



OFFICE OF THE DEAN
WALTER A HAAS SCHOOL OF BUSINESS

545 Student Services Building# 1900
Berkeley, California 94720-1900

LAURA D'ANDREA TYSON

Laura D'Andrea Tyson is Dean of the Haas School of Business at the University of California at Berkeley. She is the only woman currently leading a major business school in the United States.

Dr. Tyson served in the Clinton Administration from January 1993 through December 1996. Between February 1995 and December 1996 she served as the President's National Economic Adviser and was the highest ranking woman in the Clinton White House.

Dr. Tyson was a key architect of President Clinton's domestic and international policy agenda during his first term in office. As the Administration's top economic adviser, she managed all economic policy-making throughout the executive branch. Dr. Tyson also served as a member of the President's National Security Council and Domestic Policy Council. In appointing Dr. Tyson as his National Economic Adviser, President Clinton praised her for offering "unfailingly frank, direct and principled advice." Prior to her appointment as National Economic Adviser, Dr. Tyson served as the sixteenth Chairman of the White House Council of Economic Advisers, the first woman to hold that post. In that capacity, she was responsible for providing the President and his National Economic Council with advice and analysis on all economic policy matters, for preparing the Administration's economic forecasts and for the annual *Economic Report of the President*.

Before joining the Clinton Administration, Dr. Tyson published a number of books and articles on industrial competitiveness and trade, including the highly acclaimed book *Who's Bashing Whom? Trade Conflict in High Technology Industries*. She also has published several books and articles on the economies of Central Europe and their transition to market systems.

Dr. Tyson has a summa cum laude undergraduate degree from Smith College (1969) and a Ph.D. in economics from the Massachusetts Institute of Technology (1974). She is a member of the Boards of Directors of the Bay Area Council, the Council on Foreign Relations, Eastman Kodak Company, Fox Entertainment Group, Inc., Healthon Corporation, Human Genome Sciences, Inc., the Institute for International Economics, Morgan Stanley, Dean Witter, Discover & Co., the New America Foundation, and SBC Communications Inc. She is a principal of the Law & Economics Consulting Group and a member of The Trilateral Commission. She serves on the Board of Trustees of the Asia Foundation; the Advisory Boards of Barter Trust, Epiphany, the Shorenstein Company LP, the G7 Group, Inc. and *The Journal of Economic Perspectives*; and the Boards of Editors of *the American Prospect* and *California Management Review*. Dr. Tyson served as a member of the *National Bipartisan Commission on the Future of Medicare* from 1997 to 1999.

She is an Economic Viewpoint columnist for *Business Week magazine* and a commentator for *Nightly Business Report*. She writes regularly about domestic and international economic policy matters in *The Washington Post*, *The New York Times*, and other nationally and internationally syndicated newspapers and magazines.

Testimony Before the US Trade Deficit Review Commission

Laura D'Andrea Tyson
Dean Haas School of Business
University of California, Berkeley
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1. High-technology industries, that is industries in which knowledge is a prime source of competitive advantage for producers, have several special characteristics. Compared to other kinds of economic activities, high-technology industries employ more highly skilled and **technically** trained workers, pay higher wages, invest greater amounts in R&D, and export a larger fraction of their output. Technology-intensive industries also violate many of the static assumptions that underlie standard economic theory. In such industries, the returns to technological advance create beneficial spillovers for other economic activities, and potential barriers to entry create business environments conducive to first-mover advantages and strategic behavior.
2. High-technology industries, especially in the information-technology area, have provided the foundation for the strong expansion of the American economy in the 1990s. Business spending on information technologies has accounted for more than one-half of all investment spending in recent years. And the contribution of investment spending to overall economic growth during the expansion of the 1990s has been more than twice what it was during the previous expansions of the last fifty years.
3. During the 1990s, the US competitive position in high-technology industries has strengthened. The erosion in the US position in the 1980s, reflected in dwindling shares of US producers in global markets for several high-technology products and services, has been reversed. This reversal has been the result of many factors including:

- an improvement in US productivity growth triggered by greater investment, corporate restructuring and ongoing technological change;
- the rapid diffusion of Internet and e-commerce technologies in which US producers have a commanding global lead;
- the competitive strength of the US in venture capital markets that have supported the development and introduction of new goods and services;
- a sound macroeconomic environment which has helped increase the availability of capital;
- and energetic policies by the Clinton Administration to continue to liberalize trade through bilateral, regional and multilateral negotiations.

As a result of these and other factors, the US economy has been ranked the most competitive economy in the world by a panel of impartial observers for the last five years.

4. US trade policy is based on the view that trade liberalization is good for America and good for its trading partners. With freer trade, consumers enjoy greater lower prices, higher quality, and greater selection among the goods and services they buy. And with freer trade, producers can sell to larger markets and enjoy higher profits, allowing them to maintain higher levels of production and employment. Access to larger markets is especially important for the competitiveness of many **high-**technology industries in which costs decline as the scale of production and sales increase. Freer trade also increases competitive pressure on companies which in **turn** encourages them to innovate and enhance their productivity. A recent study by Mann at the Institute for International Economics finds that both importing and exporting raises trend productivity growth in manufacturing industries. Her research indicates that trade encourages and diffuses the fullest uptake of globally available technological innovations, thereby strengthening the effects of R&D spending on productivity growth.

Trade liberalization is particularly important to the US economy because foreign tariffs and other trade barriers remain substantially higher in the rest of the world than they are at home and because 80% of the world's consumption and 96% of the world's population lie outside US borders.

5. The Clinton Administration has completed and implemented nearly 300 trade agreements during the last seven years, including five of truly historic proportions—the Uruguay Round, the North American Free Trade Agreement; and three multilateral agreements on information technology, basic telecommunications, and financial services, sectors of special importance for US producers of high-technology goods and services. The Information Technology Agreement eliminated tariffs on \$600 billion of trade in high-technology manufactured goods including computers and semiconductors; the Basic Telecommunications Agreement improved the access of American companies to the \$1trillion market in world telecommunications services; and the Financial Services Agreement liberalized the trade and investment environment for \$50 trillion of financial transactions each year.
6. Ongoing liberalization in trade and investment policies, breakthroughs in information technologies, and deregulation in telecommunications and transport have promoted an increasing globalization of production and distribution of goods and services. Reflecting stronger links with the global economy, the share of trade in goods and services (exports plus imports) in US GDP has increased from about 20% in 1991 to about 30% in 1999. During this period, the US current account moved from near balance to a deficit of more than \$200 billion, about 2.7% of US GDP. The increase in the current account deficit has been the result of both an increase in the US trade deficit and rising investment service payments on the accumulation of US debt to the rest of the world.
7. During the last two years, despite the trade policy achievements of the Clinton Administration and the strengthening productivity of the American economy, the US trade and current account deficits have increased dramatically. These increases have not been the result of greater protection abroad or eroding competitiveness at home. Rather they have been the result of robust economic growth in the United States and a sharp slowdown in many regions of the world occasioned by a series of disruptions in global financial markets. These disruptions threw 40% of the world economy into recession, with seven major economies contracting by 6% or more, and tens of millions of jobs lost in emerging market economies. Exports accounted for about one-third of the growth in the US economy between 1992 and 1996; but thereafter as a result of contracting global markets around the world, US export growth fell sharply—from about 10% in 1997 to zero in 1998. During the first few months of this year, US exports actually declined in absolute terms.
8. Despite the severity of the economic slowdown in many parts of the world, most countries adhered to their WTO commitments during the last two years. As a result the world avoided a cycle of protection and retaliation of the type that contributed to the Great Depression and international political upheavals in the 1920s and 1930s.
9. The experience of the last seven years suggests several conclusions for US policy in the future

The US should continue to foster global trade liberalization. Of particular importance for the US economy is the liberalization of global trade in agriculture in which trade barriers and trade-distorting subsidies remain high and global trade in services in which the US has a growing trade surplus and a strong competitive position. Also important is the development of new multilateral rules for the new products, services, and means of conducting trade made possible by rapid changes in technology. For example, new rules must be developed to guarantee open markets in such new services as telemedicine and satellite delivery of entertainment to households. The US must also work to extend the WTO's moratorium on the imposition of tariffs on electronic transmissions and to ensure full protection of intellectual property rights on the Internet. The US agenda for further trade liberalization in high-technology industries must recognize that in addition to standard trade barriers, such as tariffs and quotas, competition in high-technology industries can be affected by national differences in a wide range of policies including competition or antitrust policies, R&D policies, intellectual property protection, standards and testing procedures, and national procurement and export controls.

Increasing growth in the rest of the world will reduce the growth of the US trade deficit. At the same time, if other countries expand more rapidly, the rate of return on their investments will rise and this in turn will encourage global investors to adjust their portfolios away from US dollar-denominated assets. The result is likely to be a drifting down in the dollar's value which in turn will help close the US trade and current account deficits.

On the domestic front, the US must continue its support for basic research and development on which the health of its high-technology industries depends. At the same time, the US must pursue policies to encourage an increase in the private-sector saving rate and to improve worker skills for current and future high-technology jobs.

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