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NATIONAL PRODUCTIVITY

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Productivity growth in the U.S. economy has dropped from over 3% per year for the 1948-1965 period to 0% today. The decline in productivity growth has been the primary factor contributing to inflation. I estimate that each 1% drop in productivity growth causes a 2% increase in inflation.

Several factors have contributed to the decline in productivity growth. The first is a drop in the ratio of investment to GNP. The second is the increase in energy cost brought about by OPEC price hikes. The third is a change in the demographic mix of the labor force and a decline in the work ethic in recent years. The fourth is the large increase in the cost of government regulations during the past decade. The fifth is the reduction in the ratio of research and development spending to GNP.

Investment

Much current investment is for government mandated programs which do not add to productive capacity. More investment is occurring in short term rather than long term assets. Properly adjusted for these factors, the investment ratio has declined from about 10% to about 8% of GNP over the past 15 years. We find a strong correlation between the investment ratio and the growth in productivity. The true tax rate on corporate earnings has increased from 45% to 60% due to insufficient depreciation allowances. While the reported tax rate has declined to 39%, the figure rises to 60% when the real profits are adjusted for inadequate depreciation allowances which are based on historical rather than replacement costs. This has been one of the major factors which has reduced the investment ratio.

Energy Costs

Two impacts from rising energy costs can be observed. First, substitution of relatively cheap labor and capital for energy reduces productivity. This reduces energy use but doesn't expand the capacity to produce. Substitution of labor increases the labor input and

reduces output per unit of labor input. Secondly, transportation and distribution costs force manufacturing locations to be nearer to customers, rather than at the most efficient point for production purposes. This leads to a decline in competition because only the nearest suppliers can be cost competitive. Thus, energy cost increases reduce the competitive pressure and hence lower efficiency for many manufacturing operations. I estimate that energy price increases have contributed to a 1% drop in productivity growth rate since 1973.

The U.S. energy policy has only one clear short run option and that seems to be conservation encouraged by higher market prices. Alternative sources of energy are 12 to 15 years away at best. Indeed, the seven years from 1973 to 1980 were wasted with respect to reducing our dependence on imported oil, even though there were warnings of increasing energy cost due to OPEC actions. We do not yet have a comprehensive energy policy.

If I were to make one forecast with virtual assurance of not being contradicted by developing facts, it is that OPEC prices will rise faster than the inflation rate over the next 5 to 10 years.

Right now we have a massive inventory build up of petroleum, but what has happened to oil prices? This glut of oil has existed for about six months, and oil prices, for all practical purposes, have hardly gone down at all. Saudi Arabia has said now that the situation is back to "normal;" they are going to cut production and raise oil prices another \$4.00 a barrel by the end of the year. We are going to continue to have higher energy prices.

As further proof of the fact that we do not have a comprehensive energy policy in this country, note that the U.S. is the only country that imports more oil now than in 1973. The rest of the world has gotten their act together; we have not. It should have been easier for us because of our higher per capital oil use than Europe and Japan. We have bigger cars, we have, generally speaking, fuel inefficient buildings, and so forth, because oil was cheap. It was much cheaper here than it was in Japan and yet we have squeezed the least fat out. You may argue about why we did that. I would say it is because we don't have a comprehensive energy policy and we don't have a market clearing price. But whatever it is, I cannot be optimistic about energy costs. I think the whole problem of the decline in productivity from the transportation and distribution network will continue.

Demographics/Work Ethic

Workers now coming into the labor force are poorly trained compared to people already in the labor force. They haven't had enough training or education to make them productive in particular types of employment, and need to gain work experience. Over the

next decade the number of teenagers and spouses returning to the labor force will drop sharply because many have already joined the labor force. By 1990 we will have a shortage in the labor force. And labor productivity should increase in the coming years, reversing trends over the last ten to twenty years.

Workers are less willing to work hard now than they previously were. The increased real tax rate due to inflation and income tax bracket creep has an effect on the monetary incentive. I recently did a study for the Senate Finance Committee looking at the cross-sectional data from income tax returns for the period 1962 through 1966. We took that period because 1964 was the year of the largest tax cut that we ever had in the country proportionate to GNP. We attempted to determine whether the lowering of tax rates had any positive effect on work effort, and tried to focus on this one fairly narrow issue.

Our conclusion was that not only did it have an effect, but it seemed to have an effect on all levels of income. A reduction of one percentage point of the tax rate did increase the amount of work the people offered by about $\frac{1}{4}\%$. That is not a huge number, but we have had an increase in the effective tax rate of almost ten percentage points over the past 15 years because of bracket creep. This amounts to a substantial reduction in the work effort which is put out in secondary jobs in terms of hours per year and absenteeism, and even the ability and the desire of people to look for work who are not in the labor force.

If a person is on unemployment, he can look quite hard for a job or he can become lackadaisical. I think that the high personal income tax rates are in part responsible for this latter syndrome and I think that if we continue to follow with our current tax policies, we are going to be in a lot more trouble with respect to labor productivity over the next decade.

Let us assume that we have an inflation rate over the decade of 10% — a rather conservative estimate, I'm afraid. Simple compound growth rates imply that the price level will triple between now and 1990 at 10% annual inflation. To keep the arithmetic simple, assume that wage rates keep up with inflation and that we have no changes in the tax rate. That means that the average family income, which this year will be about \$24,000, will be \$72,000 in ten years. It sounds rich, but of course it is not because prices will have tripled as well. What is the tax bracket for \$72,000 worth of income? Depending on how many deductions you have, tax brackets up around there are in excess of 50%. So the average tax payer will move from the 25% tax bracket to the 50% tax bracket, if we have no tax cuts over the next decade. Based upon personal observation and the empirical work that I have done, I am convinced that doubling taxes like that over the next ten years will have a serious detrimental affect on the work effort.

A number of Congressmen have suggested indexation of the tax rates so that you would not be pushed into a higher tax bracket by inflation. For example, suppose you have an income of \$30,000 a year and next year you get a 10% raise, but inflation goes up 10%. Your nominal income is \$33,000 next year but you are not better off in real terms. Under today's tax table you get pushed into a higher tax bracket. Under indexation the brackets would widen by the rate of inflation so that a \$30,000 income this year and a \$33,000 income next year would both correspond to the same marginal bracket. While that is a very good plan, I doubt that it will be implemented since not enough Congressmen are in favor of it. But something clearly has to be done to bring down personal income tax rates in order to stave off the decaying in labor productivity which is sure to come if we push the average tax bracket up to 50%.

We have finally convinced people that business tax cuts are good. That is terrific and is quite a change from five years ago. But we need a balanced approach to tax cuts; both personal and business tax cuts. Individuals save as well as do corporations. The tendency is to look only at the savings of corporations as a source of investment, which is very shortsighted. In an ordinary year personal savings are at least as great as corporate savings. I say an ordinary year because last year the personal savings rate hit a 30-year low partly because of the fact that it doesn't pay to save any more. But in an ordinary year the two are approximately equal. We can generate funds for investment from personal saving as well, and by cutting tax rates we can improve the productivity and increase the work effort. Thus a balanced tax policy really has to have all three legs of the stool in place: business tax cuts, personal tax cuts, and spending cuts. And that leads me to the fourth item on my list.

Government Regulation

The costs of government regulation should include both the costs that appear on the books of the government and the costs that are borne by the private sector as the direct result of government regulation, but which are not specifically part of government spending. Politicians of all stripes are almost united in their belief that we should not have government spending grow faster than GNP. Everybody believes that this ought to be the upper limit, yet it just never seems to happen that way. If you look at the ratio of government spending and GNP over the last eight years, which includes Republican as well as Democratic administrations, this ratio always seems to be creeping up. Of course the cause is always something unusual. One year we had a recession which nobody had foreseen, so we needed to have higher transfer payments such as higher welfare benefits, unemployment compensation insurance, and so forth. Another year we had massive crop failures, also unforeseen, so we had to help all the people who were hurt that way. Another year

we had massive oil increases, so we have to stockpile oil which, of course, was unforeseen.

The fact of the matter is that there are always surprises coming up that "temporarily" tilt the budget out of balance and tilt government spending growth until it is higher than GNP growth. If we are going to continue to delude ourselves, we are not going to be able to divert the necessary resources from the public sector over to the private sector. We have to be very careful when we talk about tax cuts, for tax cuts by themselves can not solve all our problems. If they could, all we would do is abolish all taxes tomorrow and we would have full employment and no inflation. Life is obviously not that simple. Certain tax cuts that stimulate savings and investments and stimulate productivity are obviously necessary. Yet it is clear that we have to have government spending cuts along with them.

Several plans have been proposed. The most modest proposal is simply to limit government spending growth to the rate of increase in GNP. Another possibility which I favor is to have government spending growth limited to the rate of increase in inflation. In other words, continue to fund existing programs but don't add any new ones for five years. That is received well in theory by Congressmen, but not when it comes to the voting on specific items. However, we simply must do something to limit government spending if we are to reap the gains in productivity which result from lower tax rates and higher productivity in the private sector.

The other issue in this section is the costs of government regulation borne by the private sector. Most people who have estimated this cost find that government regulation costs the private sector about \$100 billion a year and adds between 1% and 2% a year to the rate of inflation. The major problem with this figure is not the regulations *per se*, but simply that ten years ago the American public was sold a bill of goods and were told they could have cleaner air and water, safer work standards and all these wonderful things and it won't cost you anything. While that sounds absolutely ridiculous, that argument was able to sail through with very few people pointing out that this wasn't very good economics. One hundred billion dollars a year is still a fair amount of money, even in these days.

We have to come to grips with the issue. The government should concentrate on the ends rather than the means; tell companies to clean up the atmosphere, but not insist that they do it the most inefficient, expensive way. By letting industry choose how to meet the mandated goals, I estimate that we could reduce the cost of government regulation from about \$100 billion to about \$50 billion a year. The \$50 billion savings would increase productivity about ½% and reduce the rate of inflation by about 1%. So I think these are very substantial goals; we are not talking about nickels and dimes. I

think that these changes could be done within the framework of the existing laws. While nobody expects to roll back the clock on pollution laws and on safety laws and on other laws of this sort, we can make a great deal of progress within this overall framework.

Research and Development Expenditure

The fifth and last item on my list is the proportion of resources spent on research and development. During the 1960's the government funded a great deal of R&D spending, much of it for the space program. At that time people thought that the space program was sort of a boondoggle, but a tremendous number of advances came out of the space program. Miniaturization, advancement in medical science, and development of new communications equipment are all direct descendants of R&D spending which was funded by the federal government. Since the 1960's this percentage has lapsed. We used to spend, roughly speaking, about 3% of our GNP on R&D; now the figure is 2%. Those are the stated figures, but there is always some R&D undertaken by private corporations which is really just product development and new methods of manufacturing the old product. If you take those out, I think you would find that pure R&D in terms of advancing productivity and technology probably declined from about 2% of GNP in the 1960's to 1% now, so it is down about half. Part of this was due to the idea that government shouldn't fund R&D, another casualty of the Viet Nam war.

The second factor, which is also very important, is the complete collapse of R&D and venture capital in the private sector after 1968, and this one can be pinpointed. It was a direct result of raising the maximum tax rate on capital gains from 25% to a maximum of 49.1%. The venture capital industry went from a \$3 billion industry to about \$50 million a year. It almost ceased to exist! Since the maximum rate has gone down to 28% and next year it is likely to go down to 20%, we are already witnessing the renaissance of the venture capital industry. The amount of venture capital in 1979 was triple that in 1978 and in 1980 will be even higher — a true resurgence of venture capital which goes into R&D. We cannot really expect that the R&D expenditures will have much immediate effect on productivity, since the lag is five to ten years. Still, it is very important that we undertake this venture.

Future Prospects

I have covered my five points, and will recapitulate now with a brief look at progress that I see being made in the 1980's. Can we realistically expect an upturn in productivity or are we stuck with a 0% productivity gain? Even worse, are we heading for declining productivity and a declining standard of living similar to the experience in Great Britain? Actually I am not that pessimistic.

Some progress will be made in improving the investment ratio. The decline in the investment ratio has sliced about 1% off productivity growth. I think we could probably recapture most of that 1%, depending on tax policies. Over the next few years the realignment of depreciation allowances will be a huge improvement in that regard. Further reductions in the capital gains taxes will also stimulate investment. I think we will have corporate tax rate cuts of 40% as we go down the road toward 1985.

As far as the energy factor which has also decreased productivity by 1%, I see very little hope there.

As far as the demographics go, the decline in the number of teenagers will be a plus. There may be improvement in the work ethic stemming from lower tax rates. I do not know how important that factor will be, but my basic optimistic nature shows through here and I think we might have some improvement there, maybe as much as $\frac{1}{2}\%$.

As far as the government regulation goes, I don't think we are going to see many new regulations. I think that we will not get rid of old ones, but I think the rash of agencies that were created during the 70's to improve the quality of life have left a sour taste in many peoples' mouths and I think that that activity will level off. So I would say that on balance we would have a slight plus in that area.

Finally, I do see R&D spending coming back. I think there will be some spillover from higher defense spending in terms of R&D, and I am sure there will be more R&D in the private sector from venture capital and from equity financing.

So putting all these factors together, I see the rate of growth and productivity over the decade rising from the 0% level up to a level of about $1\frac{1}{2}\%$ by the time we hit mid decade and continuing at that rate through 1990. We are going about halfway back to where we were in the decade of the 60's. Of course, the range of latitude is much wider than that.

Just to give you some example of what we could accomplish at both ends of the spectrum, I took our new supply-side model and performed some rather daring experiments. These are easy to perform on the computer. They are much harder for politicians to perform, but just let me briefly describe them to you. If we are really talking about high growth and high productivity and are serious about it, we don't cut tax rates 2% here and 3% there. So I cut personal and corporate income tax rates in half and I ran the model out to 1990. You won't be too surprised to find out that I had a massive government budget deficit, so I cut transfer payments by five hundred billion dollars a year. Admittedly there are some political problems with that, but I did work out some ways it could be done. One was increasing the retirement age of social security

from 65 to 70, which would save \$200 billion a year by 1990. If we did cut personal and corporate tax rates in half and reduced transfer payments from \$700 billion to \$200 billion by 1990, we could raise productivity growth to 3% again and reduce inflation to 4%, a massive turnaround.

What happens if we have business as usual, politics as usual and economics as usual? To make things flow a little better, I threw in another oil crisis in 1985, and some crop shortages. In other words, I sort of duplicated what we went through in 1970. With that situation we have a declining rate of growth and a decrease in productivity of about 1% a year.

My best forecast would be for productivity growth rate of about 1% annually over the next ten years, and a decline from double-digit inflation for the latter half of the decade.