Remarks to the TCU Economic Outlook Conference

Delivered to the Center for Business and Economic Forecasting at the Neeley School of Business, Texas Christian University

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Fort Worth, Texas
May 16, 2007

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Thank you, Dean Short. I am honored to be the keynote speaker at this first annual Economic Outlook Conference at the Center for Business and Economic Forecasting here at TCU's Neeley School of Business. You are especially kind to take in a Dallasite to break bread with you today.

We have come a long way since the days when the late, great Amon Carter would reportedly bring his own food whenever he had to come 30-some miles east to Dallas and some of the great characters of Dallas would do the same when they came out Fort Worth-way. The world has changed much in the past many years since these trailblazing figures dominated our respective communities.

Today, Fort Worth and Dallas are joined together on the continuous Möbius strip that is today's global economy. Together, we are on the same plane as we face the challenges of the new economic era.

I'd like today to talk about some of the changes that have occurred in the world around us. I would like to talk about globalization and prospering in an intensely competitive world.

Long ago, the case for competition was articulated by such iconic economists as Adam Smith and David Ricardo. Perhaps the most apt refinement of the dynamics of competition and its consequences for economic advancement, however, came from a professor at Harvard—the TCU of the East—named Joseph Schumpeter.

I am midway through a brilliant biography of Schumpeter, *Prophet of Innovation*, by Thomas McCraw and published just recently. McCraw puts substantial flesh—a double entendre, by the way, as he writes that Schumpeter used to tell his classes at Harvard that he "aspired to be the greatest economist, horseman and lover in the world" and then would add, "Things are not going well with the horses"—he puts flesh on the bones of an economist who coined the term *creative destruction*, one I draw on repeatedly to put our current economic situation in perspective.

Let me read to you three excerpts from two of Schumpeter's seminal works. First, from *Capitalism, Socialism, and Democracy*: "The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers' goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates."

From that same page: "The opening up of new markets, foreign or domestic, and the organizational development from the craft shop and factory…illustrate the same process of industrial mutation…that incessantly revolutionizes the economic structure *from within*, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact of capitalism. It is…what every capitalist concern has got to live in."

And from volume 1 of Schumpeter's *Business Cycles*: "A railroad through new country, *i.e.*, country not yet served by railroads, as soon as it gets into working order upsets all conditions of location, all cost calculations, all production functions within its radius of influence; and hardly any 'ways of doing things' which have been optimal before remain so afterward."

String the key operative phrases of those three citations together and you get the plot of the story of globalization: "The opening up of new markets, foreign or domestic . . . revolutionizes the economic structure, . . . destroying the old one, . . . creating a new one. . . . [It] upsets all conditions of location, all cost calculations, all production functions, . . . and hardly any 'ways of doing things' which have been optimal before remain so afterward."

The master of creative destruction of syntax, Yogi Berra, put it more eloquently: Once you open new markets, "History just ain't what it used to be."

Globalization is a gargantuan Schumpeterian railroad coursing across our economic landscape, upsetting all conditions of location, all cost calculations, all production functions, and no doubt all the assumptions once harbored by economic forecasters. None of the "ways of doing things" that were optimal before the revolutionary impulses of cyberspace and the fall of the Soviet empire, the transformation of China, and the many other manifestations of the hyperintegrated world we live in, remain so. History—together with the assumptions upon which many forecasters base their models for growth and inflation forecasting—just ain't what it used to be.

The economic impact of globalization is captured in stark prose in the recently issued annual report of the Dallas Federal Reserve Bank. I have brought copies for each of you today. Take it home. Read the essay titled "The Best of All Worlds."

The essay points out that the simultaneous opening up of the world economy—especially the integration of markets due to the telecommunications revolution and the development of cyberspace—has changed the way every entrepreneur, every manager, and every business woman and man in America contemplates their cost of goods sold and the markets they sell to as they navigate into the future.

The essay explores 10 ways globalization raises productivity and reduces costs. I am going to summarize them for you. But first, let me set the stage with a story about a good friend of mine named Dr. Jonathan Weissler, who holds the chair in pulmonary research at the University of Texas Southwestern University Hospitals in Dallas, where Dr. Weissler is chief of medicine. We have coffee together in the mornings at our local Starbucks and here is what he tells me:

When Dr. Weissler sees a patient, he, like most doctors, dictates examination notes into a recorder so that the information can be transcribed into the patient's file. There is nothing startling there; this has been standard medical practice for decades. What is new—and a hallmark of the Knowledge Economy—is that instead of paying an on-site employee at UT Southwestern to transcribe his dictation, he sends the recording electronically to a company that farms the work out to English speakers around the world to transcribe overnight. They type up the notes for a fraction of the cost while Dr. Weissler sleeps. And, *voilà*, they are on the good doctor's desktop the next morning.

Incidentally, Dr. Weissler says he can tell when the transcripts are produced in India because the English is perfect and even the most complex medical terms are spelled correctly—a testimony to India's teaching P.G. Wodehouse and the blocking and tackling of proper English in their schools.

By reducing costs and streamlining his recordkeeping in this way, Weissler's practice runs more efficiently and his staff can devote more time to serving patients. The real payoff is that the money saved can be reinvested into researching new ways to save and improve lives.

Dr. Weissler is harnessing and harvesting globalization. He is availing himself of resources created by the spread of knowledge around the world in order to save money and run an efficient operation. He now optimizes his operations in a way that couldn't be done before.

To some this is alarming—especially those who focus on jobs lost to globalization, like the ones held by Texans and other Americans who once transcribed those notes for Dr. Weissler. Dwelling on these lost jobs or outsourced tasks ignores lessons of history. To be sure, we cannot and should not ignore the painful adjustments that economic advancement inflicts upon displaced workers; we should never underestimate the human costs of the process of creative destruction. And we should implore our political leaders to come up with ways to assist those displaced workers and provide mechanisms for them to move up the economic ladder. Without, I might add, mucking up the creative side of the process.

American entrepreneurs and workers have developed a mastery of the creative side of the process—albeit with fits and starts—over the past 200 years. Our $13.2 trillion economy—the world's biggest, by far—is proof that we can adapt to new circumstances and profit from the benefits those circumstances provide. To be prepared for globalization—to harness and harvest it and ride it to continued prosperity—we must remain at the forefront of the Information Age. We must master the Knowledge Economy.

The lesson of the essay in our annual report is that globalization is spreading the Knowledge Economy around the globe—and the Knowledge Economy is accelerating the pace of globalization. While globalization itself is not new, it has gathered intensity over the past decade or so because of technologies that make it cheaper and easier to move information to nearly all corners of the world.

We have had decades to contemplate globalization in goods that were produced by cheap labor and abundant resources in faraway lands like China or Vietnam or Poland. But globalization has spread beyond manufactured goods to other segments of the economy, rapidly moving up the value-added ladder. Computers, the Internet, high-capacity fiber-optic cables and other marvels of modern communications fuel the extension of international competition into a broad realm of the economy that had been largely isolated from it. I am referring, of course, to the globalization of the service sector.

Bear in mind that 82 percent of the American workforce is employed in the service sector. Generally speaking, our highest-paying jobs are in services—engineers, scientists, computer systems analysts, stockbrokers, professors, doctors, lawyers, dentists, CPAs, entertainers and other service providers—to say nothing of the mega-compensation paid to hedge fund managers and financial engineers.

Beginning in 1993, the average wage for private services employees surpassed base industry wages. By 1999, all nonretail services employees, even public service employees like government workers and teachers, were averaging more pay per hour than industrial workers.

The destructive side of the process of capitalism's creative destruction is evident in the numbers as old professions give way to new, higher-paying ones. The number of U.S. farm laborers decreased 20 percent between 1992 and 2002. In the same 10-year time frame, employment of telephone operators decreased 45 percent; that of sewing machine operators decreased 50 percent. This is not ancient history; this all occurred within a time frame that is fresh in the memory of everyone in this room.

Yet within that same time frame—between 1992 and 2002—the number of architects grew 44 percent, legal assistants 66 percent and financial services employees 78 percent. The growth of job categories related to the Internet, many of which didn't even exist in 1992—webmasters, for example—has been as dramatic as Moore's curve. The creative side of creative destruction has replaced lost jobs in declining sectors with new ones in emerging sectors.

Since 1992, the goods-producing sector has seen its share of nonfarm payrolls fall by 3.9 percentage points. However, the losses have been more than offset by job gains in just three service sectors—professional and business services, health care, and leisure and hospitality.

Today, manufacturing employs one of 10 U.S. workers, about the same number as the leisure and hospitality sector. One in 20 works in construction—fewer than in financial services. Nearly the same number of people work in government as in the goods-producing sector as a whole. In the past year, the number of manufacturing jobs shrank by 1 percent. In contrast, employment grew by around 3 percent in education, health care, and leisure and hospitality and by over 5 percent in professional services.

Here is a statistic that about beats all: At the end of 2005, the U.S. auto and auto parts manufacturing industry employed about 1.1 million workers and added 0.8 percent of the value to our GDP. The legal services sector employed nearly the same number but contributed 1.5 percent of the value added to GDP. I will resist the temptation to make a lawyer joke because this is no laughing matter to economists: The legal services industry provides as many jobs as auto manufacturers but contributes nearly twice the value added to our economic output.

I think you get the point: The service sector, not autos and other forms of traditional manufacturing, drives our economy. And will continue doing so.

Many services are still untouched by globalization. It remains impractical, for example, for a TCU professor to enjoy the pristine sushi freshly made by the dockside chefs who work around Tokyo's Tsukiji fish market, or to import the services of a barber who lives in…Seville—sorry Rossini, I couldn't resist that one. But many more services from all parts of the world can be delivered here in the blink of an eye (or in 40 winks of Dr. Weissler's eye overnight), thanks to the revolution in communication technologies that allow knowledge to overcome traditional impediments of distance.

Dr. Weissler shows us how some of the medical profession's common support services have been globalized. Yet, his example is but the tip of the iceberg of the ways we can stretch the boundaries of high-skilled services. In 2001, a surgeon in New York, using robotic tools, removed the gallbladder of a patient 3,870 miles away in the French city of Strasbourg. In 2005, a laptop computer in Boston guided instruments as they performed heart surgery—unaided by human hands—on a patient in Milan, Italy. Geographic boundaries and technological impediments are evaporating even at the far reaches of the value-added realm.

It is trends like these that inspired us at the Dallas Fed to consider the ways globalization is changing our economy.

Here are the 10 ways in which globalization now impacts the Knowledge Economy. We have found that globalization lowers communication and transportation costs, point No. 1; fuels competition, point No. 2; and encourages specialization, point No. 3. A firm can now access labor, raw materials and other resources at any time and from anywhere on the globe, resulting in point No. 4: improved production functions.

Producers can sell their goods and services to a larger market, No. 5, and extend their economies of scale, No. 6, by producing to satisfy global, not just domestic, demand.

Point No. 7, capital markets expand, freeing money to seek the highest return available globally and to fund development of new production capacity anywhere on the planet.

Point 8, knowledge spreads across towns, industries and countries, fueled by migration, the Internet, cell phones and trade.

Globalization erodes national or natural monopoly power, making markets more accessible to competition and more fair to consumers—or in other words, more "contestable," point 9. And finally, increased production leads to increased consumption without reducing the amount available for others to consume, point 10. Just because I'm downloading the most recent episode of *24* from iTunes does not mean someone in Norway cannot download it, too.

The common thread among these 10 factors is that they all raise productivity's level or its growth rate—or both. Higher productivity lowers costs. Lower costs restrain inflation, the bête noire of any progressive economy and the bane of Federal Reserve officials and central bankers everywhere. In this fundamental way, globalization raises the economy's speed limit, allowing policymakers to relax a little and let the economy expand at rates that might once have been considered unsustainable. In a globalized world, faster growth need not carry the same inflationary implications it does in a closed world.

The Fed's mandate calls for keeping inflation low while maintaining maximum sustainable economic growth—a duty we cannot fulfill without weighing productivity. Getting more output from existing labor and capital allows the economy to grow faster without igniting price pressures. We saw this vividly, for example, in the 1990s, when the IT revolution led to surging productivity, lower costs and faster growth. The Fed understood that increased supplies of goods and services, not inflationary excess demand, fueled the expansion, and it wisely let the economy seek a higher growth rate.

Considering all the dynamics of our globalized world, one problem economic forecasters have is that they lack proper measuring sticks to capture these intangible dynamics. When a Boston doctor operates remotely on a patient in Milan, should we credit it to the U.S. economy or the Italian economy? A Barbie doll is designed in America and assembled in Malaysia from Taiwanese plastic pellets, Chinese cloth and Japanese nylon. Is the doll American or Malaysian or something else? When people in the U.S. and other countries can work together so seamlessly, how can we pull them apart with the data? Our annual report underscores how the world is fast becoming one big integrated economy, which suggests we should care as much about foreign output gaps, capacity utilization rates and unemployment rates as we do about our own.

Traditional economic doctrine does not recognize the importance of, for example, foreign output to a country's inflation rate. Only domestic output matters. But a new economic model, produced by the Dallas Fed, allows us to show that foreign output also matters. For central bankers, getting policy right will involve analyzing a great deal of additional data and overcoming blind spots about what's going on in key parts of the world. We don't, for example, know as much as we'd like about China's capital stock, work hours and rural unemployment. We have no reliable estimates of the productive capacity in Brazil, India and Russia. All the data shortcomings are maddening, but they aren't reason enough to deny the fundamental fact that globalization is changing the way our economies work.

Data that do not reflect the world in which we live increase the chances for errors in judgment. We need to develop much better measures for the global economy, particularly as services are increasingly traded. Today, our most detailed measures pertain to goods, a proportionally shrinking segment of our economy. We can tell you about agriculture and manufacturing in excruciating detail—for example, manufacturing data are so refined that I can tell you whether the plastic we make is used for a bag, bottle, pipe, pillow or floor. But we have relatively little data about our fast-growing service sector. We have even less data on the global services economy.

Globalization doesn't just drive down costs and ramp up efficiency for businesses that harvest it. It advances living standards in ways not captured by the standard economic measures of progress. We need new and better tools to help us determine just how globalization is affecting economies around the world, and how policymakers can reap benefits from these insights. Getting it right may well alter our notions of economic progress, with ramifications for how we approach the goal of price stability.

The Dallas Fed is hard at work researching this issue. We are in the process of establishing the Globalization and Monetary Policy Institute, and our economic research team—the same people who inform our Bank's participation in the Federal Open Market Committee—is focused with laserlike intensity on advancing our knowledge of these underresearched and poorly understood phenomena.

I hope that our annual report will give you insight into how the operators of our economy address the Globalization Challenge. And I wish you luck as you attempt to forecast the future of our economy in this rapidly changing, intensely challenging and ever-entertaining world.

Thank you.