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ABSTRACT

The way resources are deployed to educate Americans will affect, as never before, productivity, the economy, and the quality of life. To maintain the present standard of living, Americans will be dependent on a continuous infusion of scientific breakthroughs and productivity-enhancing technology. Periodic upgrading of skills will be a necessity for more and more workers. Of the three types of post-high school education--liberal, professional, and vocational--the most pressing need exists for more vocational education leading directly to employment opportunities. Unemployment figures show that many Americans need and wish to be taught how to earn their living in a more technological and changing world. Retraining obsolete workers is a subsection in vocational education that requires more attention. Economic necessity and individual motivation will encourage more women to return to school to prepare for more challenging, higher salaried ppositions. Although jobs in the service sector are expanding, long-term economic growth and vitality will only be possible if Americans work to maintain their advantage over the global competition in expertise. American workers will have to be better educated and trained. Increased investments in vocational education as well as professional education can help to accomplish this, especially if American industry plays a more actively supportive role in the educational system. (Questions and answers are appended.) (YLB)

Occasional Paper No. 88

THE ECONOMY, PRODUCTIVITY, AND TRAINING—A CEO'S VIEW

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The Ohio State University
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FOREWORD

I think if we were to ask what has dominated the American scene with respect to topics of interest today, we would have to conclude that the economy, productivity, and employment have become the number one issues. Given our national preoccupation with the economy, it seems only rational that when we begin to think about the role of vocational education and training in improving and revitalizing the American economy, we look to the chief executive officer of one of the Fortune 500 corporations that is involved in vocational and technical training.

Our speaker today is Donald Frey, chief executive officer of the Bell and Howell Corporation. Don was born in Missouri, raised in the midwest, and received his professional training as an engineer and metalurgist at the University of Michigan. After receiving his doctorate from the University of Michigan, he subsequently served on the faculty of that institution.

After leaving the university, Dr. Frey was with the Ford Motor Company in engineering and engineering design and ultimately attained the position of Vice-President and General Manager of the Ford Division. He then moved to become President and Chief Operating Officer with the General Cable Corporation. Since 1971, he has been the Chairman of the Board and Chief Executive Officer for the Bell and Howell Corporation located in Chicago. Bell and Howell operates the Ohio Institute of Technology and the Charles E. Merrill Publishing Company here in Columbus. Bell and Howell also operates nine other Institutes of Technology in the United States and Canada.

It is with pleasure that the National Center for Research in Vocational Education presents Dr. Frey's speech entitled "The Economy, Productivity, and Training: A Chief Executive Officer's View."

Robert E. Taylor
Executive Director
National Center for Research
in Vocational Education

THE ECONOMY, PRODUCTIVITY, AND TRAINING— A CEO'S VIEW

Some 800 years ago Maimonides, the sage of Cordoba, taught that there are different levels of charity. The man of goodwill sees his fellow man in need and simply gives him alms. This is one form of charity; according to Maimonides' teaching, it is also the lowest. The highest form of charity, he said, is to take that indigent man and teach him how to fish. When he knows how to fish, he can then feed himself and his family and, beyond that, continue to earn his livelihood unaided.

Few, I expect, would quarrel with this wisdom. But it is a peculiar irony of our modern civilization that at the same time that we have discovered and unleashed the mechanisms for creating an unprecedented wealth of goods and services, we have made it more difficult for some individuals to acquire the capability of earning a livelihood.

The simple skills and tools the fisherman used in ancient times are no longer adequate; we rely today on more sophisticated equipment and scientific techniques to bring in the catch. This means that to enter the labor market, the job seeker has to be better trained and more knowledgeable than ever before. And, given the reality of today's international economy, I think it is apparent to all of us that if we are to maintain our present standard of living (let alone raise it to a higher level), we are going to be dependent on the continuous infusion of scientific breakthroughs and productivity-enhancing technology. This means that just to hold on to their jobs, periodic upgrading of skills is going to be a necessity for more and more workers.

We must take a new and serious look today at how we in this country are teaching people "to fish." More exactly, we need to assess very carefully what we are educating people for, and how we are going about it. The way we deploy our resources to educate Americans will affect as never before our productivity, our economy, and the quality of life for Americans.

There are, in my view, three types of post-high school education: liberal, professional, and vocational. Personal choice based on individual need determines the course to be pursued. Let me hasten to say that while my corporate activities represent the last type, vocational education, its more academically narrow and strictly career orientation will not serve all needs. It is one part of the triumverate of education, and all parts are essential.

But we have a problem today. Labor statistics make it clear: the system is unbalanced. There is a pressing need for more vocational education—education that will lead directly to employment opportunities. I think curriculum planners need to reevaluate the role of the liberal arts in our educational system. The study of literature and history has value, no doubt; but a well-rounded educational program today must not fail to include courses in such job-related skills as computer science, laboratory techniques, electronics, and so on. I suspect that many of our unemployed or underemployed college graduates are becoming painfully aware of this. A U.S. Bureau of Labor Statistics report predicts that as a result of the oversupply of college graduates with liberal arts concentrations, one of every five holders of such degrees may be forced to take a job that does not require a degree.

I have no doubt that as a society we must hold high the objective of "education for the whole person," but if the "whole person" cannot get a job, it is pretty specious to talk about enriching his or her life.

In this regard, however, I must also affirm from the start that the distinction often drawn between "training" and "education" is becoming increasingly blurred. We used to think of "training" in terms of preparation to perform relatively simple mechanical tasks such as assembly line work, while "education" meant developing a broader intellectual aptitude for more creative problem solving. But as we apply the latest technology to the production process in all phases of industry, workers will find they must have a solid grounding in a range of fundamental skills: not only the "three-R's," but also such skills as computer literacy. Equally important, they will have to bring to the job the temperament to adapt to change, to accept periodic retraining and to acquire the facility to work with a new generation of technology. Thus when I speak of vocational education today, I am talking about career preparation in a very broad sense.

There are a lot of people in the United States today who need and wish to be taught, quite specifically, how to earn their livelihood in a more technological and, in any event, changing world. I think we are all acquainted with recent unemployment figures. They present a bleak picture indeed:

- We now have an unemployment rate approaching 10 percent.
- In the four recessions in the past twelve years, peak unemployment has moved steadily higher each time.
- Youth unemployment is now around 22 percent, a post-Depression record.
- Nearly 50 percent of black teenagers are actively looking for jobs and cannot find them.
- There is a regional imbalance to our unemployment pattern, with the older industrial belt in the northeast and north central states most severely affected. But even in the southern tier, especially in those areas where manufacturing enterprises have concentrated in recent decades, there is no immunity to unemployment problems.

These are sobering statistics. The trends underlying them are even more alarming.

First, we can no longer assume that the unemployed worker's job will automatically be restored with economic recovery. The phenomenon of the "dislocated worker" who faces a mid-life career shift as a result of a plant closing or technological change has become increasingly common. It is not just a narrow sector of the working population that will have to deal with unemployment: growing numbers of workers already face *career* unemployment. This means that their whole career has become obsolete—not as a result of economic cycles, but as a consequence of rapid and incessant change in the structure and technological base of what is now a global economy.

Total employment in the American steel industry, for example, has been reduced by 40 percent since the 1950s. Massive layoff rates in the automobile industry and in those manufacturing centers whose fortunes rise and fall with Detroit's will only be slightly alleviated by an upturn in the economy. The pressure to modernize and improve productivity makes the continued retrenchment of employment in these industries in the next ten to twenty years virtually certain. We cannot limit our focus merely to providing unemployed teenagers and young adults with the skills to get jobs. We also have to face the challenge of reeducating the forty-year-old worker whose job has permanently disappeared.

Retraining the "obsolete" worker is a subsector in vocational education that is not being given sufficient attention. From the passage of the Manpower Development and Training Act of 1962 to the beginning of the Reagan administration, more than $80 billion has been spent in government-supported training programs for jobless and low income individuals. Less than 1 percent of this total, though, has been applied to the retraining of workers who have lost their jobs due to technological change. Until a few years ago, such limited expenditures on retraining could be justified to the extent that unemployed workers could be expected to find their way to new jobs. Unfortunately, this rationale no longer applies to unemployed workers in today's basic industries.

The need for some fresh approaches is obvious, but I would caution that we do not yet know enough about the problem of unemployment to respond to it effectively. What are the unemployed steelworkers and auto workers doing today? What would they be capable of doing if the right kinds of training programs were available? We had better start getting some answers. Fast. And until we do get some answers, I think we should be sensible enough to avoid massive federal or state outlays to deal with the problem. And we should not be so foolish as to pretend that training in such areas as welding or machining will provide people with marketable skills in the coming era of robots. As a start, I think industry, academia, and government must work closely to develop a few carefully conceived pilot programs.

In this context, the suggestion that unemployed residents in Ohio, Michigan, Illinois, and Indiana—our industrial heartland—simply move to the "Oil Patch" or the Southwest to find work is worth mentioning. This strikes me as a dismal nonsolution. Family and community ties make relocation painful. It is also problematic, to say the least, that skills outdated in one section of the country will continue to be viable elsewhere. The problem of retraining will not go away.

Social and demographic alterations will complicate the pattern of structural unemployment. In the 1970s, changing social values and economic pressure to supplement family income led unprecedented numbers of women to enter the job market; this was also the period when the children of the "baby boom" years began to go to work. As a result, in the past decade the size of the labor force has increased by over 25 percent. But for many of these women, advancing beyond service jobs at the low end of the pay scale will be impossible without participation in formal training programs.

The household with two working parents is here to stay, and both economic necessity and individual motivation will encourage increasing numbers of women to return to school to improve their opportunity to secure more challenging, higher salaried positions.

Competition for jobs today is most intense among unskilled and inexperienced youth. Fewer teenagers and young adults will be entering the job market in the 1980s, but the glut of young people seeking employment today will be a glut of middle-aged workers in ten to twenty years. Unless we begin now to prepare these young people for the jobs of the future, we are likely to suffer for years to come the burden of a large population of chronically unemployed and underemployed—and all the economic and social problems attendant to that.

Where are the jobs of the future? Some say they are in the service industries. Another phenomenon accompanying the pattern of structural unemployment in the past decade has been the rapid expansion of the service sector of our economy while our basic manufacturing industries have languished in an anemic condition.

Almost three quarters of all American workers are now employed in what are somewhat clumsily described as service jobs. These services now constitute two-thirds of our gross

national product, and there is speculation that the manufacturing slice of the economic pie will, in the not too distant future, be no larger than that of agriculture.

What is the significance of this for the economy and job training? To answer this, I think we need to have some sense of what service jobs mean. On the one hand, the term is used to embrace lawyers, bankers, brokers, teachers, and government employees. It also includes the whole gamut of what can be called the information industry—data processing, the news media, computer software development and so on. It also encompasses hotel and restaurant workers, janitors, and chauffeurs.

Without doubt, these workers perform necessary functions for the operation of our economy. But do they provide, in and of themselves, a sufficient base for long-term economic growth and vitality? I think not. We will not build prosperity by taking in each other's laundry.

Every customer is aware of just how many manufactured items, such as clothing, stereos, and automobiles, are produced abroad and sold in this country at very competitive prices. And I think most of us are aware of the outflow of American dollars to pay for these items. I doubt that we will be able to right the trade imbalance with lawyers' fees and brokers' commissions. I am convinced we would all be better off if the unemployed steelworker were producing goods for the international marketplace instead of pushing hamburgers in a fast-food franchise.

If we are to maintain our competitive vigor, we can be sure that in the next ten to twenty years, it will not be business as usual for American industry. We recognize today that the United States is competing in a global economy, and that the areas where the United States has a competitive advantage over other nations have steadily narrowed in the past few decades. The manufacturing technology upon which American economic preeminence was built has now spread to other nations—and the jobs have followed.

Unless we want to reduce our wage scales to the standards of the Western Pacific countries, we are going to have to work harder than the competition to maintain our advantage in expertise. Knowledge is going to be this country's most precious resource. American industry will have to be wiser and more innovative—relying on more and more advanced technology to compete effectively. In turn, American workers will have to be smarter, more sophisticated, better educated, and better trained.

The problem of America's current economic fatigue has been analyzed from a number of perspectives. Therapy programs have called for such remedies as greater expenditures for R&D, more innovative management, increased capital investment, and closer labor-management cooperation. But it seems to me that among the plethora of prescriptions there has been insufficient attention to the need for elevating the level of expertise of the American work force. We seem to have no lack of new discoveries by either academic or industrial research laboratories. We continue to accumulate the "lion's share" of Nobel prizes. But while we have cultivated a corps of brilliant scientists who are second to none, the Japanese (who in their entire history have nurtured only four Nobel laureates) are surpassing us in their ability to achieve commercial success with our laboratory breakthroughs. Clearly, the problem we face is at the production level.

A few statistics can help us appreciate the problem. On a per capita basis, Japan has one-twentieth the lawyers, one-seventh the accountants, but five times as many engineers as the United States. The U.S. Bureau of Labor Statistics predicts that within the next ten years, 80 percent of the available jobs will require some kind of postsecondary education, and of these

jobs, 80 percent will necessitate something other than or in addition to a traditional liberal arts education. The American Electronics Association predicts an annual shortfall of twenty-five thousand electrical engineers through 1985.

Without the technicians and engineers to translate state-of-the-art technology into products that are marketable at competitive prices, growth opportunities in high-technology industries will be lost, and efforts to enhance productivity throughout industry will be threatened.

What is to be done? I believe it is clear that significantly increased investments in vocational education as well as professional education must be placed at the top of our national agenda.

My use of the term "investment" is deliberate. Investment means the commitment of resources to acquire future income and other satisfactions. History is unambiguous in demonstrating that the development of human skills is even more critical to economic progress than is the presence of natural resources, physical capital, or raw labor.

One of our most talented scientists-entrepreneurs in the "Silicon Valley" recently posed a question: If you removed all of the people from those glitteringly successful enterprises in the valley, what would be left? The answer: just a lot of empty shells. It is the highly skilled technicians, engineers, and scientists working inside those buildings who have created the prosperity of those high-technology businesses. No program for our economic revitalization can ignore this fact.

But while the direction we must take may be obvious enough, there are many visible impediments to our progress along the way. Just at the time when we must bring our educational resources into fuller play in national economic rejuvenation, we find many of our school systems beset with near crippling budget woes. Government aid and enrollment, the chief sources of support in recent decades, have stabilized. As a consequence, professors' salaries are falling behind what those with equivalent training can command in industry—providing little incentive for individuals to pursue teaching careers. Laboratory facilities and equipment in many universities are twenty to thirty years old, and escalating tuition costs place the college opportunity beyond the reach of those who most need it to escape the cycle of low-paying jobs.

It is evident to me that the time has come for American industry to play a more actively supportive role in the educational system. I think we can proceed on several tracks, by—

- increasing direct corporate grants to colleges and schools;
- providing equipment for school laboratories and other facilities;
- providing increased support for corporate employees to return periodically to campuses to serve in teaching functions;
- increasing scholarship funding;
- expanding in-house training and retraining programs; and
- in cases such as those of Bell & Howell, continuing to expand vocational school operations.

I am not, of course, suggesting that industry has vast untapped treasure ready to invest. Few businesses today have not felt the impact of the recession and realizing profits and improving

returns for shareholders must be an obligation for any corporation. But unless we build a consensus in support of the proposition that the future strength of the American economy and the vitality of our educational system are inextricably bound, both will experience a continuing spiral of deterioration.

Advances in knowledge are and will continue to be a critical source of wealth and income in the United States. Professor Theodore W. Schultz of the University of Chicago, a recent Nobel laureate, has commented that: "it does not detract from the economic fundamentals set forth by Adam Smith to point out that the wealth of nations would come to be predominantly the acquired abilities of people—their education, experience, skills and health." We as a nation must make the necessary investment to improve these abilities.

We can continue, for the time being at least, to pay unemployment and welfare benefits. But these obviously are temporary measures. We should not forget the basic principle of philanthropy. Let us teach people how to fish. Industry and academia must join together in a partnership in support of this principle. I look forward to working with other businesspersons and educators in building that partnership.

QUESTIONS AND ANSWERS

DONALD FREY

QUESTION: In your speech, you addressed a number of issues related to technological change and changing demographics and how they affect the work place. One of the things you did not address was changes in the jobs themselves through job redesign and job restructuring; things such as quality circles, job sharing, and so on. What kinds of implications do these have for vocational training programs?

What I think you are referring to, on the one hand, are such things as job sharing, split shifts, part-time work for the local housewife who still has young children at home, and so on. On the other hand, you are also referring to worker participation in decision making through use of such techniques as quality circles. My first reaction is that these things do not affect vocational training programs very much. These changes come upon us as a matter of style and flexibility for modern living. They do not affect the skills and knowledge needed to enable a worker to compete effectively in technologically changing industries.

To the extent that today's jobs are more intellectually demanding, however, I do think that methods for on-the-job training will need to change. Take for example a narrowly defined job—an assembly line worker in Detroit would be a classic case—that requires little more than on-the-job training. The job entails very simple duties: get the job done and do not ask any questions. Today, if you work with computers (which, in a sense, are the equivalent of the machine tools of decades ago) you're facing a much more intellectually demanding job. If you stop to think of the difference in the intellectual and training levels for a programmer and an assembly line worker, then I think changes in job design and structure have important implications for training.

QUESTION: This country seems to be becoming more and more a supplier of technical training for the world. Would you comment on what you see as the trends in this area? Should we sell that technical training, should we give it away, or should we embargo it when it is being provided to our "economic enemies"?

First, I agree with your premise; we are certainly becoming a supplier of technical training for the world. As a matter of fact, I think the percentage of foreign-born students who are unlikely to return to their native countries is rising rapidly. I also think that what little growth there is in many academic institutions is furnished by foreign-born students who come here for training. Embargoing or limiting the availability of our technology and training is, I think, nonsense. It is like trying to limit the air you breathe.

I think nothing makes less sense than the president's recommendations to embargo the Soviet oil pipeline and the technology related to it. In plain and simple language, it will not work. All we would do is create some new competition. So my answer to you is that I would not try any of those tactics. As a matter of fact, we often forget one thing. I do not have an accurate number, but I will guess that of the new technologies applied in the United States during 1982, probably somewhere between a third and one-half of them came from other countries. In the area of steel

making, for example, the Japanese adapted the basic discoveries of European countries. They turned around and advanced those technologies, and now both the United States and Europe are reimporting, to some degree, these newer techniques. Thus, to repeat—limiting the availability of our technologies would be a self-defeating process; it would not work.

QUESTION: What is the role of postsecondary vocational education in training for high technology?

Vital. Nearly all entry-level jobs in the high-technology industries require some amount of vocational career training. If the entry-level job fifty years ago was in a foundry shoveling sand for the mold maker, all one had to do was be able to handle a shovel and understand English. Generally speaking, one learned how to be a mold maker on the job. The individual may have gone to an apprentice school, but this is unlikely. In today's high-technology industries, job entry requires some basic electronics in the electronics industry, or some ability in programming in the computer industry. In the biological sciences industries, the modern equivalent to the shoveler in the foundry is the laboratory technician. So one has no choice but to get some career training to get started in high-technology jobs—even at the entry level.

QUESTION: There has been a lot of discussion comparing the United States and Japan, as you mentioned. Could it be that the most important difference between the Japanese and the Americans is that we teach cooperation and competition and the Japanese strictly teach competition to the fullest? I recently read that the suicide rate of high school Japanese youth is very high and that, in many cases, it is brought about because of fear over the inability to compete at a desired level. Would you comment on this please?

The reason Japan has a better education system and a higher percentage of skilled workers with a higher level of education is because the Japanese are competitive and disciplined. They are doing the right thing if the goal is to achieve the simplest possible outcome. What you read about the suicide rates of Japanese twelve-year-olds who are at the fork in the road between the college-bound track and the common-labor track is utter nonsense. The press has a great ability to take the exception and make it sound like the rule. The plain fact is that what American education needs, especially in the key steps from kindergarten through eighth grade, is less permissiveness and more discipline.

I am not suggesting that we have to adopt the Japanese educational system, which is as peculiarly adapted to their culture as ours is to our culture. But we could do more to emulate them in terms of the discipline and academic demands that we place on our young people, particularly in the primary and secondary schools. That is my personal opinion.

QUESTION: Earlier you discussed worker education and training. In what arena would you say this education and training is concentrated?

I suspect that most of this training is happening within companies, or is sponsored by companies. This is from personal experience or observation in either my own company or in other companies. I am continually amazed at how much of this training is going on. Let us take my own company, Bell & Howell, as an example. We teach classes almost every night in Spanish to our foremen and supervisory people in our Chicago-area factories because approximately 10 to 15 percent of our entry-level work force is Hispanic. Many of them come to us with only working Spanish and little working English. In addition, there is a constant series of courses to upgrade skills in our workers' job-related activities. At the corporate data center, people are constantly being retrained in the latest operating system, in the latest language that would apply

to the newest computer brought in. They are constantly learning new programming techniques that require additional training at night and sometimes during the day. We are training our factory personnel in the operation of new computer numerically controlled (CNC) equipment. This requires a certain degree of computer literacy on one hand, and certainly new "know-how" on how to operate and schedule a factory that is highly driven by a computer-related infrastructure. We have started training in a west coast factory on a recently purchased CAD/CAM system that will completely revolutionize the engineering design department. Engineers will design on a television screen and not on a piece of paper. We are constantly reeducating our people with regard to accounting changes. From entry-level jobs in accounting and financial control, the people can upgrade themselves to higher levels. They go from junior to senior accountant by going to school. I should comment again that all of these training experiences are a mixture of in-house and out-of-house. As an educated guess, of perhaps ten thousand Bell & Howell employees within the continental United States, 10 percent of them, or one thousand, are in training somewhere for something every day. That is the way it is going. We are becoming a training institution as well as a manufacturer.

QUESTION: In your speech you cited America's superiority in basic invention and discovery, but what appears to be happening is that the Japanese have the ability to take basic inventions, translate these into useful products, and market them competitively. As you look at our system of engineering colleges, experiment stations, industry-sponsored research, and vocational training, is there a missing link? What is it we need to do to become more effective in product innovation, which appears to be the Japanese strength?

I will try to give you an ecumenical answer. The missing link is all of us. Let me talk more specifically about labor, business, and government. We all have a piece of the action. We have all gone off the rails together. I will deal first with what is perhaps the least important link. There is no way that any American car company can survive when paying its assembly line workers $24 an hour including fringes. The Japanese pay about $15 including fringes. We are kidding ourselves if we think we can avoid this issue. I am not going to deal with how to solve the problem; I am merely saying that these wage schedules are too high. To further my point, I should also mention that the $24 an hour figure is 50 percent higher than the average U.S. hourly rate. This results from both labor's monopolistic demands and the concessions made by management in the former "golden days." Just put a Toyota Corolla next to a General Motors Cavalier. You will see that the two cars are nearly identical, but the sticker price on the Toyota is $500 less than that of the Chevrolet. Thus, the makers of the Chevrolet Cavalier make no money, because the Corolla has a difference in manufacturing costs of about $1,500 a unit. That is perhaps 30 percent of the total manufacturing cost of the product. The U.S. cannot win. This is the least important issue first.

Secondly, our government's policies have been based upon consumer consumption—not new capital investment. Forget all the other nonsense about budget deficits. We encourage consumption and discourage investment. This concept runs all the way from the tax codes to the government's budgetary policies. This leads us to inflation and the loss of jobs.

Furthermore, there are the business concerns and Wall Street. I guess the epitome of what is going wrong is that the greatest dime novel for Hollywood in the last ten days has been the Bendix, United Technologies, Martin Marietta and Allied corporate take-over entanglement. It is the most disgraceful display of totally misapplied business activity that I can think of. It doesn't build a factory; it doesn't create one new product or one new job; it doesn't do anything except suck equity capital out of the stock market and replace it with bank debt. And incidentally, it puts more banks in danger with their equity. I think it is disgraceful in the highest sense. What is

behind this situation is that we have all become "quick buck" artists. I do not know whether Wall Street led the business community to this philosophy or if the business community led Wall Street. My point is that if we feel we cannot make an investment with a twenty-four month return and get our money back, we do not make the investment. The Japanese, on the other hand, are long-term investors. They will take their losses for years on end, but they will eventually get the product right, build a market share, and then make money. We forget the years they have invested. Do you remember the first Japanese cars that were imported in this country? They were jokes—but the Japanese kept at it. Two decades later, they have 25 percent of the U.S. market. There are, of course, cultural differences between this country's long-term approach and what I call our short-term, "quick buck" approach. The Japanese run a mercantile society in the most traditional economic sense. They are the modern practitioners of mercantilism. In terms of both their culture and their government regulations, they keep competitors out while they build the domestic industry. Then they become an exporter. Beautifully practiced. I admire them for that. In addition, the Japanese do not have the defense burden that we have. Whatever you may think of the present U.S. defense budget, the Japanese benefit from the role we have to play.

Finally, there is a very symbiotic relationship between the government and the exporting businesses in Japan. That relationship translates into such things as export tax credits and to the Japanese equivalent of an 8 percent prime rate. Our prime rate just dropped from 20 percent to 13 percent. Furthermore, the Japanese federal tax system is really a VAT-based system (value added tax), while ours is an income-based system. Thus the very structure of the Japanese tax system allows them to use export tax credits in determining their yearly taxes. In America's tax system corporate income cannot be broken up so that you can decide how much is due to exports. Thus American businesses do not have access to the same type of tax credits that a Japanese firm has.

In summary, on a comparative basis, we are very short-term oriented in our private sector. I can fault my business friends, as I do, but you have to react to the high cost of capital—and the high cost of capital translates into shorter and shorter-term investment. You have got to get your capital cost back more quickly to be able to afford it. You cannot make a ten year payoff investment with a pre-tax capital cost of 15 percent and still make a profit. That is not the real world—not when you have the Japanese on one side and some Europeans on the other breathing down your throat with a competitive or subsidized price structure. You can't make out, and so you buy and sell assets instead of creating them.

Thank you.

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