For release on delivery

1:00 P.M. CDT
(2:00 P.M. EDT)
April 16, 1999

Remarks by

Alan Greenspan

Chairman

Board of Governors of the Federal Reserve System

before the

Dallas Ambassadors Forum

Dallas, Texas

April 16, 1999

Technology and Trade

I am pleased to be able to join the City of Dallas and the Greater Dallas Chamber for this annual series of events to introduce a delegation of more than twenty foreign ambassadors to the region's economy and the important role international trade plays in it. I am happy, too, to be among the beneficiaries of a characteristically Texas–sized welcome. We will all go home as ambassadors for Dallas; no doubt a thought that occurred to the organizers of the first Ambassadors Forum nineteen years ago.

In the almost two decades since the forward–looking community leaders of Dallas envisioned the benefits of describing the city a center for international commerce, much of the nation and many around the globe have caught up to you. In the relatively brief span of years since the first Ambassadors Forum, our understanding of the important role of global trade and finance to our own economic well being has changed dramatically. Today, I would like to speak to you about one aspect of that change.

One of the most impressive and persistent trends of the last half century is the expansion of international trade. Adjusted for price change, trade across national borders has increased fourteenfold––far faster than the fivefold increase in world GDP.

The evidence is overwhelmingly persuasive that the massive increase in world competition––a consequence of broadening trade flows––has fostered markedly higher standards of living for almost all countries who have participated in cross–border trade. I include most especially the United States.

Although many forces have been at play, this surge in competitive trade has clearly owed, in large part, to significant advances in technological innovation.

Since the dawn of the industrial revolution, there has been an inexorable drive to leverage physical brawn and material resources into ever greater value added or output. New

insights into the laws of nature brought steam and later electric power. The development of a production quality level that facilitated interchangeable parts brought assembly line production. And the development of railroads facilitated the evolution of mass markets.

Almost all of the leverage of the physical to higher value added has reflected the substitution of ideas––new insights––for material bulk and brute human effort.

The resulting more effective organization of material has, of course, inevitably meant that less of it was needed per unit of output. The insights of metallurgy and architectural and engineering design, for example, enabled the construction of buildings that use far less physical material per unit of space than say, a half century ago. The insights that led to central heating, as well as synthetic fiber, facilitated reduced clothing weight, while the advent of the jet engine brought far greater annual passenger miles per unit of aircraft size.

But doubtless it has been the advent in recent decades of the synergies of the microprocessor, lasers, and fiber optics that has fostered a distinct quickening in the displacement of physical weight of output with concepts. The ability to miniaturize transistor electronic circuits has displaced huge tonnages of copper and enhanced the speed of calculation that the miniaturization of circuitry facilitated.

As microprocessors became an increasing part of our national product the relative physical dimensions of our value added fell dramatically. The physical weight of our gross domestic product is evidently only modestly higher today than it was fifty or one hundred years ago.

By far the largest contributor to growth of our price adjusted GDP, or value added, has been ideas––insights that leveraged physical reality. The consequent downsizing of output, of course, meant that products were easier, and hence less costly, to move, and most especially across national borders.

It is thus not surprising that the price adjusted level of international trade, as I indicated earlier, has expanded at a far faster pace than gains in real domestic demand. Imports of goods and services as a percent of gross domestic products worldwide, on average, have risen from approximately 14 percent twenty–five years ago to 24 percent today.

The growth in physical weight of such trade, as with the national product generally, has been far less. For example, United States data on both exports and imports indicates that the price adjusted value of our trade per pound has risen by approximately 4 percent per year on average over those same three decades.

But technology has augmented international trade for reasons beyond the downsizing of material output. New telecommunications technologies made it very difficult for the autarchic societies of the former Soviet Union to sustain their isolation in the face of the growing relative affluence of the West. News could no longer be bottled up. Even in the West, the stultification of protectionism became increasingly evident as new consumer products entered the world markets *en masse*. The political pressures to deregulate moribund industries and open up borders to trade soon became irresistible. The international trading system that evolved has enhanced competition and nurtured what Joseph Schumpeter a number of decades ago called "creative destruction," the continuous scrapping of old technologies to make way for the new. Standards of living rise because the depreciation and other cash flows of industries employing older, increasingly obsolescent, technologies are marshaled to finance the newly produced capital assets that almost always embody the cutting edge technologies. This is the process by which wealth is created incremental step by incremental step. It presupposes a continuous churning of an economy in which the new displaces the old.

But there is also no doubt that this transition to the new high–tech economy, of which rising trade is a part, is proving difficult for a large segment of our workforce that interfaces

with our rapidly changing capital stock day by day. This is most evident in the rising fear of job skill obsolescence that has induced a marked increase in experienced workers going back to school––often community colleges––to upgrade their skills for a rapidly changing work environment. The proportion of all college enrollees over age thirty–five rose from less than 9 percent of total students in 1972 to 18 percent in 1997, and probably still higher today. The demand for on–the–job training has also understandably expanded substantially.

While major advances in standards of living are evident among virtually all nations that have opened their borders to increased competition, the adjustment trauma has also distressed those who once thrived in industries that were then at the cutting edge of technology, but which have since become increasingly noncompetitive. Economists will say that workers should move from the steel districts of western Pennsylvania to a vibrant Silicon Valley. And eventually they, or more likely, their children, will. But the adjustment process is wrenching to an existing workforce made redundant largely through no fault of their own. It may be argued that all workers should have the foresight to recognize long–term job opportunity shifts and move in advance of obsolescence. This regrettably is a skill not in great abundance––among business managers or the economists who counsel them as well as among workers.

Yet the protectionist propensity to thwart the process of the competitive flow of capital, from failing technologies to the more productive, is unwise and surely self–defeating. History tells us that not only is it unwise to try to hold back innovations, it is also not possible over the longer run. Generation after generation has experienced episodes in which the technologically obsolescent endeavored to undermine progress, often appealing to the very real short–term costs of adjusting to a changing economic environment. From the Luddites to the Smoots and the Hawleys, competitive forces were under attack. In the end they did not prevail and long–term advances in standards of living resumed.

Indeed, we have an example here in Dallas–Fort Worth of the benefits of trade and investment sparked by the North American Free Trade Agreement. In some interesting research done at the Dallas Fed, it was estimated that import and export growth with Mexico is over 16 percent higher per year owing specifically to the effects of NAFTA. Consumers in both Mexico and the United States have a wider array of less expensive goods and services available and, hence, higher standards of living.

Nonetheless, the campaign to expand free trade is never won. It is a continuing battle. While tariffs in industrial countries have come down sharply over the past half century, other barriers have become more prevalent. Administrative protection in the form of antidumping suits and countervailing duties is a case in point. While these forms of protection have often been imposed under the label of promoting "fair trade," oftentimes they are just simple guises for inhibiting competition. Typically, antidumping duties are levied when foreign average prices are below average cost of production. But that also describes a practice that often emerges as a wholly appropriate response to a softening in demand. It is the rare case that prices fall below marginal cost, which would be a more relevant standard. Antidumping initiatives should be reserved, in the view of many economists, for those cases where anticompetitive behavior is involved. Contrary to popular notions about antidumping suits, under U.S. and WTO law, it is not required to show evidence of predatory behavior, or intention to monopolize, or of any other intentional efforts to drive competitors out of business.

In the end it is clear that all economic progress rests on competition. It would be a great tragedy were we to stop the wheels of progress because of an incapacity to assist the victims of progress.

Our efforts should be directed at job skills enhancement and retraining––a process in which the private market is already engaged. Thwarting competition, by placing barriers to

imports, will prevent the needed transitions of the productive capital stock of the United States and other nations that enable it to continuously concentrate on producing those goods and services most desired by consumers.

Protectionism will also slow the inevitable transition of the workforce to more productive endeavors. To be sure, an added few years may enable some workers to reach retirement with dignity, but it will also keep frozen in place younger workers whose better job opportunities decline with time.

I regret that trade policy has been inextricably linked with job creation. We try to promote free trade on the mistaken ground that it will create jobs. The reason should be that it enhances standards of living through the effects of competition on productivity.

It is difficult to find credible evidence that trade has impacted the level of total employment in this country over the long run. Indeed, we are currently experiencing the widest trade deficit in history with a level of unemployment close to record lows.

Certainly, the distribution of jobs by industry is affected by international trade, but it is also affected by domestic trade. It is the relative balance of supply and demand in a competitive market economy that determines the mix of employment. When exports fall or imports rise, domestic demand and relative prices have invariably adjusted in the long run to leave total employment relatively unaffected. As economists like to say, all imports are eventually paid for with exports.

I also regret that, despite the remarkable success over a near half century of GATT, the General Agreement on Trade and Tariffs, and its successor, the World Trade Organization, in reducing trade barriers, our trade laws and negotiating practices are essentially adversarial. They presume that a trade concession extracted from us by our trading partners is to their advantage at our expense, and must be countered.

Few economists see the world that way. And I am rash enough to suggest that we economists are correct, at least in this regard: trade is not a zero sum game.

If trade barriers are lowered by both parties, each clearly benefits. But if one lowers barriers and the other does not, the country that lowered barriers unilaterally would still be better off having done so. Raising barriers to achieve protectionist equality with reluctant trading partners would be neither to our benefit, nor to theirs. The best of all possible worlds for competition is for both parties to lower trade barriers. The worst is for both to keep them up.

For these reasons, I am concerned about the recent evident weakening of support for free trade in this country. Should we endeavor to freeze competitive progress in place, we will almost certainly slow economic growth overall, and impart substantial harm to those workers who would otherwise seek more effective longer–term job opportunities. Protecting markets from new technologies has never succeeded. Adjustments to newer technologies have been delayed, but only at significant cost.

Even should our trading partners not retaliate in the face of increased American trade barriers, an unlikely event, we do ourselves great harm by lessening the vigor of American competitiveness. The United States has been in the forefront of the postwar opening up of international markets, much to our, and the rest of the world's, benefit.

It would be a great tragedy were that process reversed.