implications of the decline in American productivity, especially in the wake of the Vietnam War and the oil price action of the Organization of Petroleum Exporting Countries (OPEC), has become a major subject in United States economic history. Is it therefore helpful to compare the American record with that of another country for the same period. For this purpose, I have chosen Japan because it is an important trading partner and rival of the United States, and a country whose productivity increase rates seem to have remained positive despite the economic crises of the 1970's

There is a widespread believe however, that productivity in the United States has increased relative to that in Japan and this is very much interesting to most Americans. The argument largely depends on the definition people give to productivity. If productivity is used to mean the real gross output or the gross value added without deductions for depreciation of fixed capital per employee or per labor-hour, and if the dollar is evaluated relative to the yen and vice versa only in terms of a purchasing power index over gross domestic products (GDP), then American productivity in the late 1970's remained well above the

Japanese in most major industries of the two economies. Even at that, American advantages have decreased tremendously in most industries since 1970.

Controversy over declined United States productivity relative to Japan can be reduced, if not eliminated, by looking at differences in growth rates of the two nations. In 1952 the Japanese level of technology was merely one-fourth of the United States level. During the period 1952 - 1959 this difference was reduced from seventy-five percent to fifty-one percent. Entering 1960 the level of Japanese technology advanced sharply relative to that of the United States, reaching nearly ninety percent by 1968. Between 1968 and 1973 the level of Japanese technology actually overtook the United States level, such that by 1974 the aggregate level of technology in Japan stood ahead of that in the United States.[28]

There was a dramatic reduction in the difference between United States and Japan total output during the period 1960 - 1974. This was the result of substantial increase in Japan capital input relative to United States capital input and the closing of the gap between the two nations' technology. Japan and United States labor input grew at almost identical rate, but the average annual growth rate of capital in Japan was nearly three times the United States rate. Japanese productivity during the period under consideration grew at the rate of four times that in the United States on average. And although

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[28]William J. Boumol and Kenneth Mclennan, Productive Growth and U.S. Competitiveness (New York: Oxford Univ. Press, 1985), p. 74

the gap between United States and Japanese technology has been closed since 1973, there still remain a substantial gap between the capital intensity of production of the two nations.

Let me take this time to draw your attention to some other factors that have influenced the rate of productivity growth of Japan and the United States. Demographically, Japan has not experienced the recent American problem of adapting large numbers of semiliterate rural workers to industrial discipline and other production routines. Even though it has its racial minorities and prejudices like America, but the numbers involved are much smaller than in the American case. Besides, Japan has not copied the United States affirmative-action policy despite the trade link that is existing between the two countries.

The Japanese problem in labor demographies is an aging workforce which includes male workers who live longer, female workers who enter or reenter the workforce just after their youngest children are in school, and the rise of the age at which both young men and women leave school. Even though older workers are reliable and disciplined, they certainly lack the physical strength and flexibility that is required at most times to learn new techniques. A typical older worker is of course a permanent employee as compared with a younger worker. His pay is relatively high, and his employer would definitely like him to retire earlier in order to make way for better, younger and cheaper workers. Early retirement in individual

case can be induced by a variety of informal social pressures within an organization. Japan is still making research on methods for expanding and formalizing a procedure for selecting the more productive older workers without necessarily antagonizing the less productive ones. On the other hand, however, a typical older female worker is a labor force reentrant and she may or may not be a permanent worker. Nevertheless, if she becomes proficient at some lower level skill and is not too insistent about promotions, the possibility of let go or lay off in difficult times in very narrow.

Younger Japanese industrial workers, both blue collar and white collar, are predominantly high school graduates. Most of them are from secondary schools which are superior to American public high school.[29] Proposals have been made in Japan to send the academically less talented students into pure technical or vocational institutions and this was reaction in the direction of the nation's pre- 1941 educational system. These proposals are generally opposed by parents and they really seem not to have received widespread support. Nevertheless, there are considerable amount of technical and vocational schools but prestigious employers hesitate to hire graduates of these schools for their main-line jobs. And once employed, the male worker in the "good" company is assured to be a permanent employee. Therefore Japanese employers make larger investments in technical and vocational training on the job for their employees than it is

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[29]Ibid., pp. 74 - 75

in the United States.

The American job-hopping problem does not exist in Japan. In the United States one can never expect good teamwork, group loyalty, or even a common interest in raising firm productivity because jobs are very unstable and employees minds are filled with insecurity. At most times either almost half the workforce in any particular company will quit or will be laid off by management within twelve months. Therefore neither workers nor company has any interest in the economic success of the other. Workers, including managers, are not willing at any rate to sacrifice to help build the future prosperity of the company they work for since they are aware that they certainly will not be around to share in that prosperity. Conversely, the company is also not willing to invest in the future success of any individual worker, because that person has the tendency of accepting employment elsewhere when the investment that goes into training him pays off, if it does at all. The result of this situation in the United States is gross underinvestment made by companies in creating on-the-job skills necessary for industrial success. Even though blue-collar workers are traditionally trained on the job, but with today's high turnover rates firms are reluctant to invest in training their workforce since there is very high probability that the workers will soon leave for other jobs. For the individual firm it is cheaper to bid, with higher wages, to get a skilled and qualified worker away

from other firms, but obviously this does not work for the economy as a whole. The result is a perpetual shortage of skilled and qualified blue-collar workers whenever the economy remotely begins to approach anything remotely resembling full employment.

Looking at the rate of capital per worker for the two countries, the higher Japanese propensity to save and lower propensity to invest in private residential housing enter the scene. Japan has a very slow consumer credit development process and some people have even been tempted to call it underdevelopment. This has meant that, in the inflationary environment of the 1970's, Japan had an increased saving to make large down payments, which is in contrast to the United States pattern of buying to beat the next price rise at the expense of saving and investment.

The Japanese are less boostful about their managerial successes than were their American predecessors in the period immediately following World War II. They consider American workers as being overpaid and lazy, a disease that threatens United States prosperity. The notions known as "miracle management" and "Theory Z" are from Japan and it's their system of managing people and organizations. They practice the system that states, "do as we do, and as we will teach you to do". Japanese actually wonder if their management methods can either be fully understood or effectively applied by people that are unfamiliar

with Japanese culture. "Japanese culture" in this particular context does not mean mere flower arrangement of tea ceremony, as some may call it; rather, it refers to the Japanese ethical and religious background in Buddhism, Confucianism, and Shintoism, together with the "way of the merchant" to which these philosophies give rise during the early years of the seventeenth century.

The characteristic features of the general Japanese model of personnel management for high moral and high productivity include the following seven items:

1. Lifetime employment, at least for male workers, until retirement age is reached, with possible dissmissal only for cause which is granted after a brief trial period, usually three months. This protects workers against layoffs in slack business periods. It also protect those workers whose skills may become obsolete due to technical innovations or improved methods of job performance.

2. Japanese believe in seniority wage system, under which a worker's wage is related more closely to his seniority, family responsibilities, and prior educational record than to his on-the-job performance.

3. Loyalty of employees to companies for providing training opportunities, good wages, and fringe benefits. Employees are not expected to leave companies voluntarily except remarkable opportunites arise elsewhere. In fact, it is an unethical behavior for employers to induce workers to leave one firm for another.

4. Great care is adapted in the selection of permanent employees. The age limit and flexibility required to absorb frequent training are attributes in great demand and these attributes are judged by educational records. Educational records include levels of examinations passed, quality of schools attended and Civil Service examinations or company established equivalents. Interviews are usually long and often even more important because management wants to know exactly how

well the candidate will get along with people and also how well he will absorb the company's mind and spirit. They try as much as possible to estimate the individual's tolerance of inevitable intervals of dull or repetitive work and slow promotion. Potential militants and troublemakers in workplace whose actions are likely to disrupt production or smooth operations are absolutely weeded out.

5. Subjection of employees to frequent training, rather than letting them rest on honors of techniques already mastered. This is the system of employee job rotation either in one department or various departments of the same company.

6. Foremanship and supervision are highly regarded along with development of skills in Japanese companies. They are purposely aimed at identifying better workers, eliminating less impressive jobs, and reducing workers alienation all along the line. The Japanese foreman or supervisor is less likely than the American to be a sadist of the army sergeant type and more likely to be a friendly teacher or scoutmaster.

7. In recessions or depressions, dividends, executive salaries, executive bonuses, and other executive immunities are cut before employees' numbers or incomes are reduced. Even social pressures for early retirement are applied to office and executive employees before spreading to workers at the bottom of the organizational chart; it is almost never applied to young male workers. One Japanese informant calls this feature "genuine economics-textbook capitalism" because owners and managers of business bear the initial risks of loss. American capitalism is quite opposite to this system because major risks usually fall on workers by being laid off.

The American occupation, encountering the Japanese system for the very first time between 1945 and 1950, regarded it with aversion and hostility. In the immediate postwar depression, America considered this management style to mean merely the retention of unneeded workers, which would result to high costs and low productivity. Occupation efforts to force the Japanese

goverment, particularly the Japanese National Railways, to dismiss excess workers almost led to dissolution of the system. However, the Korean War (1950 - 1953) brought about the permi-nent existence of the system and today it has become a subject of interest, admiration, and even worth imitating.

The feature most frequently imitated, though in complete isolation from the rest of the pattern, is the Quality Control Circle (QC). This system allows employees to have weekly meetings so as to identify ways and means of effectively performing their duties. Problems are identified, suggestions made, and solutions formulated and adapted. The employees decide how to increase the quality of products so that customer satisfaction can be assured. Therefore quality assurance and customer need satisfactory are joint responsibility of management and employees of Japanese firms. The system incorporates the energy and ingenuity of workers and management in problem, cost reduction methods and other aspects of improving operations. It makes employees to create special affection for their jobs because of the great deal of control they have over how their jobs should be performed. Therefore competition exist among Japanese corporations as to who has the best record for productivity and quality assurance. Communication between management and employees is organic, ie., information goes from top to bottom and vice versa.

Conversely, in the United States top business executives

are the decision makers with the approval of board members. All decisions come from the top with directives for executives whether the objectives of those decisions are attainable or not. Communication between management and employees is mechanistic because information flows downward with little or no feedback in return. Suggestions from employees about improving production and operation methods are rarely adapted by management. This negative attitude on management part concerning employee suggestions is one hindrance to productivity growth in the United States. For instance, if management of a particular company realizes that an assembly line is moving slow, they are readily inclinded to getting engineers from outside who will suggest and implement a speed rate without consulting employees who are directly working on that assembly line. Therefore installation of the new speed rate results to lower output if the workers are unable to cope with the rate of acceleration. Total productivity declines and then management wonders what the problem could be. This was the exact cause of General Motors workers strike in 1972. Most times management will diagnose the wrong issue because of their inability or unwillingness to consult the workers on the cause(s) of the problem and how best it could be solved. Assembly line workers feel like slaves because such systems treat them as machines. And on most assembly lines there is nothing like go to the bathroom, blow your nose, or make a mistake; there is even no room for breakdown of machine

or man, the assembly line stops for no man and the pace is usually brutal. No matter how hard employees work, it is just not good enough for the supervisors. Their chief occupation is to stroll about the floor and make remarks like "Hurry up Guys". Workers only follow orders which is morally terrifying as well as physically exhausting. The idea behind American assembly lines is, take a finished product and break it down into the smallest number of tasks needed to make it, and then have one person do just one task.[30] It is then assumed that the most-efficient means of production will be achieved thereafter.

United States productivity deterioration has become a national and a contemporary issue. Economists, businessmen and government officials have become concerned about this issue to the extent they fear it will reduce economic growth and increase both inflation and unemployment simultaneously.

According to figures released by the Labor Department productivity rate in the first quarter of 1979 declined at an annual rate of 4.5 percent. Historically, the rate of productivity in the United States has been increasing about three percent a year. It is often thought of as efficiency and in its most commonly watched form, it refers to how much an individual worker is capable of producing in a given amount of time.

In 1978 productivity growth in the United States showed an unbelievable slowdown from accustomed rates as reported by the Council of Economic Advisers, which consequently accentuated

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[30]The Assembly Line: Still Dehumanizing, "The New York Times", January 22, 1984.

the inflationary pressures and fundamental concerns about underlying trends. This downward trend in productivity growth meant the nations' outlook for long-term real economic growth dropped to three percent from three-and-one-half percent.[31]

An increase in productivity allows employees to increase wages without increasing prices because each worker produces more. Even though wage increases have occurred in the United States over the years, but because of slower productivity growth the wage increases have not completely been offset by output increases. Therefore costs to businesses have increased, which raised prices, leading to more inflation. Higher prices cut consumer purchasing power, reduce economic growth and increase unemployment. Therefore enhancement of economic growth necessarily means increases in productivity growth rates.

The success of Japan is sometimes considered as a mystery by America and other western nations. The Japanese economy consists of two favored theories which are habitually invoked by American protectionists. The first is that the disciplined Japanese culture gives the economy inherent advantages in competing with rivals. Secondly both business and government are simultaneously engaged in large ventures to gain economic dominance. Success of the economy is therefore not a mystery and it could be replicated by other nations. Japanese competitors are not products of the mysterious East, but rather they are economic organizations responding rationally to opportunities and

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[31] Productivity Rate Causes Worry, "The New York Times", May 8, 1979.

problems.[32] They believe that the name of the game is "winners' competitive cycle, and the winners are those who have got a cycle going for themselves by boosting their share of market more and faster than their rivals could." To lose in this game could mean corporate death and so Japanese are reckless players, borrowing heavily at times while prices are slashed and then investment made in productive capacities and promotions. Obviously profits will suffer in such cases but only temporarily and when the desired market share has been obtained, the economy quickly recoups losses incurred out of increased earnings. And in order for Japan to maintain or even to improve its market share, the economy is constantly reconstructed. As industries rise and fall, new ones spring up to replace them; and with few exceptions verdicts of the marketplace are absolutely decisive. Companies that are seen as impediments to economic prosperity are cut off without any mercy. The industrial landscape is not cluttered with noncompetitive market situation that is fostered by government subsidy. One of the government's most valuable contributions to the economy, which is never mentioned by Americans, is that it runs an excellent educational system. As one author flatly stated, "Japan's labor force is quite simply the best educated in the world."

One fundamental difference between United States and Japanese corporations is the status of shareholders. Japanese shareholders expect regular dividends just as American share-

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[32] Japan's Business Jungle. "Fortune", February 3, 1986, p. 132.

holders, but a small one, generally around two percent of the share price. They are not primarily after quick payoffs or big quarterly jumps in dividends, but a solid market position that will be rewarding over the long run. Therefore once their modest demand in dividends is met, they play no further role in the company. Managers are free to do whatever they consider necessary to strengthen their company's competitive position over the long run. They are absolutely free from pressure to show steady increases in earnings per share as American Managers.

The exertion of profit pressure on Japanese managers would have restrained many of the companies in the periods when they were sacrificing almost everything just to gain critical market shares. In effect, I am implying here that American Managers are not free enough to consider their basic corporate values in the struggle to survive and prosper in the international markets.

There are few cross-cultural borrowing in Japan, but for the most part Japanese have surprisingly remained unchanged. One of the most important features of their native characteristics is the willingness to achieve consensus by compromising. They believe that an individual is an extension of his immediate family members, his company, his community and his nation as a whole. Therefore everyone is bound together in pursuing common goals and objectives. Japan strongly feel that it is a

"family" because nearly everyone has at least some saying about how to run the society. Despite the size of a group, ie., from the smallest enterprise to the large multinational corporation, nothing gets done without getting the consensus of everyone involved. Though the process is tedious and time consuming, but the end result is fruitful, especially if the objective is to achieve some economic gains from which everyone receives benefits.

A good example of Japanese group consensus is the quality decision. Plant and factory workers are encouraged and expected to make group decisions about product quality making quality control their top priority. Once a decision has been reached on how a product's quality can be improved and maintained, everyone automatically gets instilled with the notion that each group member is a quality control inspector. If they spot a faulty item during the production process, they are encouraged to shut down the entire assembly line to correct that fault.

In the United States the situation is quite different and far from group consensus. Plant and factory employees are rather given production quotas to meet within certain time limit and decision as to whether these quotas are attainable or not, are made by top management without employee's participation. Therefore, though management could be interested in both quantity and quality output, but the employees' attention will focus on producing more to meet the target with little or no re-

gards for quality.

The Japanese today look down on what they regard as the poor quality of American products. One example of this is authentic and is familiar to any Japanese car dealer who attempts to see American built automobile in Japan. The cars must be given an additional coat of paint before they can reach a satisfactory stage of demanding Japanese. Quality is a priority to the Japanese, and their domestic market is the principal battleground for most of the companies. Therefore products shipped to other countries have high quality and low price in large part because they have already survived the domestic market. Says one American economist living in Japan. "their idea of competition is different from ours, yet they compete furiously; it is all done within the context of being very Japanese - orderly."

New Products enter the Japanese domestic market with high promotion frequency. In the electronics industry alone there are eight major and a number of minor semiconductor firms battling for a lead in the manufacture of microprocessor and the computer on a chip. This technology was pioneered by American firms in the late 1960's, but Japanese companies have already captured thirty percent of the world market for computer memory chips. The rush to use the chips has even driven the nation's automakers into precipitous competition just to come up with new applications.

In 1980 when Toyota introduced the world's first chip-operated voice syntheizer to warn drivers of low fuel and fluid levels in their cars, Nissan Motor hustled out its competitive versions just within weeks. And although Japanese believe in competition both at home and abroad, they are strongly held together by the national spirits of compromise, cooperation, and willingness to endure short-term setbacks for the long-term good of the nation, company or family in general. When these features are brought together into the modern factory, the result is smoothly functioning enterprise that produces quality goods. There is an easy working relationship between management and labor. In fact, Japan has fewer strikes and less labor unrest than any major industrial power.[33] The workers trust their bosses for making the right decisions because everyone believes that both labor and management are working together for the good of everybody.

The United States is as quality conscious as Japan, but the question is how to motivate employees to perform their jobs with excellence. In order to answer this question Americans are now inviting Japanese executives to help manage their businesses. They have found out that Japanese managers are famous for inspiring loyalty, long hours and high quality production in their workers. Japanese concept of consensus is presently at work in San Diego at a Sony Television Manufacturing plant, where Japanese executives are helping to supervise American

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[33]How Japan Does It, "Time", March 30, 1981, p. 58.

workers.

To begin with, time clocks are absolutely banned from the premises of the plant and managers and workers converse on a first-name basis. The gap between managers and employees is narrow to the extent they have lunch together in the company's cafeteria. Employees are briefed once a month by top executives on the goals and objectives of the company including sales and production targets. They are encouraged to forward their complaints at all times without any hesitation. Four times a year all employees, including top executives attend company paid parties. Says Betty Price, 54, and an assembly line person, "working for Sony is like working for your family."

The expression made by this employee, which is the same as dozens of other American Sony workers in San Diego, is an absolute measure of success that has been achieved at the plant. In 1981 the plant projected a 700,000 turn out of color television sets, which is one-third of Sony's total world production. More significantly, company officials are now proudly saying that the plant's productivity approaches that of its Japanese facilities.

The firm endlessly strives to build strong ties with its employees with the hope that they will show loyalty to the company in return. Promotions are made from within, most of the supervisors are high school graduates who have gained supervi-

sory positions because of their hard work and dedication to the company. During the 1973 - 1975 recession, when television sales dropped and production slowed drastically, no employee was fired.[34] The workers were instead kept busy with plant maintenance and other routine work. In fact, Sony has not laid off any employee since the plant was opened in 1972. Most American workers like the Japanese management style and some do not find it that foreign at all. As remarked by an American supervisor at the plant, "A long time ago Americans used to be more people-oriented just the way the Japanese are. It just got lost somewhere along the way." The experience Americans are gaining from Sony in San Diego might show them how to regain some of their skills at employee relations.

In the United States there are differences among labor leaders, industry and government on how best to curtail inflation. Nevertheless, there is a general consensus that increased productivity is one effective way to solve this problem, but surprisingly enough the agreement stops right there. Considering increased productivity as a national goal is one thing and implementation of the goal is entirely another. The discussion of increased productivity is usually done under conducive atmosphere, but the closer it gets to the workplace the greater the resistance from workers. Social theorists believed that American workers could be more receptive to increased productivity if their salary conditions were improved and job securi-

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[34] Consensus in Dan Diego, "Time", March 30, 1981, p. 58.

ty assured. Contradiction of this notion was seen by the General Motors strikes in 1972.

The strike at Lordstown, Ohio, was first characterized as a revolt of youth workers against the tyranny of the assembly lines. But when a similar strike was staged at the Norwood plant by older and experienced workers, the situation was then characterized differently.

The problem was that both young and old General Motors workers saw that management's method of raising productivity was nothing but a speed-up, trying to operate the assembly lines faster and with reduced crews. Therefore they resisted management's plan as workers anywhere could have done. And if highly paid employees with top job security antagonize plans to increase productivity, those plans may well be considered as illusions and any expectation that great majority of workers will be receptive is just naive.

American workers are not receptive to productivity improvement because they just don't trust their bosses in making the right kind of decisions. And for management, they completely ignore consulting employees on how best to enhance productivity improvement. Therefore plans to increase United States productivity are blue printed, but the implementation phase is always difficult to achieve. Of course workers' opposition to increase productivity can be transformed into cooperation, but management should be willing to grant bonuses for

greater output, as well as encourage employees' participation in decision making.

General Motors and other American automakers have pleaded for years for relief from the defeat they have taken from Japan. While sales of American-made cars have been declining, Japanese-made Datsuns, Toyotos, Mazdas, and Hondas have been imported to the United States at the rate of some 6,000 vehicles a day. This import flood has given Japan twenty-three percent of the entire United States auto market. In March of 1981, General Motors' Chairman, Roger Smith, was stuck by Japan imports rate to the extent he urged a "short-term voluntary" cutback in imports and warned that the alternative solution would be a trade-war with Japan. The high rate of Japan imports has even become a political issue with the Reagan Administration and the government of Prime Minister Suzuki working determinedly to settle the most controversial trade issue the two countries have faced since World War II.

The main problem here is the rapid deterioration of a major American auto industry over the past few years. In 1980 Detroit's automakers lost more than $4 billion and prior to that time, United States annual auto production slumped by thirty percent. By 1981 almost 200,000 American autoworkers were unemployed, and many of them had little hope of ever returning to work in their industry. To these workers as well as to most United States auto executives, the impediment to their

success is Japanese imports. Since 1975, annual sales of Japanese cars in the United States have jumped from 800,000 to 1.9 million.[35]

The trade issue between Japan and the United States has taken on such importance because of the auto industry's key role in the economy. At least one out of every five American workers is employed either directly or indirectly in making, servicing or selling cars. In addition to this, industries like steel, glass and rubber are heavily dependent upon automobile sales in order to keep their plants operating. Notwithstanding, the suggestion made by some American automakers to restrict Japanese imports so that their products can sell doesn't seem to be receiving popular support. If trade restriction are levied against Japan, the American consumers will be penalized because then United States automakers will raise prices without fear of being undercut by competition from Japan. Such protection in the United States could also have serious consequences for the nation's foreign and defense policy. Therefore the best and ultimate solution is for the United States automakers to build products that are better and cheaper than anything Japan has to offer.

Besides improving on quality in the United States, government and business will have to get together, cooperate, and provide some direction for industrial growth. One of the most important factors responsible for the success of Japan is that

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[35]How Japan Does It, "Time", March 30, 1981, p. 54.

both government and business work in harmony for the economic and social advancement of the country. Japanese businessmen do not have to bear heavy burdens of government regulations that American industrialists do. For example, Japanese auto companies get together with government officials and they agree on a common design for antipollution equipment. Similarly, government and business work out mutually acceptable agreements for solving health and environmental related problems. Today, Japanese carmakers are at least two years ahead of the United States in emission control technology.

The situation in the United States is quite contrary to that of Japan and it seem as if government and business have an adversarial relationship. Most government activities that are related to business actually don't tell the businessmen how to succeed but instead they emphasize on what not to do. The government doesn't seem to feel obligated in any way to help industry grow so that American citizens can improve their living standards. Even the auto emissions regulation is such that each auto company work independently to develop its own system. There is no formal organization coordinating government and business. Efforts to improve productivity growth are applied in opposite directions resulting to a productivity dilemma. There is a need for consensus between government officials and businessmen in order to overcome obstacles surrounding the downward trends in United States productivity growth.

Japan shows that a large and complex society can function smoothly in a disorderly world environment if people are willing to make some compromises in order to achieve larger objectives. Government and businesses in Japan therefore look five, ten or even twenty years ahead and try as much as possible to build an economic prosperity that promises to last. Executives are constantly doing their utmost to provide employees and their families with a stable life and hope for the future. Such condition hardly exist in any sector of the United States economy. Everyone is out there fighting for his own economic gain even if it is attainable at the expense of others. Though America is reach with natural resources, but because common consensus is almost never obtained in efforts to achieve national objectives, the nation is finding it very difficult to overcome its economic problems. The Japanese way of managing affairs is in many respects, tied to the unique outgrowth of the country's historical experience, but certain of its lessons are applicable to industrial economies everywhere, particular in the United States.

America in any case, needs to realize that teamwork, despite the nature of its organization, is the prerequisite for a prosperous society. Like in Japan, the economic success of the nation is not the concern of the business sector alone, but rather the government, citizens and businessmen. In fact, the deposits of Japanese citizens is a major source of capital that

is keeping the plants modernized and productive. It is the savings of all kinds government, corporate and personal that has enabled Japan to get to the top and continue to stay there. For instance, during 1980, Japanese workers saved an estimated twenty percent of their individual and family incomes, more than three times as much as the American.[36] The high propensity of citizens savings has given the country more momentum to advance its economic growth.

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[36]How Japan Does It, P. 57.

# CHAPTER IV

## Other Major Influences on Productivity

## Management-Labor Relations

Productivity should be looked at from many perspectives and there is a need in the United States to explore the relationship between management and employees. The greatest single impediment to productivity improvement in America is the adversary relationship between labor and management. Management and workers have completely different goals, aspirations and needs because both groups are not motivated in the same direction.

Productivity improvements often require capital formation needed to build new plants, modernize old ones and eliminate obsolete ones. Labor-saving technology may also be necessary which includes work-rule changes. Unfortunately, however, most American workers are absolutely against productivity improvements because they are likely to be penalized by layoffs and fewer work hours.

The greatest single reason for workers' opposition to productivity improvements in the United States is job insecurity. When management discovers and adapts productivity improvement techniques which at times entail automation, employees are immediately laid off without being retrained or compensated for the cost of finding new jobs. Employees are treated by management with no compassion which results to strained relationship.

They receive no financial gains, nor are they persuaded that reduced costs will benefit them. But they readily see that management benefits from every productivity improvement. Obviously the answer to United States productivity problem will not be found in chaos.

American executives are very much hesitant, if they are willing at all, to share the benefits of increased productivity with employees. These executives believe that management is solely responsibile for productivity improvements and therefore gains should not be shared. They hold to the notion that employee incentives will deteriorate over certain time period and get out of control. Some of these executives actually don't know how to share gains because the process seems too complicated to them. They end up doing nothing which accentuates the already existing adversary relationship.

Strikes, lawsuits, grievances, injunctions and restrictive work rules are counterproductive.[37] Precious time and energy that could be devoted to making meaningful decisions is always diverted into needless game playing between management and workers, where most times everyone ultimately loses. Most managers appear to have accepted the inevitability of adversary relations with their employees and have developed ways of operating successful under such conditions. These managers have decided that reduced costs and increased productivity come from management's efforts, improved technology and by using of more

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[37]Michael Le Boeuf, The Productivity Challenge (New York: McGraw-Hill Book Co., 1982)

effective and faster machines. They more likely seem to completely disregard worker cooperation and so they cannot see any sense to sharing productivity gains. As such productivity improvement programs only stress productivity without workers support. There are no incentives for the workers and so they are just not enthusiastic about their jobs in any way. Workers do not identify themselves with the companies they work for because they are convinced that such gestures will do no good for them in any case.

Productivity improvement programs require share responsibility between management and workers. "Share Economy," as Martin Weitzman calls it, is important for economic growth especially for the United States where productivity is continuously declining. It is a brilliant idea for the 1980's, but its true success will depend on how to address the problems of the 1990's.

By the 1990's if industrial nations, including the United States don't encounter some catastrophe, the real effect of computers on the way wealth is created will be seen. By then there may well be few people working in factories and offices to share corporate responsibility.

Today in manufacturing there are handful of engineers who design the components and assemblies for cars, washing machines and other consumer products. These engineering designs are central to computer data base which automatically support all

facets of production.

If this trend of technological advancement continues, by the 1990's there no longer will be need for draftmen to draw blueprints for any manufacturing purpose. Engineers will create computer programs to drive machine tools; process planners will develop a sequence of manufacturing steps needed to make a given part; schedulers expedite the flow of work through plants; clerks handle inventory records, machinists load work pieces, change tools and fixtures for machines and other production equipment; while assemblers put parts together into products for shipment. Even jobs for welders, painters and many others will no longer exist.

Traditionally these are human tasks that will then be performed by programmable machines under the control of computers with software programs to plan and track factory operations. This view of manufacturing is obviously not a fantasy because it is far closer to implementation than some people may know. The computers, controls, and material- handling equipment for computer-integrated factories do exist at present. Lots of software also exist and much more is in development.

Being aware of the negative effects these technologial advancements will have on job situations, American workers are bitterly against automation. They consider the success of these programs an impediment to their economic well being because the accumulated benefits will be enjoyed by management without re-

gards for their participation. The United States economic problems of today, 1990's and after will have to concentrate on ways to distribute economic gains between management and employees.

Inflation is almost chronic in the United States because increases in compensation per man-hour exceed the rise in output per man-hour. Certainly if employees are demanding more from management than they can offer, the gap thus created between revenue and expenses must be filled by price increases.

Worker wage demands in the United States is almost never in conformity with output because no industry operates in a vacuum. Whatever is done for one group, however logical or necessary it might seem, is likely to affect the demands from other groups as well. Therefore the tendency is that wage rates in all areas of the economy move together which makes wage bargaining based on productivity of any one group or industry very dangerous. This wage demand system has completely displaced the logic that workers in an industry should be rewarded for increases in output because they are somehow responsible for those increases. Labor leaders are most concerned with seeking the largest possible wage increases and fringe benefits for their members without any regards for the long-run impact of their agreements on corporate earnings and how this may even impinge on capital formation.

The United States organized labor system is very different

from labor systems in other industrialized and third-world nations, which is also contributing to the slow rate of productivity growth. Every classified group of employees in United States business establishments has its own labor organization independent of any other within the same company. Each group or unit negotiates with management separately and strike time varies depending on management's response to workers' demands. As the result business executives spend more time bargaining with labor leaders when in fact they should be making plans toward economic improvement. Strikes are usually followed by momentary standstill in operations and the system seems more or less perpetual because each group keeps surveillance on the activities of the others. Sometimes negotiation ends into a deadlock and then both management and workers end up achieving nothing at last.

Conversely, in other nations each company has one recognized labor organization despite the number of employees or size of the company. Therefore management negotiates with one set of labor representatives, and whatever is achieved during such negotiations is applicable to every worker indiscriminately. Hence, sufficient time is spent on long-term planning rather than spending countless time bargaining with several units of workers. Most nations experience fewer employee unrest than the United States, where more time is spent around bargain tables.[38]

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[38]How Japan Does It, p. 54.

American managers are always preoccupied with making the most of today's decisions and assuming that tomorrow will take care of itself. Unfortunately when tomorrow has arrived they lately realize that it isn't taking care of itself in any conceviable way. The net result is that opportunites are missed, and then managers spend much of their time busily conferring with each other and wondering why they have worked so much but practically little or nothing has been accomplished.

The adversary relationship between management and workers is even causing management more losses than mere time consumption. Legal costs have become substantial portions of companies' financial outlays and increasing share of management is made up of lawyers rather than engineers. This stems from management involvement in business related legal activities and the undermining of market forces that are inevitable results of protectionism.

American workers are no longer willing to offer loyalty and dedication to companies. They have reduced their efforts and everyone seems to be working just enough to keep his job. Even though companies are yawning for employee commitment to work situations, it appears unattainable under the existing relationship. Employees are fully conversant of the fact that management will abandon them whenever there is a downward trend in business activities. Even if cost-saving techniques are dis-

covered by workers they are never brought to the attention of management because that would leave the workers with no jobs. Workers in the United States could be excellent and nearly or possibly more productive as their colleagues in Japan, but they are not encouraged to offer their best.

## Managerial Philosophy

There are three basic sources of productivity in every economic setting. First is labor, which is the mental and physical efforts of workers; second is management, the activities of planning, coordinating, motivating, and controlling; and third is technology, the combination of machines transferring energy into useful work. Historically the greatest improvements in the productive powers of workers came about through the division of labor. Today the organization of workers is the first and most important managerial contribution to productivity.[39]

It is comforting to assume, as some Americans do, that the trend of increasing productivity in the United States after the Industrial Revolution is still in progress. People often say that machines will increasingly replace the labor of men and women, with the benefits geared toward raising the American standard of living. Certainly if the economic pattern the United States established during the Industrial Revolution were to continue up to the present time, progress by now would have ultimately overcome poverty.

The constantly rising productivity trend during and after

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[39]James O'Toole, Making America Work-Productivity and Responsibility (New York: Continuum, 1981), p. 1.

the Industrial Revolution leveled at some point and then began to fall. It was thought to be just a temporary setback, but the growth rate seems to be continuously declining year after year. There are many reasons for this downward trend in United States productivity, some of which I have already explained in previous chapters. Nevertheless, I also strongly believe that the nation's economic woe is rooted in the managerial philosophies.

In most organizations in the United States managers stubbornly retain certain product mix, technology and work processes that were appropriate in the 1950's but have now become obsolete. Therefore an attempt to increase foreign competition is almost never fruitful and the productivity of labor declines. The workers in effect suffer the cost of mismanagement by been laid off.

Sometimes productivity may be accelerating in one of many branches of a particular company and the unusual record of performance in that branch may have been achieved through "self-management", ie, giving workers more autonomy. But managers in central headquarters may decide the branch has been operating outside of company's staffing norms and therefore introduce several layers of managers.[40] Consequently productivity in that branch drops to the company's average because there are too many people giving too many orders.

Most managers have the assumption that workers are lazy and irresponsible and therefore they must always be told what

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[40]Ibid, p. 4.

to do. Unfortunately this does not hold for every worker because there are some workers who are ambitious and dedicated. Managers however, are unable to make use of the talents of the good workers because of the assumption they hold. Employees have become accustomed to awaiting orders before performing their duties even if they are aware of what should be done in any case. As the result workers who are interested in the intrinsic rewards of their jobs find it very difficult to achieve those rewards. They become frustrated and this results to high employee turnover. Managers fail to realize that workers are not all alike; they have different needs, interests, and motivations, and these characteristics constantly change over the career of each worker.[41]

Workers and union officials in the United States are frequently skeptical of emphasis on increased productivity. They fear that to increase productivity will mean that some workers will lose their jobs and American executives agree with a majority of union members that productivity gains benefit companies at the expense of companies employees.[42] In effect business executives are not convinced that increased productivity can help organizations, employees and it is a vital necessity in the fight to control inflation and meet foreign competition.

United States executives are too worried about making short-term profits for their companies and this zeal has caused them to have little concern about their workers. This is the

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[41]Ibid, p. 5.

[42]Robert A. Sutermeister People and Productivity, (New York: McGraw-Hill, 1976), p. 76.

result of pressure they receive from shareholders to show constant increases in dividends at the end of every quarter. Those managers who will fail to achieve this objective by showing losses may soon fine themselves looking for new jobs.[43] Therefore most of the managers of United States businesses don't work with the assumption that either they or their workers will spend an entire career with any one company. Hence, turnover is high and there is less incentive for managers to invest in the long-range development of people.

United States companies failure to consider the long-range potential of workers is just a fragment of the problem. Long-range investments such as buying new plants and equipment or funding research and development are crucial and have been neglected because managers are under immense pressure to make today's profit picture look as bright as possible. Investing in the future, decisions to innovate and update are all postponed in the name of squeezing the last drop of profit out of today's income statement.[44]

The American automobile industry is an example of management interest in short-term results at the expense of long-range prosperity. After the 1973 Arab Oil Embargo, it became obvious that skyrocketing energy costs were definitely going to make highly gas consumption autos no longer practical for the vast majority of Americans. Instead of committing resources to a long-range policy of developing high-quality,

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[43]Le Boeuf, Challenge, p. 76

[44]Ibid, p. 75

fuel-efficient cars, the auto industry scaled down existing models and hoped for the best in the future. Consequently in 1980, fuel-efficient foreign cars accounted for nearly 30 percent of the United States auto market. Opting for short-term profits in 1973 put Chrysler on the endangered species list and posted record losses for Ford and General Motors in the eighties.[45] Yet, short-term thinking is more the will than the exception in the corporate offices of America today.

One of the biggest pressures on American executives comes from Wall Street, where the dominant idea is to make today's financial statement attractive and increase the value of company stock. As remarked by Andrew Fuller of Microdata Corporation, "When you are down, you can't see future performance worth a damn on Wall Street". And the main reason managers opt for short-term results is that shareholders and board of directors evaluate the financial and career incentives of managers using short-run performance as the basic criterion.[46] Promotions, bonuses, stock options and other management decisions are all based on today's profits. Economic incentives that should be tied to long-range company growth are rare or probably nonexistent. And managers, as anyone else, behave in their own interest or at least to the point they know they have a job.

Most corporations in the United States are bureaucratically structured such that nothing goes on without passing through

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[45]Ibid, pp. 75 - 76.

[46]Ibid, p. 76.

established channels. Layers of middle management are constantly added to organization structures which in effect widens the communication gap between people at the top and those at the bottom. As information is sent from the top to the bottom each manager reveals those information he feels should be disseminated and reserve part as means of gaining more power.[47] The result of this is that top management is frequently divorced from reality and is unaware of what goes on at lower levels. When it comes to realize that communication has been distorted, it is then too expensive to correct the situation; hence objectives and goals are unfulfilled.

## The Energy Crisis

The crisis in the world's oil market began in October, 1973 and it has been general agreed that the problem was a sympton of something more profound. If the problem had simply been that of the oil trade, it would have probably been important enough to command world attention. But unfortunately the meaning of the crisis seems to have been bigger than oil, maybe even bigger than the Middle East War that triggered it.

During the fifteen months of the crisis, a series of transformations occurred regarding how the crisis was perceived. At first, in the first few months after October, 1973, the crisis was generally seen as a threat to the security of the oil importers' supplies. Then around the beginning of 1974, immediately after crude oil price had violently moved upward, the

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[47] Ibid, p. 81

focus of concern in most countries shifted to the question of price. By mid year of 1974, however, the concern over price was converted into a concern over the international monetary mechanisms as a whole; with considerable doubts as to whether institutions existed or could be created that would be capable of handling the massive shifts in financial resources that were developing.

Though perceptions of the nature of the crisis went through several changes, but for the United States it presented some extraordinary difficult political and economic probelms. It struck two blows simultaneously, with the ultimate consequences coming gradually to light during 1974 or since the end of the winter crisis. The first was a political blow, which made the American public to become aware for the first time that the United States was vulnerable in vital matters such as its energy supply. The second was economic in nature, which was the very large increases in the price of oil that came on top of some considerable increases in prices generally between 1971 and 1973, confronting the oil-importing countries with an essential new situation. In the United States the higher prices of imported and domestic petroleum maneuvered their way through the chain of economic interdependencies until they appeared in the form of increased prices for other kinds of energy and for energy-intensive goods and services.[48] They substantially raised the cost of living, particularly in their massive impact on

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[48]Raymond Vernon, The Oil Crisis (New York: W. W. Norton and Co., 1976), p. 73.

the heating and cooling bills of householders. Possibly too, they may have contributed to the start of the recession and unemployment of 1974.

The United States became a net importer of petroleum products in 1947. Thereafter total consumption rose from approximately 6 million barrels per day in 1948 to a volume slightly under 17 million prior to the embargo in 1973. Production of domestic crude oil and other liquids rose from 5.9 million barrels per day in 1948 to 10.8 million in 1973. Imports represented over 30 percent of consumption by 1973; by midway in that year, direct imports of Arab oil into the United States were running over one million barrels per day, up from less than half that amount a year and a half earlier.[49]

Several factors contributed to the rapid growth in the demand for oil in the United States through the 1960s. The most important factor was probably the fall in domestic real prices for oil. In 1969 the price of oil, as compared with the prices of other products at wholesale, was 10 percent lower than it had been eleven years earlier. Similar drops occurred in the real prices of gasoline and fuel oil. Energy was actually becoming cheaper relative to almost everything else, and demand both in the United States and in the world responded accordingly.

There was also a rapid increase in America imports during the early 1970s and this was the result of the curtailment of

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[49]Ibid, p. 73

natural-gas supplies under regulation, the disappointingly low rate of growth in nuclear power, the environmental restrictions on strip mining and on the burning of coal, on the development of domestic oil supplies, and on motor vehicle emissions, and conflicting government policies.[50]

In America consumption of oil and its products grew at an annual rate of over 4 percent during the 1960s, reaching to 5.4 percent annual growth rate during the period 1967-72. Domestic sources failed to keep pace with these increases in demand. One factor that depressed the long-term development of domestic crude-oil reserves was the severe restriction on output that was imposed during the 50s and early 60s by state prorationing controls. For instance, in 1963, the large, efficient, and low-cost oil fields in Texas cut back production to under 30 percent of maximum efficient rate, while the high-cost stripper wells were permittd to produce without restriction. This resulted to a depression of profit incentives for further exploration and development.

It is expected that when demand presses upon capacity, as it did upon domestic capacity after 1970, price will rise and the market will search for cheaper alternatives. For the United States in the early 1970s, the cheaper alternative was imported oil. Until 1973, quantitative restrictions on imports prevented the wholesale substitution of foreign for domestic production. However, when increasing for lagging domestic supply began to

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[50]Ibid., p. 74.

push prices up, import restrictions immediately gave way. In the meantime, instead of the alternative domestic energy sources absorbing part of the incremental demand as oil prices rose, they contribute elements of their own to the growing shortage.

The prices of oil and every other fuel were escalating during the early 1970's both on domestic and international oil markets. However in August, 1971, domestic prices suddenly encountered the barrier of price controls. Domestics prices were therefore held down until early 1973. During the first few months of that year, the American price index for refined petroleum products rose by over 30 percent. Domestic crude prices also climbed by more than 50 cents per barrel. Meanwhile, in April, 1973, import controls were suspended, and the rapid rising import prices of crude oil and petroleum products had an increasingly strong effect on domestic consumer goods. Cost of living was high to the extent the Cost of Living Council in August, 1973, imposed a two-tie price ceiling. "Old" oil was to be sold at prevailing prices plus 35 cents per barrel, while oil produced in excess of 1972 levels and imports were free to sell at uncontrolled market prices. The purpose of this measure was to prevent windfall gains by producers on already developed oil, while at the same time encouraging the production of more new oil.

I am not certain whether price controls had any substantial negative effect on domestic production and capacity prior

to the embargo in 1973. Actually the period of rigorous controls was short, and prices did not move ahead explosively as soon as the controls were relaxed. What the price controls did not do was to discourage and restrict demand, which would be the effect in the early 1970's of substantial price increases.

By the fall of 1973, the United States energy economy had become heavily dependent upon imported oil supplies. The domestic petroleum prices were already increasingly influenced by the rising world price. And for several years the domestic energy economy had increasingly fallen short of meeting the demands upon them because of imperative of regulation, politics, environmental protection and technological obstacles.[51] Therefore the United States was forced to turn to imports in ever larger amounts. That of course was not the result of a conscious policy decision taken with the need of energy security in mind. As it was then, prices of oil and other petroleum products were rising fast enough in 1972 and 1973 to alarm those governmental offices responsible for price stablization. The United States government decided to abolish limits on oil and product imports in April, 1973, and replaced them with small tariffs.

One factor that affected both governmental policy and public opinion was the simple inability to believe that the United States was unable to independently survive during the 1973 oil crisis. Even though adequate survey of public atti-

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[51]Ibid., p. 77.

tudes on the embargo was not on hand, but considering the long American experience of economic power, its general feeling of invulnerability to economic pressure that has been manifest since World War II up to the early 1960s, the American public and most policy makers in government obviously did not take foreign threats of economic retaliation very seriously. The image they had of the United States economy was that of a might structure for national production, the most efficient in the world, supported by the best science and technology, the most skilled work force, and the most imaginative and resourceful management, which is solidly based on an abundance of natural resources.[52]

The United States dependence on crude oil and other petroleum products supplies from outside during the 1973 embargo, which was an economic weapon maneuvered by a group of small third-world countries, was inconceivable. The Arabs particularly directed their embargo against the United States because they strongly believed that Israel was created by the United States and that its policies and actions, specifically the 1967 war and its refusal to withdraw from the occupied territories, were all supported by America.

During the crisis principal industrial and commercial users of crude oil and other petroleum products were greatly affected. Automobile industry, trucking industry, airlines, railroads and farmers were all never assured of adequate sup-

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[52]Ibid., pp. 77 - 78.

plies and stable prices. Production slow down in these industries and there were neither investment incentives to boost economic growth. Cost of production became extremely high to the point some producers of goods and services cut back on job offer which ultimately increased the unemployment rate. There were conflicting aims and demands of economically significant groups and the energy policy in the United States during the crisis was confused and somehow ineffective.

In December, 1973, the Energy Administration Committee took away 1.5 million barrels of jet fuel from the military and allocated them to civilian airline companies which were faced with severe shortage that threatened a curtailment of services. Intercity truck operators demanded preferential allocations, higher speed limits, and a price rollback on diesel fuel. Conditions did not readily improve and so these operators reinforced their demands by blockading and disrupting highway traffic.

The Environmental Protection Agency suffered some reverses in standards as the shortage became severe. The Clean Air Act and automobile emissions standards also came under heavy attack by industry lobbies. In fact, the automobile industry petitioned for postponement of the deadline for E.P.A. standard under the act. The entire economy was in chaos and situations were very much unstable because the crisis affected every industry, either directly or indirectly. The consequences of

the crisis were apparent because of the close relationship that exist between economic growth, rising living standards and energy consumption.

# CHAPTER V

## Present Productivity and Future Trends

The United States has been in the productivity dullness for several years, and there is a growing concern about the causes of and the solutions to this perplexing problem. It appears that no other single issue is of greater common interest to government, business, and labor than the issue of productivity. It is probably in this particular area that leaders from all groups alike recognize economic improvement as the key to meeting their common needs and expectations. Government leaders view improved productivity as critical to balancing fiscal budgets, eliminating trade deficits, conserving scarce resources, and improving services provided to citizens. Business leaders see it as the means to reduce costs, improvement profit margins, and increase market share. Labor leaders assumingly look at it as the means to control the growth of job-eliminating imports and to improve worker compensation. Hence, every group in the United States sees productivity improvement as the means of achieving some economic gain, whether the various expectations are congruent or not, is completely another issue.

Productivity growth is important in achieving national, business and personal goals. The primary benefits of greater productivity growth is that more can be produced in the future,

using the same or fewer resources, and then standard of living can be raised. The future economic pie of a nation, therefore, can be made bigger by improving productivity, thereby supposedly allowing a bigger slice of that pie for each person. Constantly expanding the future economic pie can help to avoid clashes between contending groups fighting for smaller pieces of an insufficient pie.

From a national perspective, productivity improving is the only source of increased real national wealth of any nation. The more productive use of resources reduces waste and conserves scarce or expensive resources. Increases in wages, prices, and other living costs contribute to inflation if there is no productivity improvement to equally match them.[53] Pressing problems such as inflation, unemployment, increasing trade deficit, and unstable currency can be solved by achieving steady growth in productivity.

From a personal perspective, productivity growth is the major determinant of increasing the real standard of living and the best utilization of available resources to improve the quality of life.

For the business community, productivity improvement can lead to more responsive customer service, increased cash flow, improved return on assets, and greater profits. More profits create investment capital for the expansion of already existing capacities and provide new job opportunities. When productivity

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[53]David Bain, The Productivity Prescription (New York: McGraw-Hill Book Co., 1982), p. 4.

growth is steady within a company, that company's competitive position in its product market, both domestic and foreign is always likely to be solid.

Profit margin in business can be improved either by increasing sales or by reducing costs or by a combination of both. Usually most management of business focus their attention on increasing sales with lesser emphasis on controlling, if not reducing, costs. This attitude could lead to conditions that may bring about expanding markets and steadily increasing sales, provided there are no offsetting increases in variable costs. In some businesses, particularly those that are capital or equipment intensive and in which the fixed element of cost is higher, such method is more profitable because per unit profit will actually increase with high volume of sales despite significant increases in variable cost per unit.

United States business executives like people in general, seem to have the tendency of migrating toward the comfortable. Instead of confronting the issue of controlling costs, it is generally more comfortable to ride the wave of increasing demand.[54] Hence, increasing productivity, ie., the reduction of unit costs while at least maintaining or preferably increasing volume of outputs, has generally not been given proper emphasis.

The history of productivity in the United States over the past few years does not make for pleasant reading at times.

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[54]Ibid., p. 5.

After World War II United States labor productivity grew by more than 3 percent per year. In the mid-1960s, productivity started to decline and the record for the 1970s shows a further erosion of the productivity growth rate. Productivity gains from 1973 to 1977 averaged only 1 percent, while between 1977 and 1978 growth rate fell to less than 1/2 of 1 percent.[55]

In 1979, the productivity growth rate for business fell to a minus quantity and continued to decline for six consecutive quarters. In recent times there has been some intermittent, norminal and quarterly increases, but there continues to be little, if any, growth in United States productivity.[56] For every practical purpose, United States productivity has shown no substantial growth since 1977 and some of that erosion can be blamed on the ups and downs of the business cycle. Generally when an economy heads into recession, productivity growth will begin to decline. During such times, total output is usually reduced more sharply than employment. Productivity growth also declines during recessions due to loss of economies of scale as capacity utilization drops. The 1974 - 1975 recession in the United States was especially sharp and it accounts for some of the loss in productivity.

Productivity has fallen and costs have steadily risen over the years. While output has been declining, compensation for that output has continuously been increasing. Wage increases, salary adjustments, cost-of-living increases, and benefit-pack-

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[55]Ibid., pp. 5 - 6

[56]Ibid., p. 6

age improvements have all taken place in the United States over the past few years, but because there has been no corresponding increases in productivity, businesses made up the difference by raising prices. It hurts every individual in the United States because costs are rising faster than productivity and prices are increased to compensate for the difference, which is affecting the consumers. These price increases are also affecting the cost-of-living escalators built into many labor contract in that, as prices increase, wages go up and vice versa.[57] Consequently, inflation continues to increase while real output per unit of real input decreases. In effect, the situation might result to spiraling inflation since rewards and benefits are provided without compensating increases in productivity.

Comparing United States productivity with other nations in terms of overall productivity growth, the United States has constantly fallen behind the growth rate of most industrialized nations for the past few years. The gap between United States productivity gains and other nations is noticeable in many instances, with Japan, Denmark, and Belgium achieving roughly four times the productivity gains of the United States.[58] Based upon various economic forecasts and because of different national productivity growth rates, it is projected that the United States will continue to be the least productive nation unless its firms' managers take proper, decisive and prompt actions aimed at improving prodictivity growth.

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[57]Ibid., p. 7.

[58]Ibid., p. 8

There are national productivity centers in many countries nowadays. Europe has twenty of these centers; and in Asia there are fourteen of such centers. One of the most successful national centers is that of Japan, established in the 1950s during the period when Japanese manufactured products were generally considered to be "second rate" and per capital income was $200 per year. Today, Japan is recognized world-wide as a quality producer of sophisticated products. Current per capital income of Japan is $8000 and unemployment rate is only 2 percent.[59]

When asked about the secret of Japan's sustained high growth in productivity, Kohei Goshi, chairman of Japan's productivity center, replied:

"The most important reason is the cooperative attitude between management and labor. That includes our life-time employment system. Once a person is employed, that person pretty much stays with the company for a whole working career. He entrusts his entire life to the corporation. He shares his prosperity with the company. We in Japan have learned much from the United States about industrial engineering, but we have mixed that technique with more emphasis on the human side. Both United States and Europe need to do that."

Each Japanese plant has its white-collar and blue-collar Quality Circles in which three to ten employees meet at their own time to discuss quality and find ways to improve the pro-

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[59]Ibid., pp. 9 - 10

ducts they manufacture. The rewards given for usable ideas are mostly psychological. Whereas General Motors offers employees up to 10,000 per usable suggestion, a Japanese firm's award of $600 for a patentable idea is considered generous. In fact, at Nissan, the maker of Datsun, an original idea is usually awarded with a company button or a ball-point pen.[60] Japanese believe that employees inducement toward productivity improvement has many important facets other than monetary reward.

Few Japanese auto plants can match American facilities in terms of both capacity and design. For instance, the Toyota plant near Nagoya is very noisy, dark, and conjested. The assembly line produces 60 cars per hour as compared to the pace of 100 plus cars per hour of some United States auto plants. In most cases Japanese are not only concerned about the cars they build, but also about the cars they buy. A United States auto manufacturer was puzzled by the high level of activity that was reported at one time within the service department of their dealer located in Tokyo. When the manufacturer sent engineers to Japan to investigate the issue, these engineers found that the dealers's service department was engaged in rebuilding the United States - produced and - imported autos prior to their being sold rather than performing the pairs after the sale.[61] The dealer reported that, from previous experience, his Japanese customers would not just accept the American-built cars without extensive rework being performed to raise the qua-

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[60]Ibid., p. 10

[61]Ibid., p. 11

lity of those cars to Japanese quality standards.

Relationship between the United States and Japan has for some time being at a flash point due to the increasing number of cars and other Japanese-manufactured products being imported into the country. To reduce the growing dissatisfaction resulting from this trade imbalance, the Japanese are now manufacturing more of their products in the United States. American and Japanese executives are mixed and working together as co-partners. The result is that Japanese management techniques are being applied to American business, hoping that this will help in some way to alleviate the dissatisfaction and also increase United States productivity growth.

At Sony Corporation, where American and Japanese executives are presently managing a television manufacturing plant, the chairman of the company has applied a combination of 60 percent Japanese management technique and 40 percent American to the assembly operations.[62] Sony spent millions of dollars for new facilities and equipment at this plant. Matsushita Corporation (Quasar) obtained a badly neglected television operation in Franklin Park, Illinois, from Motorola in 1974 and has already spent millions to upgrade the equipment and facilities there. The company is experiencing dificulties in consistently generating profits, but notwithstanding it has successfully avoided attempts to unionize the work force. Participative management is geneally practiced at Franklin Park and the opera-

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[62] Ibid., p. 11

tion is shut down for 15 minutes each Tuesday so that supervisors can encourage employees to discuss job related issues. Defects in television sets produced at the facility at the time the Japanese took over averaged 150 for every 100 completed sets. Today the average number of defects per 100 sets is 4, and Consumer Reports consistently ranks Quasar sets the best regarding frequency of repair. Quasar sets meet United States quality standards, but its management concedes that they have a long way yet to go in order to meet Japanese quality standards.[63]

The rapid growth of foreign imports over the last few years has also affected United States productivity growth rate such that it probably has not reached its full potential. Imports have added to the problem of excess capacity and have also discouraged American businessmen from investing in new plant and equipment in many industries. People are now conscious about the impact of productivity growth on jobs and employment opportunites in many United States industries. In steel, heavy subsides to producers by foreign governments and dumping of steel by foreign producers in United States markets have drastically reduced the growth prospects of the American steel industry.[64] American steel producers are now investing a large portion of their funds in other industries rather than reinvesting in steel production.

Research and development spending in the United States has

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[63]Ibid., p. 12.

[64]Jerome M. Rosow, Productivity Prospects for Growth (New York: Van Nostrand Reinhold Co., 1981), p. 109

declined tremendously as a percent of the nation's GNP probably because the federal government has reduced its commitment in many respects. Private R & D spending has also been below what it could because such expenditures are very much affected by recessions. These expenditures are one of the very first items to be cut whenever an economy is disrupted by cyclical forces. During the economic recovery of 1975 to 1979, real R & D spending by private industries increased by 24 percent, and a strong economy would continue that trend.

The 1970 and 1974 recessions also hindered United States productivity growth because each of these recessions caused a drop in the growth rate. For instance, productivity in manufacturing declined by 5.2 percent in 1974, the largest drop since World War II.[65] During recession consumers reduce their demand which leaves workers plant, and equipment idle. High overhead costs are incurred, which also discourage investment that can increase productivity. The slower operation of business in return retards the introduction of new plant and equipment that embodies the latest technology. The best productivity growth in any economy is achieved when unemployment is falling and consumer demand is growing strong and steady. As such, business activities will expand more rapidly and the latest technology and mechinery can be brought into the workplace more quickly. In such climate, on-the-job training programs can be developed and schools and universities may expand programs to train

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[65] Ibid., pp. 109 - 110

workers in the newest skills for expanded job opportunities.

The recession and slow-grow policies of the United States stem from misguided attempts to cure inflation with unemployment. The Federal Reserve Board fought inflation in 1970 and 1974 by raising interest rates and this method has continued over the past few years. However, the inflation of the 1970s resulted primarily from rising prices of energy, food, housing and medical care. Therefore the best way to reduce inflation is to apply corrective policies to these sectors. Raising interest rates will actually not solve the problems in these sectors, but will rather make inflation worse by raising the cost of credit, which is an important cost in any investment decision.

There are prospects for productivity growth in the United States but these prospects depend fundamentally on the performance of the entire economy. If inflation is fought with recession and slow economic growth, the prospects for productivity growth are poor. If policies are formulated and put into effect to attack the specific causes of inflation and other economic setbacks, then prospects for productivity growth will be optimistic.

# CHAPTER VI

## Conclusions and Recommendations

Productivity is important in achieving the desires of every industry within any economy. National, business and personal goals are all fulfilled when greater productivity growth is accomplished. The concept of productivity recognizes the interrelationship between various factors in the work place. While the output, or results achieved, may be related to many different inputs, or resources, in the form of various productivity ratios, ie., output per labor hour, output per unit of materials, or output per unit of capital, each of these separate productivity ratios is influenced by a combination of many relevant factors. These influencing factors include the quality and availability of needed materials, the technique of operations and the rate of capacity utilization, the availability of capital equipment, the attitude and skill level of the work force, and the motivation and effectiveness of the management. The manner in which these factors interrelate has an important bearing on the achievement of productivity growth.

Individual groups have different perceptions about productivity in every nation including the United States. Government looks at it as the means of reducing deficit and-or accomplishing trade balance; businessmen consider it as the key to reducing costs and then in return maximize profits, show increases

in dividends, expand business activities, increase market share and build strong competitive position both on the domestic and international levels; labor looks at productivity as the means of creating more jobs, earning more salaries and improving standards of living. These perceptions may appear different in some way, but for the most part they all contain the characteristics of productivity growth and its essence to national development.

Productivity improvement requires national commitment which includes government, business and individuals. Productivity growth achievement is most defeated because companies give lip service to it without much resource commitment. Those companies in very desperate need, especially when financial resources are scarce, usually back their plans with shared authority and encouraging innovative actions.

Upper level management support is a very essential criterion to productivity improvement. Creative leadership also plays an important role in achieving productivity growth because good leadership creates conducive atmosphere in which improvement can be accomplished with high satisfaction and at minimum cost.

Productivity affects fical policy, political decisions, resource shortages and individual consumer spending. If wages and other employment benefits exceed gains realized from productivity, the result is continuous price increases. Companies are vulnerable to competitive pressures, both at home and

abroad if productivity growth takes a downward trend. Companies became strained by drops in productivity growth because more resources will in effect be utilized to produce less or just about the same output.

Productivity in the United States was at a remarkable level after the Industrial Revolution and as such the U.S. was envied by many nations including Great Britain where the Revolution begun. The high productivity growth rate of the United States continued even up to, and after World War II because it was the nation least affected by the war. However, this smooth trend of growth changed as the United States entered the 1960s. After several decades of continuous growth, this change seems to be controversial and unbelievable. Some people regard it as one that is peculiar to particular industries within the U.S. economy, while others look at it as one that is affecting every industry in the United States.

Several factors have contributed to the decline in U.S. productivity growth rate. Most industrialized nations were greatly affected by World War II unlike the United States. However, after the war these nations have been deeply concerned with rebuilding their economy in order to accelerate growth rates. Countries like Japan, Russia and other European nations have committed more of their resources to both national and international development far more than the United States since World War II. These nations have therefore grown faster than

America and have provided more competition in world markets as well. It seems that the United States spending is escalating faster than its production rate which in effect is continuously fostering inflation.

The lact of sufficient attention to investment in the United States is another factor that has hindered productivity growth. As the nation entered the 1960s, industries completely neglected the replacement and modernization of machinery and equipment. United States industries have found it very difficult to make reinvestments because of rigorous environmental regulations. Most of these regulations require certain production facilities and safety measures. To meet the standards of these regulations companies have been constrained by spending huge amount for safety programs instead of making more investment. Consequently productivity growth has declined as compared with other industrialized nations where relatively more resources have been devoted into capital investment.

Government spending in the United States has increased far beyond the tax base that supports it. This increased spending is in response to the expectations of citizens which have grown over the years as politicians continue to make promises in their struggle to get into power. Originally citizens' expectations were demands, but they have now became entitlements. Government continues to respond to these entitlements by formulating more generous services and benefits, which at most is

done by taking increasing amount of wealth out of the economy by way of taxes. As the result major emphasis is placed on consumption rather than production, or on redistribution of wealth rather than how to create or increase wealth.

Productivity growth has also been affected by the sexual composition of the United States work force since the late 1960s. More women have been employed than before and the vast majority of these women have actually worked far less than the average male workers. This together with the large numbers of teenagers who have entered the job market lately, certainly represent lower quality human capital.

The job-hopping problem in the United States is one of the major factors that is affecting productivity growth. There is no good teamwork, group loyalty, or common interest in raising any company's productivity because jobs are unstable and employees are never sure of one for a long period at least, if not permanent. Workers keep on moving from one job to another, not necessarily for better opportunities but at most because of lay offs. Workers, including managers, are not willing to make any sacrifice for the future prosperity of any company because they are aware of not being around for a long period, especially when productivity is achieved. Companies in like manner are not willing to invest in the future development of their employees because of the fear that these employees will accept employment elsewhere within a short period of time. Each group is there-

fore operating in its own interest without national commitment to productivity growth.

Employees are not encouraged by management to participate in decision making and as such they have become accustomed to taking orders rather than being initiative or self starting. All decisions come from the top with directive for enforcement. At times the objectives of some decisions may apparently appear unattainable or at least difficult to attain, but top management gets to realize this after wasting much resources. This is the result of one-way communication with practically little or no feedback in return. Sometimes employee suggestions are encouraged but the job insecurity situation cannot permit workers to reveal productive ideas.

United States executives are more interested in short-term profits than long term. Everyone is after quick payoffs or big quarterly jumps in dividends rather than creating solid market positions that will be rewarding over the long run. Shareholders expectations are so high that managers find it difficult to make any financial sacrifice toward gaining critical market share. They are not even free enough to do whatever they consider necessary to strengthen their company's competitive status over the long run. Consequently, the United States is finding it difficult to compete with other industrialized nations where managers are free from pressure to show steady increases in earning per share. Besides hardships in competing

internationally, the zeal for short-term profits is surpressing incentive for long-term investment. Everyone is after the "American Dream of Success" which seems almost unlikely to come through.

There is lack of direct cooperation between government and business in the United States unlike for instance, in Japan, where both government and business work closely together for economic advancement. Most government activities that are business related don't give guidance to businessmen on how to succeed, but rather emphasize on what not to do. There is no formal organization coordinating government and business efforts toward productivity improvement. Therefore efforts are being applied in opposite direction with practically little or no achievement in the end.

Management and labor relation is adversarial because each side has no trust in the other. Therefore there is no common consensus as to how productivity could be improved. Everyone is working to achieve his personal growth which is unhealth for the entire economy.

The labor system in the United States is greatly affecting productivity growth, but it appears as though both management and labor leaders have yet to realize the impact of their decisions on the nation's growth rate. Managers are mostly engaged with labor dispute than productive planning. Strike is the most powerful tool used by labor unions to reinforce their demands

which ultimately disrupt economic growth. Unfortunately however, this system is forever growing in every U.S. industry probably due to established legislations. Though the situation appears to be off hand, most managers find it very convenient working under such atmosphere.

From the facts gathered during this research, it is apparent that United States productivity growth rate took an actual downward trend since the 1960s which has continued up to the 1980s. Inflation has almost became permanent within every sector of the economy. Disinflation took place between 1981 and 1985, but that has not actually helped the inflation problem in any significant way because disinflation entails price increases at slower rate. Disinflation in any case is not the same as deflation, which the United States economy needs in order to raise standards of living.

However difficult U.S. productivity growth problem may appear to be at present, there are prospects for better economic advancement even now as well as in the future. Therefore in the United States quest for solutions to the present economic malaise, it is necessary to redirect a vast majority of available resources toward increased technological productivity. This will enable organizations to give customers more product value per dollar spent; utilize available resources more effectively; improve operational methods and then realize greater returns on capital investment. Increased technological

productivity will also enable companies to compete more effectively on both domestic and international levels. With better competitive positions in the marketplace, sales volume and profit margins can be increased simultaneously.

Government and business in the United States should necessarily develop means of coordinating efforts toward greater productivity achievement. There are significant untapped and underutilized resources in almost every industry and certainly enough all U.S. industries have the potential for improvement. However, this to a large extent requires proper and long-range planning with total government and business commitments.

The role of employees in productivity improvement is also important and as such it should be given special attention especially in the United States, where management and labor practically lack trust in one another. Labor everywhere sees productivity improvement as a threat to job security. For the United States, managers should develop effective methods of motivating workers toward company prosperity. Company goals and individual employee objectives should have a strong correlation; and both management and workers should be motivated in similar direction. Workers should be given greater autonomy such that decisions concerning their job performance can be self determined. Management should be willing to consider employee participation in productivity gains, whether these gains are short or long term. These modification in the management

philosophies will change workers opposition to productivity improvement into cooperation.

Long-range planning should be given more priority by business executives in efforts to increase United States productivity growth. This is important especially in world competition where winning greater market share determines companies survival. Besides, long-range planning improves operational productivity by helping to ensure the best possible use of resources; integrating all aspects of any particular program into an efficient unified effort; providing effective guidelines for evaluating performance, and better preparing for future risks and contingencies.

The concept of teamwork is an inevitable solution to productivity improvement everywhere and the United States is no exception. Teamwork achieves productivity growth in short periods and at minimum costs because team members work collectively with commitment to goals and objectives. The nature of a team's organization matters less as compared to the understanding among its members. For instance, the Japanese organize teams and groups with cultural characteristics to achieve national goals and objectives. The United States is equally capable of organizing its work force toward greater productivity achievement, but both management and labor must adapt a new sense of direction.

The rate of productivity growth in the United States has

been declining in recent years as this research has shown. Everyone is affected by this continuous drop in growth rate and the situation is more or less creating lots of pessimism about the future success of U.S. economy. The problem is obviously a national problem and therefore requires a national solution. Therefore if the United States should overcome its economic setback and regain its position in world competition, national commitment is the remedy. This includes individual, business, and government commitment to all productivity improvement programs. Prospects for United States economic growth are bright but total society commitment is a necessity.

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