American Competitiveness

in a Changing World

BY

U.S. SENATOR

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Revised Edition

May 2006

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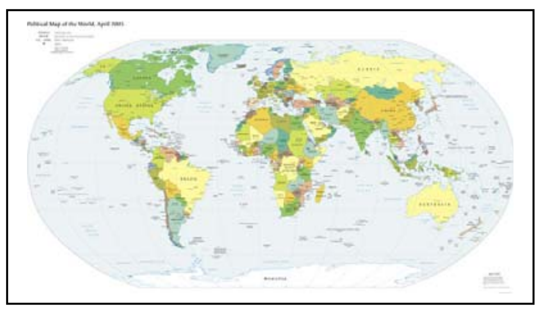
Foreword

The need to strengthen our country's global competitiveness is a new idea for many Americans. America has been used to global dominance. That other countries could pose serious economic and political challenges was unthinkable just a few years ago.

But China, India, and other nations are on the rise. Countries around the world are making carefully considered commitments to educating their children in math, science, and engineering. They are preparing new generations to win the high-skill, high-wage jobs of tomorrow on a planet where almost any work can be done for almost anyone from almost anywhere.

Already, American businesses big and small are looking beyond our borders to the new partners, new ideas, and new workers rapidly becoming available to them. Technology and trade agreements are making nations close neighbors for commerce, no matter how physically far apart they are.



There are many benefits for Americans in a world where nations and corporations can work together seamlessly. But make no mistake: These new partnerships are remaking the world's economic map. It will take American effort to keep our country at the forefront in this exciting time of challenge.

So it's time to get our economic and educational houses in order. It's time to tackle the tough issues that can drag down American advancement — like high health costs, high deficits, and our dependence on foreign sources of energy. It's time to renew our country's commitment to research and innovation. It's time to ensure that smart tax and trade policies keep American businesses, workers, goods, and services moving forward in world markets.

America still leads the world. But we need a bold agenda to maintain America's economic leadership and to preserve high-wage American jobs here at home. The speeches I have collected in this volume, given in 2005 and 2006, offer a foundation for that agenda. These ideas form the basis of a comprehensive legislative package for advancing American competitiveness.

I look forward to working with interested Americans to advance that legislation in Congress. But more than that, I look forward to the great conversation that Americans are going to have — that we must have — about the issues addressed in this book.

That's what strengthening America's global competitiveness is really about. We need to plan for America's economic future, with our eyes open. We need to work together to create the brightest possible future for our great country. And we need to start now.

American Competitiveness: An Agenda for Action

U.S. Senator Max Baucus (D-Mont.)
Ranking Member, U.S. Senate Committee on Finance

S. 2317, the Trade Competitiveness Act of 2006

Requires the U.S. Trade Representative to work closely with Congress to prioritize and break down the biggest barriers to U.S. trade worldwide, providing a time frame and a list of options for taking action to enforce trade agreements. • Creates a Senate-confirmed Chief Trade Enforcement Officer at USTR to investigate and advocate action on trade enforcement issues. • Creates a supporting Executive Branch task force that includes representatives from the Agriculture, Commerce, State and Treasury Departments. • Calls on the International Monetary Fund to more aggressively condemn currency manipulation for trade purposes. • Requires the administration to consider federal and state sovereignty in negotiating, implementing, and enforcing trade agreements.

S. 2398, the Energy Competitiveness Act of 2006

Creates the new Advanced Research Projects Agency – Energy (ARPA-E), to conduct transformative research and create alternative energy solutions. • Funds ARPA-E at $2 billion by 2011. • Authorizes ARPA-E to award cash prizes to encourage and accelerate energy research accomplishments. • Extends and enhances important alternative energy production and alternative-fuel tax incentives in the 2005 energy bill, including the investment tax credit for coal gasification technology, clean renewable energy bonds, and solar and energy efficiency tax credits for businesses and individuals. • Creates tax incentives for businesses choosing and using alternative-fuel vehicles.

S. 2431, the Savings Competitiveness Act of 2006

Brings payroll-deduction retirement savings to private sector workers lacking 401(k)s or similar plans. • Encourages automatic enrollment of eligible workers in retirement savings plans. • Offers a 50 percent matching contribution for lower income taxpayers and a $50,000 exemption from minimum distribution requirements for retirees with modest savings. • Provides "secure" IRAs with limited investment options and fees to simplify investment decisions and educational efforts. • Offers a small employer tax credit for employer contributions to new retirement plans. • Restores pay-as-you-go rules for both entitlement spending and tax cuts. • Simplifies distribution rules for IRAs and 401 (k) plans.

The R&D Competitiveness Act of 2006

Will make permanent the research and development tax credit. • Will simplify and improve the existing R&D tax credit. • Will establish a uniform reimbursement rate for all contract and consortia R&E. • Will simplify and improves the basic (or University) research credit. • Will allow tax-exempt private activity bonds for state and local governments to help build research parks. • Will help provide access to capital for small, research-intensive businesses through a "new markets" type tax credit.

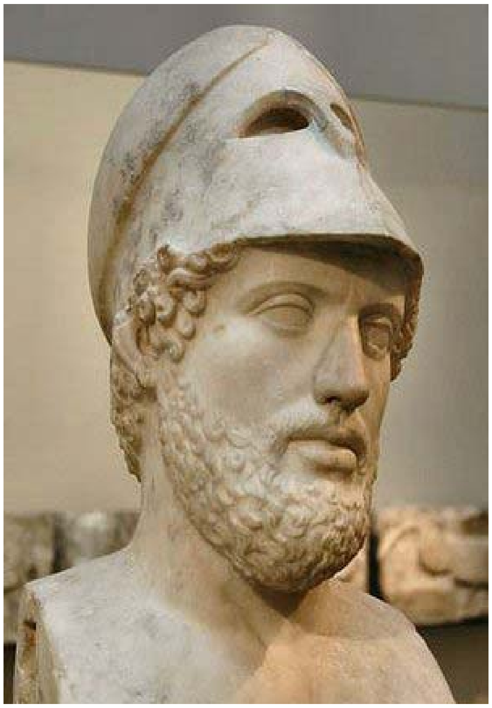
The Education Competitiveness Act of 2006

Will create scholarships for early education teachers • Will fund summer academies for math and science teachers • Will fund scholarships to encourage Americans to learn foreign languages • Will create incentives for teachers in rural and underserved areas • Will provide matching funds for universal voluntary early education • Will create scholarships for future math and science teachers • Double the availability of advanced placement courses • Will provide internship opportunities in the sciences • Will fund partnerships for mentoring and after school enrichment programs to promote innovation • Will establish specialty science and math schools in each state • Will restore programs that give low-income students greater access to higher education • Will expand and simplify the Section 529 program • Will create scholarships for science and engineering students • Will provide grants for future women scientists • Will provide grants for future minority scientists • Will increase the deduction for interest paid on student loans • Will restore our commitment to Indian education • Will increase the corporate deduction for company-sponsored education.

America’s Place in the World

Originally delivered June 24, 2005

A little less than 2500 years ago, in Athens, Pericles the king looked out from the Acropolis. In the bay beyond the port city, he saw some of Athens’s 200 ships, which brought peace, commerce, and Athenian pottery to a free-trade area of more than 100 Greek city-states. Pericles boasted: “The wares of the whole world find their way to us.”



Pericles of Athens

Pericles stood astride one the wealthiest, most culturally-advanced states of his time. Greeks had vanquished the evil empire of Persia to the east. Pericles had transformed the Delian League, a defensive alliance formed to contain Persia, into an Athenian empire. And Pericles advanced the world of ideas, advocating the new idea of democracy.

Said Pericles: "Athens alone, of the states we know, comes to her testing time in a greatness that surpasses what was imagined of her. . . . Future ages will wonder at us, as the present age does now."

Pericles had every reason to believe that Divine Providence had smiled on him and on his city.

Charles V, Holy Roman Emperor

A little less than 500 years ago, in Aachen, Charles V looked up to receive the crown of Germany. Charles had become the most powerful ruler in Christendom: Holy Roman Emperor and sovereign over what is now Spain, Central Europe, southern Italy, and Spain's new overseas colonies. Sir Walter Scott said: "The sun never sets on the immense empire of Charles V." Charles sought to unite his empire into a universal, multinational, Christian empire. His motto was: "Even further."

Charles had every reason to believe that Divine Providence had smiled on him and on his empire.

A little more than 150 years ago, in London, Queen Victoria, adorned in pink, silver, and diamonds, escorted by a troop of the Household Cavalry, rode in a closed carriage from Buckingham Palace to Hyde Park to see the Great Exhibition at The Crystal Palace. Trumpets flourished, and a thousand voices greeted her, singing Handel's Hallelujah Chorus.

She walked through the Exhibition, a world's fair, and saw exhibits displaying the riches of Britain's far-flung colonies: carved ivory furniture from India, furs from Canada, hats made by convicts from Australia. The theme of the Exhibition was one word: "Progress."

Victoria saw exhibits representing an England that was industrially supreme. England controlled one-third of the world's international trade. The English merchant navy handled three-fifths of the world's oceangoing tonnage. Senator Daniel Webster called the English empire:

> "a power which has dotted over the surface of the whole globe with her possessions and military posts, whose morning drum-beat, following the sun, and keeping company with the

hours, circles the earth with one continuous and unbroken strain of the martial airs of England."

Victoria of the United Kingdom

Victoria had every reason to believe that Divine Providence had smiled on her and on her empire.

The citizens of Periclean Athens, Habsburg Spain, and Victorian England each could feel that their nation had reached the zenith of human endeavor. From where they stood, Pericles, Charles, and Victoria were the most powerful leaders of their time. Their centuries belonged to them.

Pericles looked to "future ages." Charles envisioned going "even further." And Victoria saw ever more "progress."

But within a century, each nation had been eclipsed.

Periclean Athens fell victim to war. Not long after Pericles's death, the devastating Peloponnesian War with Sparta weakened Athens. Within a hundred years, the great city was dominated by a little known northern country called Macedonia.

Charles V, seeking to harness a new technology of shipbuilding and royal navies, incurred spiraling defense costs. Charles's wars caused him to pledge his revenues to bankers for years into the future. By 1543, two-thirds of his ordinary revenue went to pay interest on past debts alone. Not long after Charles's death, dynastic division rent his empire apart. And within a hundred years, Europe had become a continent of many roughly-equal powers.

Not long after Victoria's death, England found itself surpassed by American economic growth and mired in World War. And within a hundred years, Britain's once-great empire had spun off into a splintered commonwealth.

And so began what Henry Luce called "the American Century." At the beginning of the 20th century, America's economy was already 40 percent larger than China's and more than twice as big as Britain's.

And in the wake of World War II, America was the only major power whose homeland had not suffered massive devastation. America's economy dominated the world. At mid-century, America's gross domestic product was 5 times Britain's, 5½ times China's.

Look out today at the ships docked in the port of Seattle. Count the containers that bring grain and beef from Montana to the world. Count the containers that bring "the wares of the whole world . . . to us."

On behalf of a great and powerful nation, on February 2, President Bush could look out over lawmakers assembled in the House of Representatives and say:

> "[W]e've declared our own intention: America will stand with the allies of freedom to support democratic movements in the Middle East and beyond, with the ultimate goal of ending tyranny in our world."

2005 State of the Union Address

America's is a great promise. Ours is the leading nation. We live in the preeminent country on earth.

Americans have every reason to believe that Divine Providence has smiled on us and on our Nation.

Today, Americans account for fewer than 1 in 20 of the world's people. But Americans produce more than a fifth of the world's economic output.

Today, America has a $12 trillion economy, three times the size of Japan's, five times the size of Germany's.

But China's economy, when measured on a purchasing power parity basis, is now $7.3 trillion. And it is growing fast.

Like Athens or Spain or England in their day, America is the greatest power of our time. But our lease on greatness is no more certain than those of the great powers of the past. We, no more than they, cannot maintain our leadership of the world without effort.

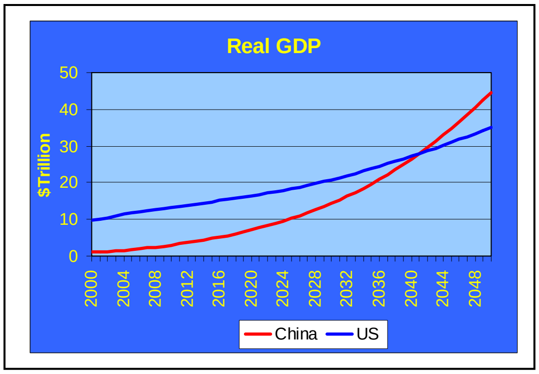
The next two decades will challenge America. We face competition from rising economic powers, powers with vast populations with nowhere to go but up. And foremost among those competitors will be China.

We cannot blithely sit back and rest on our laurels. We must energize ourselves anew to maintain America's place in the world.

Over the last two decades, China's economy has grown an average of 9.5 percent, roughly three times as fast as America's. And although America is a populous country of almost 300 million people, China is home to 1.3 billion people. India is not far behind, with just over a billion people.

Starting in the late 1970s, China and India began to reform their economies. And in the late 1980s, Communism collapsed in Eastern Europe. In the last two decades, these transformations have led to nearly half the world's population — about 2.6 billion people — entering the global workforce. The world has only just begun to feel the effects of this awakening.

Visit export-zone China, and you will see that corporate America and corporate Japan are already well in evidence. The international corporations already understand that China will fuel this century's economy.



Much of America, however, still has a shock ahead of it. Before 2020, China may surpass America as the world's largest economy. Superpower America has competition, after all. And we had better hustle, too, or the Chinese will eat our lunch.

Well-educated young people in China, India, and Eastern Europe increasingly have the skills to compete with Americans for high-value-added jobs. Companies are moving jobs offshore to workers in these countries not only because they work for less, but also because they are well educated in math and science.

An old Chinese proverb says: "What you cannot avoid, welcome." Dramatic Chinese growth appears unavoidable.

China has drunk the Kool-Aid of capitalism and it is not looking back. Big city China hustles, bargains, and works hard for a better life. Skylines soar in Shanghai and Beijing.

Big city Chinese public street signs come in Chinese and English. Western and Japanese companies' neon signs dominate the skyline. Western commerce is well represented, half a world from the West. China is no longer as foreign as you might expect.

You can see one district of Beijing that still sports Cyrillic billboards and shop signs. But this Russian enclave sells furs, not ideas. You can see which economic system won the cold war.

They call it "market socialism." And the European economic tradition is full of the melding of the two systems, so we cannot necessarily say that the term is a contradiction. But plainly the Maoist state-controlled economy is on the descent, and free-enterprise, self-interested capitalism is on the rise. Chinese government officials smile as they explain, quote, "Communism."

The bargaining economy now permeates China. Chinese merchants love to haggle over sales great and small.

The change began with Deng Xiaoping, who ruled from 1978 to 1997. But the change has now firmly taken root. Some will explain, in muffled tones, that in the wake of the 1989 Tiananmen massacre, the government made a concerted effort to demonstrate that China was "open for business."

China, India, and Eastern Europe are now actively seeking to move underemployed populations into more productive occupations — occupations that America and other developed countries once dominated. Millions of jobs in high-tech manufacturing, software development, and services are moving to these growing labor markets.

More than 700 million workers live in China. Half of them still work in agriculture and forestry. More than three out of every five Chinese still live in the countryside. As many as 200 million underemployed Chinese workers in rural areas could move into the cities and industrial jobs.

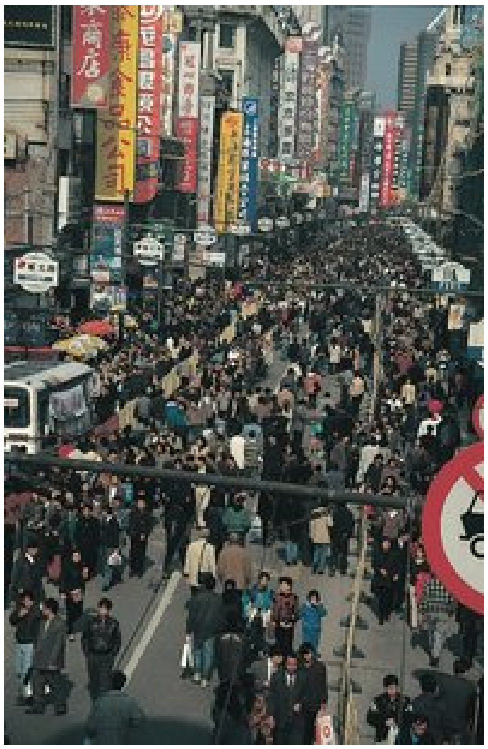
This huge pool of surplus labor presents China with a vast opportunity to modernize its economy, continue rapid growth, and move its people up the value-added ladder into more productive employment.

Tour an American or Japanese company plant in Shanghai. You will see rows of diligent, uniformed workers filling rows of clean, well-lit work stations. The plant manager will tell you how he pays these workers $1 an hour — about $2,000 a year — plus food and housing benefits. That is a good wage in a country with an average income of $1,100 a year. Compare that to America's average income of $37,600. Plants like this boast of a 90-percent retention of employees.

The plant manager will complain, however, that for the less-sophisticated operations, still-lower-cost centers are already nipping at their heels. Even within China, competitive businesses need to profit from innovation and new ideas, or fall victim to even lower-cost competition.

In the long-term, Chinese labor rights must advance to help lift Chinese wages. But with 200 million job seekers at the door, substantial wage increases still appear a ways off. For the near future, China appears to own the role of the world's low-cost manufacturer.

And China's workers are not all unskilled laborers. China has focused on its education system. It is quite good for a country its size. The literacy rate tops 86 percent.



Nanjing Road, Shanghai

Visit a primary school in a middle-sized Chinese city. Bright, enthusiastic, charming children will greet you and win your heart. Happy first graders will greet you in English. Chinese schools are preparing students to compete in an intertwined, multinational, multilingual world economy.

Are American schoolchildren learning Mandarin? Are they even learning Spanish? The coming generation of Chinese businesspeople will do business around the world. Americans need to broaden our linguistic abilities, or Chinese businesspeople will cut the deals before us.

China's growing population of college graduates also fuels its increasing strength in high tech. Last year, nearly three million Chinese entered the workforce from colleges and graduate programs. That was one-third more than the year before and double the year before that. Last year, China produced 220,000 new engineers. America educated only 60,000.

China now has an unusually open economy. Foreign investment in China is more than a third of its economy, compared with only 2 percent in Japan. In 2004, the sum of exports and imports is likely to reach three-quarters of China's GDP, far more than in other large economies. In America, Japan, India, and Brazil, the figure is 30 percent or less. China has allowed foreigners to participate in its growth and development.

China has stoked the engines of its economic development through means both fair and foul. China promotes its domestic high-tech industry at the expense of foreign firms. World Trade Organization commitments prohibit discriminatory taxation of foreign products. But China applied a 17 percent value added tax on all semiconductor sales, and then rebated 11 percent of this for semiconductors produced in China and 14 percent for semiconductors designed and produced in China. The United States had to bring a WTO case to challenge the policy. China agreed to drop the policy last year.

And China does an abysmal job of protecting patents and intellectual property. Walk into an open-air market in Shanghai, and you can buy ties that bear less than credible labels: well-known brand names, "Made in Italy."

Shanghai marketplace sign

And it is not just ties that Chinese businesses knock off. A red sign festooned a Shanghai market: "OBSERVE WILLINGLY 'TRADEMARK LAW'; PROTECT INTELLECTUAL PROPERTY," it cajoled. But as you walk under the sign, literally dozens of men hawk DVDs and watches of plainly dubious vintage.

And China also uses its currency exchange rate to distort the market. China has set, or pegged, its currency to the dollar, with an exchange rate of 8.28 renminbi to the dollar. Critics argue that as China's economy has grown, its currency should have appreciated against the dollar, making Chinese goods more expensive relative to American goods. The renminbi has not appreciated — and Chinese goods have not gotten more expensive — because of the peg. Many argue that China keeps the peg in place to support its manufacturing sector.

The reality may be more complex. But there is no denying that China does not have a free-floating currency. And there is no denying that a free-floating currency would be better for China and its trading partners, over the longer term. How to get there, especially with China's badly insolvent banking system, is what the debate is about.

China's economy could easily stumble, as America's did during the booms and busts of the 19th century. But barring any truly devastating crisis, China's economy will likely continue its upward trajectory. China will become the world's largest economy. The only question is when.

Faster growth in China should mean faster growth elsewhere. If China's real income grows by 8 percent per year, and its income distribution remains unchanged, then by 2020, China's top 100 million households will have an average income equal to the current average in Western Europe. That is a giant new market for consumer goods.

China's boost to global growth could exceed even those that the world economy has recently enjoyed from the spread of computers. Like that IT revolution, China's growth may lead to the loss of some jobs in the United States. But it will also likely lead to the creation of different jobs in greater numbers.

Notwithstanding the pervasive influence of American and Western culture even in once-isolated China, one senses a love-hate relationship with America. Chinese officials will note how our two nations had once been sworn enemies in a war that Americans, with our short memories, forgot long ago. On Chinese streets, men will walk up to you, ask you if you are American, and debate you about American foreign policy.

The Chinese Government maintains power through two tools: one, an improving standard of living, and two, nationalistic sentiment. In furthering the latter, China often paints America as the enemy keeping China from reuniting with Taiwan. The U.S. is thus second only to the Japanese in unpopularity in China. It need not be so.

Together, America and China accounted for half the world's economic growth in recent years. We are economic partners. We share interests in a non-nuclear Korean peninsula. And we share a common concern with radical terrorists. But many Chinese appear put off by the swagger of current U.S. foreign policy. We still have work to do to thaw U.S.-Chinese relations.

No American Government can prevent the challenges to the American economy posed by the increasing sophistication of labor markets in China, India, and Eastern Europe. We must accept the reality of these challenges.

The ancient Persians looked with disdain at the Athenian marketplace, the Agora. It was a proverb among the Persians that there: "Greeks meet to cheat one another." But we can no more prevent the spread of the world's commerce than Persia could stop the spread of Hellenism.

Some may seek to avoid the unavoidable future. But we would do better to learn how to embrace it. We must adjust our policies to meet the challenge.

The American Government cannot stop international companies from hiring overseas workers instead of American workers, without inflicting great harm on the American economy. American companies compete in a global environment. If an American company cannot hire those hard-working but low-wage Shanghai workers, a foreign company will. That other company will sell the products of that factory at lower cost. Consumers worldwide will buy them. And the American company will lose the business and jobs.

Neither can we erect tariff barriers that wall off foreign competition.

Higher tariffs are taxes that harm both the foreign sellers trying to sell into America and the American buyers who seek to buy foreign products. Tariffs impose a dead-weight loss on both sides. And protectionist measures invite retaliation. Protectionism thus ultimately harms a country's economy. Protectionism puts at even greater risk the jobs the politicians seek to protect.

Rather, to help prepare America to meet the challenges of the next 2 decades, we need to ensure that Americans develop the skills needed to continue to compete in higher-value-added fields. We need to continue our tradition of rewarding innovation and risk-taking. We need to fight to open new markets around the world. And we need to remove burdens that hinder our international competitiveness, like the high cost of health care in America.

Engineers play a critical role in the development of new jobs and new industries. In 1975, the United States ranked third in the world in the percentage of 24-year olds who held a science or engineering degree. By 2000, we had slipped to fifteenth. By 2004, we were seventeenth. At the same time, the Department of Labor projects that new jobs requiring science, engineering, and technical training will increase four times faster than the average national job growth rate.

Only a little more than 1 in 20 high school seniors who took the 2002 college entrance exam planned to pursue an engineering degree. The United States trains only half as many engineers as Japan and Europe, and less than a third as many as China. We should increase scholarships and loan forgiveness for engineering students to entice more young Americans to study engineering.

We should support community colleges, and strengthen the link between them and the workforce. Schools can then develop training programs relevant to jobs that actually exist in any given community.

Univeristy of Montana

We should make it easier, consistent with the requirements of national security, for foreign students to study in America. America has benefited from our ability to attract and to retain the best and brightest students from countries all over the world. Yet, since 9/11, many students are having a difficult time getting visas to study in America. Foreign applications to American graduate schools fell 28 percent in 2004. And enrollments of foreign students at all levels of college declined for the first time in 30 years.

Foreign students are increasingly studying in Europe and elsewhere. We are losing a generation of foreign minds — minds that in another time would have come to our shores. These declines are due in large part to the difficulties foreign students now face in getting a visa to study in America.

We must not compromise our security needs to host foreign businesspeople or students. But there must be ways to streamline visa procedures and otherwise lighten the burden to make it easier for foreigners to study and conduct business here.

American universities and research institutes do much of the most innovative research in the world. But over the last 20 years, Federal research funding in the physical sciences and engineering has actually declined by nearly one-third as a share of the economy.

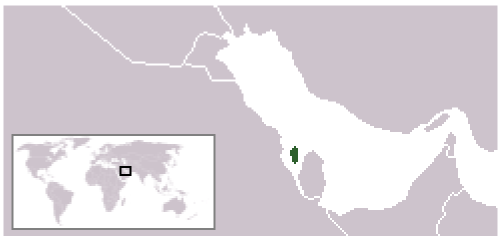
Money invested in Federal research programs pays dividends many times the investment. For example, National Science Foundation funding of research in the basic sciences and engineering has helped discover new technologies that have led to multi-billion dollar industries and created countless new jobs. These include jobs in fiber optics, radar, wireless communication, nanotechnology, plant genomics, magnetic resonance imaging, ultrasound, and the Internet.

We should invest in our future by fully funding research support organizations such as the National Science Foundation, National Institutes of Health, and the Office of Science at the Department of Energy.

optical fibers

Without Government support, private investment in research and development would be less than it should be. The society as a whole needs to foster the research that will build a better nation in the future. The research and development — R&D — tax credit has helped. But we can improve the R&D tax credit by simplifying it and making it permanent.

The Government has expended a tremendous amount of time, money, and manpower negotiating trade agreements with countries like Bahrain, Morocco, and Colombia. None of these small economies offers much to American exporters.



Bahrain

By contrast, last year, American companies lost more than $3.8 billion to business software piracy in China alone. Putting more resources toward defending American intellectual property rights would have a real effect on the bottom line for many American companies.

American companies sold $626.6 billion in copyrighted products in 2002, 6 percent of American GDP, and employed 5.5 million workers, or 4 percent of the American workforce. Their foreign sales and exports amount to $89 billion, more than most other export sectors. Our intellectual property is among our most valuable assets. Some would say it is now the American comparative advantage. We must do a better job protecting it.

The political bargain that has kept a consensus in support of liberalized trade has long been that in exchange for labor market flexibility, those hurt by trade would have help finding new jobs. That bargain has eroded.

America spends less on labor-adjustment assistance than any major industrialized country. Japan spends nearly twice the share of GDP, Canada nearly three times, and Germany more than eight times as much.

Trade adjustment assistance — TAA — provides retraining, income support, a health insurance tax credit, and other benefits to workers who lose their jobs due to trade. TAA is not a handout for idle workers, but a means to retrain them for competitive employment and help them through the transition.

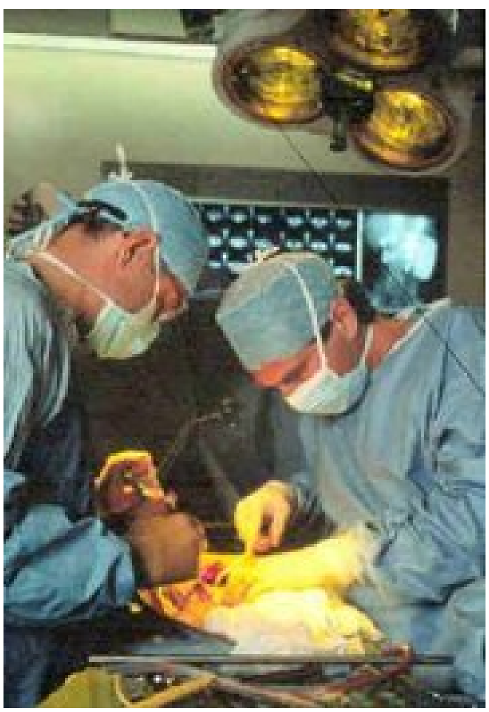
We should expand trade adjustment assistance to service workers and emphasize, and possibly expand, the wage insurance program.

And we need to do more to keep jobs in America. For most American companies, health-care costs are the single biggest disincentive to hiring new workers. The costs are enormous, increasing at a double-digit pace, far outstripping health-care costs in other countries.

America spends more on health care than any other country in the world. Per capita spending on health care in America is nearly 2½ times the average in the industrialized world.

Employers in America also bear much of the cost of the rising number of uninsured Americans through cost-shifting by hospitals and other health-care providers. Last year, employers paid an average of nearly $2,900 for single employee coverage and more than $6,500 for family coverage.

By contrast, most employers in other industrialized countries do not pay anything for their employees' health care. A government-sponsored universal health program bears those costs. The difference is hurting America's competitiveness.



We can take several small, practical steps to help lessen health care's burden on American companies. We could provide tax credits to small employers, fund employer-based group-purchasing pools, increase funding for high-risk pools, expand Medicaid and the State Children's Health Insurance Program, and permit a Medicare buy-in for the near-elderly.

But we cannot keep kidding ourselves. We need real change to address the problem of American health-care costs. We need to do so, to meet the challenge to America's place in the world.

In reality, the economic reforms in China, India, and Eastern Europe that cause the challenge to American leadership are a good thing. We should want China, India, and Eastern Europe to educate their people, open their markets, and trade with us.

Since World War II, there has been no greater advocate for free markets around the world than America. America has much to gain in a world of free markets. When foreign workers move into more productive work, their incomes will rise. As foreign workers become more prosperous, they will become better able to buy American goods and services. And by keeping our markets open to foreign products, consumer prices fall on everything from footwear to electronics, making the American consumer's dollar go further. Everyone can be better off.

Trade is not a zero-sum game. Increasing competition from China, India, and Eastern Europe does not mean that America will suffer.

Remember, after World War II, America prospered as it helped to rebuild a shattered Europe. Competition from recovering European economies did not hurt America. Rather, as Europe emerged from the devastation of war, the American economy grew along with Europe's. With the right policies, much the same can happen perhaps with much larger positive effects with the growth in China, India, and Eastern Europe.

Sputnik

Remember, in 1957, when the Soviet Union launched Sputnik, the first man-made satellite to orbit the Earth. The challenge of Sputnik gave America the political will to devote the resources needed to become the world's premier space power.

In the same vein, the economic challenge of the next 2 decades presents its own opportunities. The challenge posed by economic development in China, India, and Eastern Europe could help create a political consensus in favor of change and growth.

The former Librarian of Congress Daniel Boorstein wrote:

> "The most important lesson of American history is the promise of the unexpected. None of our ancestors would have imagined settling way over here on this unknown continent. So we must continue to have a society that is hospitable to the unexpected, which allows possibilities to develop beyond our own imaginings."

We cannot rest on our laurels. But if we remain open to the unexpected, if we allow the possibilities to develop, we can maintain America's leadership in the world.

It will take work. But if we redouble our education, if we open more markets, if we better manage our health-care, then we can face the challenges of the decades to come.

We must get to work. But if we do, we can make an America that, in Pericles's words, "comes to her testing time in a greatness that surpasses what was imagined of her."

If we do, America can continue to "stand with the allies of freedom" throughout the world.

And if we do, "Future ages will wonder at us, as the present age does now."

151 Cong. Rec. S7390-93 (daily ed. June 24, 2005).

Education and Competitiveness

Originally delivered June 27, 2005

In the book of Isaiah, the prophet wrote, "[M]y people have gone into captivity, because they have no knowledge."

Francis Bacon wrote, "Knowledge itself is power."

And when H.G. Wells summed up his history of the world, he concluded: "Human history becomes more and more a race between education and catastrophe."

In the next two decades, America's history will become more and more a race for economic leadership. For more than a century, America's economy has set the pace. We have led all competitors. Year after year, we have become used to winning the race.

Sir Francis Bacon

But now, over our shoulder, we can hear the footsteps of another runner. That competitor is China. And it is gaining fast.

If we wish not to go into economic subservience, if we wish to maintain our economic power, if we wish to avert economic misfortune, the answer is education.

America's economic leadership has been a remarkable achievement. We Americans are just 4.6 percent of the world's people. More than a fifth of the world's people live in China. There are nearly 4½ times as many Chinese as there are Americans.

Yet America produces 60 percent more goods and services than China.

That is how Americans can enjoy one of the world's foremost standards of living. The average American's share of our economic output is $37,610 a year. The average Chinese's share of theirs is $1,100 a year.

But from a slow start, China has picked up the pace. Starting with Deng Xiaoping in the late 1970s, China began to reform its economy. Deng was eminently practical, when it came to economic philosophy. He said: "It doesn't matter whether the cat is black or white, as long as it catches mice." Today, you can find those capitalist cats everywhere in China.

Over the last two decades, China's economy has been growing at an average of 9.5 percent, nearly three times as fast as America's. And some project that within 20 years, China's could become the world's largest economy, ending more than a century of American leadership.

Deng Xiaoping

You can see how they do it at an American or Japanese factory in Shanghai. You see rows and rows of hardworking workers, in colorful uniforms, at well-lit work stations. The company pays them about $2,000 a year, plus food and housing benefits. But that is good money in a country with an average income of $1,100 a year. The workers there want to keep their jobs. And 200 million other workers stand ready to take their jobs if they do not.

The challenge for America in the decades to come will be: How can America compete with that factory in Shanghai? How can we get paid $37,000 a year or more to make goods and perform services, when there are Chinese workers willing to work hard for $2,000 a year?

The answer is not protectionism. We cannot build a wall around America. We cannot lift the drawbridge and flood a moat around our Country.

If American companies do not employ those willing workers at the Shanghai factory, companies from Japan and Italy and China itself will. Then Japanese and Italian and Chinese companies will sell products more cheaply into America. And American consumers will gladly buy those products at lower prices. American consumers will insist on buying those products at lower prices.

If America raises tariffs on goods made in China, then American consumers will pay more for their cost of living than will people in other countries. Americans will have less money to spend on other things that they want, less money to spend on other things in America. The American economy will be smaller, if America raises tariffs.

If America raises tariffs, then American businesses will pay more for their industrial inputs than will businesses in other countries. American businesses will become less competitive, lose sales, and lose jobs. Once again, the American economy will be smaller, if America raises tariffs.

No, the answer to how America can compete with that factory in Shanghai is not protectionism.

The way that we can get paid $37,000 for our work — when Chinese workers are willing to work for $2,000 — is for Americans to add more value. Americans earn more because we produce better. Americans produce smarter.

And that means that for us to remain economic leaders of the world, Americans need to stay smarter. We need to educate our children and our workers so that American workers can add more value in an hour of work than workers in any other place in the world.

Knowledge will be economic power.

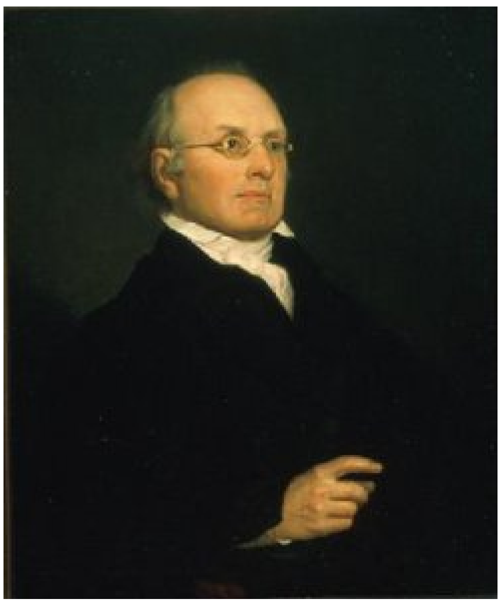
Ensuring that we continue to have more knowledge than the Chinese will not be easy. China has worked on its education system. Nine out of ten Chinese can read.

It is very Chinese to take the long view. More than 2,600 years ago, the master Kuan Chung said:

> "If you plan for a year, plant a seed. If for 10 years,

> plant a tree. If for a hundred years, teach the people. When you sow a seed once, you will reap a single harvest. When you teach the people, you will reap a hundred harvests."

We need to plant those seeds of education and tend those young saplings, in our public schools.



Joseph Story

In 1835, the Supreme Court Justice Joseph Story wrote:

> "Every successive generation becomes a living memorial of our public schools, and a living example of their excellence."

Ensuring that our schools are a living example of excellence will take more than just money. But ensuring that our schools are a living example of excellence will take money, as well.

We need to ensure that children can come to school ready to learn. We need to ensure that children have modern and well-equipped schools. We need to ensure that children have small classes. And most importantly, we need to ensure that children have good teachers.

In the next decade, America will need to hire 2 million new teachers. One in five new teachers leave teaching within three years. In urban schools, half of teachers leave the profession within 5 years.

Nearly two out of five low-income children are taught by teachers without a college degree in their primary instructional field. Low-income students are taught by more teacher's aides than credentialed classroom teachers. Four out of five aides do not have a 4-year college degree.

Columnist Tom Friedman wrote recently:

> "We are heading into an age in which jobs are likely to be invented and made obsolete faster and faster. The chances of today's college kids working in the same jobs for the same companies for their whole careers are about zero. In such an age, the greatest survival skill you can have is the ability to learn how to

learn. The best way to learn how to learn is to love to learn, and the best way to love to learn is to have great teachers who inspire. And the best way to ensure that we have teachers who inspire their students is if we recognize and reward those who clearly have done so."

We need to give good teachers the recognition that they deserve. Friedman told how every year, Williams College honors four high school teachers who made a difference. Every year, members of its senior class nominate their best high school teachers. A committee at Williams then goes through the nominations, does its own research, and chooses the four most inspiring teachers.

Williams gives each of the teachers $2,000, plus a $1,000 donation to the teacher's high school. And Williams flies the winners and their families to the college to honor them at graduation.

Williams's president, Morton Schapiro, told Friedman: "We take these teachers, who are not well compensated and often underappreciated, and give them a great weekend."

Said Shapiro: "Every time we do this, one of the teachers says to me, 'This is one of the great weekends of my life.'"

It's a great idea.

Each of us can do our part. I have started a program that will recognize Montana teachers acknowledged for excellence. This is something that all Senators can do in their home States. A little recognition can go a long way.

But if knowledge is power, then we must also devote the resources necessary to maintain that power.

Columnist Matt Miller argues: "The answer is to think bigger." He suggests that we make the best teachers millionaires by the time that they retire.

Miller proposes a "grand bargain" where we raise salaries for teachers in poor schools by 50 percent. And in return, teachers would agree to change their pay scale so that we could raise the top performers and those in math and science another 50 percent.

Miller, who used to work at the Office of Management and Budget, calculates that his plan would cost about $30 billion a year. That would provide a 7 percent increase in the nation's K-through-12 spending.

International Comparison of Math, Reading, and Science Skills Among 15-Year-Olds

Mathematics		Reading		Science	
Hong Kong (China)	1	Finland	1	Finland	1
Finland	2	South Korea	2	Japan	2
South Korea	3	Canada	3	Hong Kong (China)	3
Japan	6	Australia	4	South Korea	4
Canada	7	Ireland	7	Australia	6
Australia	11	Sweden	8	Canada	11
France	16	Hong Kong (China)	10	France	13
Sweden	17	Japan	14	Sweden	15
Germany	19	Poland	16	Ireland	16
Ireland	20	France	17	Germany	18
Poland	24	**United States**	**18**	Poland	19
United States	**28**	Germany	21	**United States**	**22**
Russian Federation	29	Italy	29	Russian Federation	24
Italy	31	Russian Federation	32	Italy	27
Mexico	37	Brazil	37	Mexico	37
Brazil	40	Mexico	38	Brazil	39

I ask my colleagues: Why don't we invest $30 billion for top teachers, and pay for it by closing abusive tax shelters?

And we need to help students to learn math and science. Companies are moving jobs offshore to China, India, and Eastern Europe not only because workers there work for less, but also because they are well educated in math and science.

Sadly, American high school students now perform below most of the world on international math and science tests. Most have little interest in pursuing scientific fields. Only 5.5 percent of the high school seniors who took the college entrance exam in 2002 planned to pursue an engineering degree. We have to do more to encourage students to love to learn math and science.

And we need to help students to learn geography and languages. Visit a primary school in a middle-sized Chinese city. Bright, enthusiastic children will greet you in English. Chinese schools are preparing students to compete in a multinational, multilingual world economy. The coming generation of Chinese businesspeople will do business around the world. Americans need to broaden our linguistic and geographic abilities, or Chinese businesspeople will cut the deals before us. As our former Colleague Bill Bradley said in 1988, “If we are going to lead the world, we have to know where it is.”

And after school, almost 6 million latch-key children go without access to after-school learning opportunities. More than seven in ten mothers of children under 18 are in the work-force. America can no longer afford a school day based on 1950s family structures. Quality after-school programs can both keep children safe and improve academic achievement. We need to ensure that children have quality after-school programs.

Similarly, we continue to have a school year that reflects the harvest schedule of an agrarian economy that America long ago left behind. Long summer vacations mean reading levels drop and other learning is lost.

Schools like Des Moines’s Downtown School point to another way. They have a six-week summer break. And that means less time to forget. Besides six weeks in the summer, students also have week-long breaks in October, February, and May.

Jan Drees, the principal of the Downtown School, says: “The research is becoming more and more clear that students retain more learning and need less review with shorter summer breaks.”

The Downtown school is popular, too. More than 800 children are on a waiting list to get into the school.

Iowa law requires schools to provide a minimum of 180 instructional days a year. But the Downtown School teaches students for 192 days a year. They are getting more learning in, every year. For Americans to stay smarter, students should spend more of the school year in school.

China’s increasing competitive strength is also fueled by its growing population of college graduates. Last year, nearly 3 million Chinese entered the workforce from 3- and 4-year colleges and graduate programs. This is one-third more than the year before, and double the year before that.

Montana State University - Bozeman campus

America’s college system is the finest in the world. And the work of the 21st century increasing demands good college education. But rising college costs increasingly bar Americans from getting the college education for which they are qualified.

We must make college affordable for all. We need to ensure that young Americans are not discouraged from obtaining post-secondary education because of costs. Tuition costs have risen considerably in recent years. And federal assistance programs have not kept pace.

Pell Grants help to make college education affordable for 5 million students, a third of American undergraduates. But students receive grants averaging just $2,500 a year, while the average annual cost of tuition at a public college in-state averages more than $9,000 a year, and private college averages more than $23,000 a year. The most that a student can get in Pell Grants is $4,050 a year. Expanding Pell Grants would increase the ability of low-income young Americans to prepare for the 21st century.

As well, we should improve, consolidate, and expand the government's education tax incentives to make them more effective. We could expand and extend the deduction for tuition expenses. We could expand the Hope and Lifetime Learning credits. We could craft targeted incentives for students pursuing science and engineering careers. We could do more to make it possible for nontraditional students to obtain an education. There are many good options.

As with elementary school students, we need to help encourage college students to learn the subjects needed in the 21st century.

In 1975, America ranked third in the world in the share of 24-year-olds who held a science or engineering degree. By 2000, we had slipped to 15th. By 2004, we were 17th. And in the future, the Department of Labor projects that new jobs requiring science, engineering, and technical training will increase four times faster than the average national job growth rate.

Last year, China produced 220,000 new engineers, while America educated just 60,000. And America trains only half as many engineers as Japan and Europe.

In a recent report, McKinsey Global Institute found that there are already twice as many young university-trained professionals in low-wage countries as in high-wage countries. China has twice as many young engineers as America.

Engineers play a critical role in the development of new jobs and new industries. We should increase scholarships and loan forgiveness for engineering students to entice more people to love to learn engineering.

At that Shanghai factory, American and Japanese research and development stand behind many of the products being built. But ask the American or Japanese company their plans, and they will tell you that they plan to move R&D work closer to the plant, there in China. And Shanghai's government hopes to lure more R&D to town. Chinese business understands that innovation is the source of American value-added.

And they want part of that action, too.

Clive Cookson reported in the *Financial Times* about a bioscience park outside Beijing. A firm there called CapitalBio is emerging as a world leader in the new technology of biochips. Biochips are cutting-edge devices that combine biotechnology and electronics for biological testing and medical diagnostics. The 4-year-old company is already selling instruments to American drug companies.

Last month, CapitalBio entered into a partnership with Affymetrix in California, the world's largest biochip producer. CapitalBio's chief executive said: "Affymetrix had never imagined that there was such a big research effort in biochips in China, working to such a high standard."

Dozens of similar examples exist. Already, several Asian countries boast of such science and technology centers. They are following in Japan's wake as world-class centers for research and development.

Asia's R&D investment and scientific output have both surged rapidly. Between 1998 and 2003, China's research and development spending roughly tripled.

You can judge a scientific paper's effect by how often other researchers cite it. The number of frequently-cited Chinese research papers has risen from just 21 in 1994 to 223 in 2003. And China's contribution to the world's scientific journals has increased from less than half a percent in 1981 to more than 5 percent in 2003.

And Chinese researchers will do research for less cost. Newly-graduated researchers in China generally earn about a quarter of what Americans do. For more senior staff, salaries are usually at least half American salaries. And in exceptional cases, they can sometimes exceed ours.

Beijing

Chinese scientists who have returned after studying and working in the west are playing an important role. In Beijing, CapitalBio's CEO said that he "made a special effort at the beginning to attract [Chinese expatriates] from abroad, with salary and stock options. We offered at least to match the salaries that senior scientists were receiving; the highest we offered was $120,000 a year," he said.

So far, Asia has been able to make a global mark only in a few new areas of the life sciences where western expertise is not entrenched. Stem cell technology is an example. South Korea, China, Singapore, and India are racing ahead on stem cell research. Those countries accept human embryo research in a way that the American government has not.

But America still has an advantage in innovation. And America also benefits from a risk-taking entrepreneurial culture. You can see it in the venture capital that funds companies spun out of American research laboratories or universities. America's capital markets remain the envy of the world.

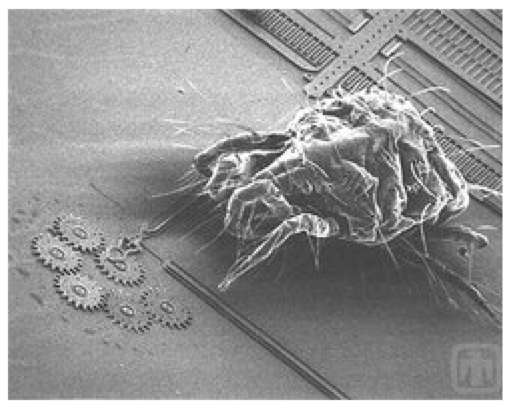
We can help to maintain that edge in innovation by supporting research. American universities and research institutes do much of the most innovative research in the world.

But over the last 20 years, Federal research funding in the physical sciences and engineering has declined by nearly a third as a share of the economy.

We should reverse this trend and increase Federal spending on basic research. The money we spend will come back to us many times over in the creation of new jobs in new industries making products yet to be invented.

We should support the National Science Foundation. The NSF funds research and education in science and engineering through a variety of successful programs. It accounts for a fifth of all Federal support to academic institutions for basic research, a crucial engine of innovation.

NSF funds have helped discover new technologies that have led to multi-billion dollar industries and millions of new jobs. NSF-funded work in the basic sciences and engineering made possible fiber optics, radar, wireless communication, nanotechnology, plant genomics, magnetic resonance imaging, ultrasound, and the Internet.



a mite next to a gear set produced using MEMS, the precursor to nanotechnology

Courtesy Sandia National Laboratories, SUMMiTTM Technologies, www.mems.sandia.gov

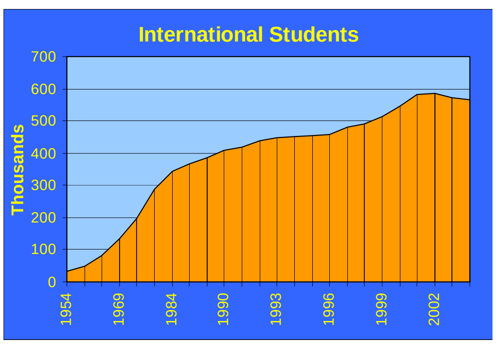
Each year, the NSF helps fund over 200,000 students, teachers, and researchers. Many of them take their NSF-supported work into industry. They found start-up companies selling new products and new technologies.

In addition, we should make it easier — consistent with the requirements of national security — for foreign students to study in America.

America has traditionally poached many of the best and brightest students from around the globe. Well over a third of American science and engineering doctorate holders were born abroad.

Since 9/11, however, many students are having a difficult time getting visas to study in America. In 2004, foreign applications to American graduate schools declined by 28 percent. Enrollments of foreign students at all levels of college declined for the first time in 30 years.

Foreign students are increasingly studying in Europe and elsewhere. That is a terrible loss. It will affect our economic health in the long-term. We need to do a better job balancing security and economic health.



international students in America

America must not compromise on its security needs in hosting foreign businesspeople or foreign students. But there must be ways to streamline visa procedures and otherwise lighten the burden. We need to make it easier for foreigners to study and conduct business in America.

We should support community colleges, and strengthen the link between them and the workforce. That will allow schools to develop training programs relevant to jobs in the real world. That is a primary goal of the Dole-Baucus Higher Education Access, Affordability and Opportunity Act (S. 1068).

And when American jobs are lost to trade, we need to retrain people and help them to get back into the workforce. The philosopher and educator John Dewey said, "Education is not preparation for life; education is life itself." We can no longer afford to think of education as something just for the young.

We need to help displaced workers to receive the retraining that they need to succeed in a changing economy. Jobs will change. We should help workers to get the educational tools to change with those jobs.

That is why I joined with Senators Wyden and Coleman to introduce legislation to expand Trade Adjustment Assistance to service workers who lose their jobs because of trade. TAA is a vital means of helping displaced workers get the education to change careers and stay productive.

When Plato envisioned the ideal society in his work *The Laws*, he wrote of the importance of education, through the course of life. He wrote:

[N]owhere should education be dishonored, as it is first among the noblest things for the best men. If it ever goes astray, and if it is possible to set it right, everyone ought always to do so as much as he can, throughout the whole of life.

Plato

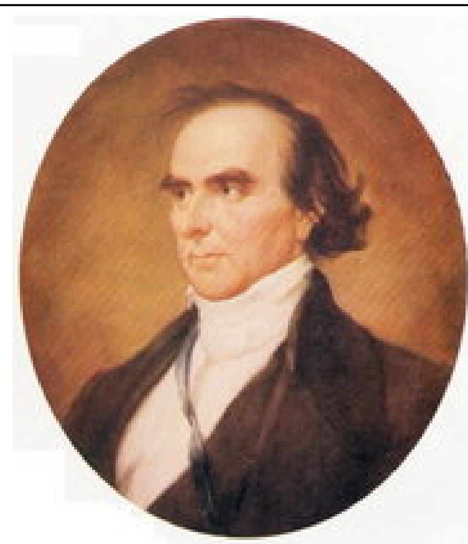
And so, through advancing education, America can compete with that factory in Shanghai. Through advancing education, America can respond to competition, without erecting harmful barriers to trade. And through advancing education, America can respond to a growing China, without forcing confrontation with China.

University of California economist Brad DeLong wrote of the choice that we face in how we address the challenge of China. He wrote:

"A world 60 years from now in which Chinese schoolchildren are taught that the U.S. did what it could to speed their economic growth is a much safer world for my great-grandchildren than a world in which Chinese schoolchildren are taught that the U.S. did all it could to keep China poor."

Through advancing education, America can seek that safer world.

But perhaps most importantly, America should seek to advance education not just to preserve our economy, but also to preserve our freedom.



Daniel Webster

As Senator Daniel Webster said in a speech in 1837, "On the diffusion of education among the people rest the preservation and perpetuation of our free institutions."

Thomas Jefferson

As Thomas Jefferson wrote in 1816, "If a nation expects to be ignorant and free, in a state of civilization, it expects what never was and never will be."

And as the Phrygian philosopher Epictetus said, "Only the educated are free."

And so, let us advance education to preserve our economic power.

Let us advance education to win the race for economic leadership.

And most importantly, let us advance education to help preserve our American democracy.

151 CONG. REC. S7414-17 (daily ed. June 27, 2005).

Voyages of Trade and Discovery

Originally delivered July 19, 2005

Six hundred years ago this month, a great fleet of more than 300 ships lifted anchor at Nanjing, China, on the first of seven voyages of trade and discovery. The Chinese fleet counted the largest wooden ships ever built, some with nine masts, massive keels of teak, and decks 400 feet long — if you can imagine, longer than a football field.

Admiral Zheng He of the Ming Fleet

The Ming Emperor gave his nearly seven-foot-tall admiral orders to sail on July 11, 1405, nearly a century before Christopher Columbus and Vasco da Gama left Europe. And all of those European explorers' ships could have fit on a single deck of one of the Chinese treasure ships. The 36-foot rudder of one of the ships stood almost as tall as Columbus' flagship, the Nina, was long.

The Ming fleet carried a crew of nearly 28,000, with a medical officer for every 150 souls on board. The fleets carried more than a million tons of silk, porcelain, copper coins, and spices to trade for the riches of the world, on to what the Chinese called the Western Ocean — what we call the Indian Ocean. They reached Sumatra, Ceylon, and India. They went to the Arabian Peninsula and Africa's Swahili coast. They made a side trip to Mecca.

At each port, ships with colorful prows delivered platoons of Chinese merchants, ready to do business. In Siam — now Thailand — they acquired sandalwood, peacocks, and cardamom. In Indonesia, they acquired tin. In Oman, they traded porcelain for frankincense, myrrh, and aloe. The Sultan of Aden gave them zebras, lions, and ostriches. In east Africa, they acquired a giraffe.

In 1451, one of the fleet's interpreters would write a memoir of the voyages, exclaiming: "How could there be such diversity in the world?"

In Sri Lanka, the admiral engraved a granite slab in Chinese, Tamil, and Persian, seeking blessing from Buddha, Siva, and Allah alike.

In the south Chinese harbor of Changle, the admiral inscribed on a pillar: "[We] have recorded the years and months of the voyages . . . in order to leave [the memory] forever."

He listed his destinations, "altogether more than 30 countries large and small."

He wrote of his efforts "to manifest the transforming power of virtue and to treat distant people with kindness."

He wrote: "We have traversed more than 100,000 li" — that is, 40,000 miles — "of immense water spaces and have beheld in the oceans huge waves like mountains rising sky-high, and we have set eyes on . . . regions far away hidden in a blue transparency of light vapors."

Today, approximately 600 years later, Chinese officials will proudly recall the voyages of the Ming fleet. They will observe that Ming China amassed one of the most powerful naval forces ever assembled, and they will pointedly note that China used the fleet not for conquest but for business and exploration, trade and diplomacy.

Three weeks ago, on June 24, 2005, a fleet of Chinese-made cars began rolling onto a ship in Guangzhou, China, bound for Europe. The fleet counted cars made at a gleaming new Honda factory on the outskirts of the sprawling city of 12 million souls near Hong Kong.

As reporter Keith Bradsher of the *New York Times* described:

> "At the new Honda factory . . . white robots poke and crane their long, vulture-like heads into gray, half-completed car bodies to perform 2,100 of the 3,000 welds needed to assemble each car. Workers in white uniforms and gray caps complete the rest of the welds, working as quickly as workers in American factories — but earning roughly $1.50 an hour in wages and benefits, compared to the $55 an hour for General Motors and Ford factories in the United States."

In America, General Motors and Ford struggle to pay high health-care costs for autoworkers with an average age of nearly 50. In China, most of Honda's autoworkers are in their twenties. They do not go to the doctor much, and when they do, Chinese doctors charge less than $5 for an office visit and a few stitches.

China's manufacturing companies are rapidly building wealth, and they have begun to trade that wealth for the riches of the world, across the Pacific Ocean.

At airports throughout the world, airplanes with colorful tail wings deliver platoons of Chinese merchants, ready to do business. In May, the Chinese company Lenovo acquired the personal computer division of IBM. In June, a Chinese company bid $2.25 billion for the Iowa-based appliance company Maytag. Also in June, China National Offshore Oil Corporation bid $18.5 billion for Los Angeles-based Unocal, whose "76" marketing symbol is one of the most recognized and enduring corporate symbols in America. And all this buying pales next to the acquisition by China's central bank of $230 billion of American Government debt.

China is pursuing trade agreements with India, Australia, New Zealand, and Thailand. China is reaching out to the 10 countries of the Association of Southeast Asian Nations, known as ASEAN.

The Chinese are visiting the rest of Asia in greater numbers than before. They bring with them money and optimism about the "new China."

The new China has gleaming skyscrapers, modern, productive industries, and a rapidly developing infrastructure.

China has launched a major charm offensive across Asia to promote itself as a desirable place to visit, to invest, and to live. Through ventures such as China Radio International, worldwide television broadcasts, and Chinese language and cultural centers across Asia, China advertises itself as an attractive destination. Increasingly, Asians are forgoing trips to Los Angeles, traveling to Beijing instead. For many young Asians, the gleaming lights of Shanghai illuminate the new Manhattan.

Pudong District of Shanghai

Already 90 million people in China's coastal cities have access to the Internet, and the Chinese own more cell phones than any other people in the world. There are more cell phones in China than there are people in the United States.

China has the world's largest population, the fastest growing economy, the second largest foreign currency reserves, and the third largest trade. China creates one-fifth of world trade growth.

In 2004, America exported 2½ times more to China than it did in 1999, 5 years earlier. My State of Montana exported 11½ times more. But America's merchandise trade deficit with China has more than doubled in the same time. China accounted for a quarter of America's $652 billion trade deficit last year.

As Tom Friedman writes in his book, *The World Is Flat*, which I recommend for everyone:

> "[W]hat is really scary is that China is not attracting so much global investment by simply racing everyone to the bottom. . . . China's long-term strategy is to outrace America and the EU countries to the top, and the Chinese are off to a good start."

China is amassing one of the most powerful economies ever assembled. So America must ask: Will the result be as benign as the voyages of the Ming treasure fleet 600 years ago?

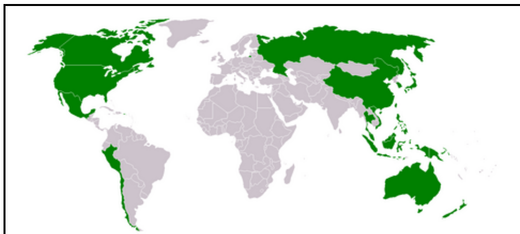
Asia accounts for one-third of the world economy. It is the world's most economically dynamic region. And America needs to pay attention. This administration has launched 20 free-trade agreements, but only one has been in Asia — with Thailand.

Instead of embracing ASEAN, this administration has largely ignored it. The Government has ceded the initiative in Southeast Asia to China. That is how ASEAN views the recent decisions of Secretary of State Rice to skip an important ASEAN gathering later this month. U.S. Secretaries of State have traditionally attended that conference. And this administration has failed to use the Asia Pacific Economic Cooperation, otherwise known as APEC, as a platform for trade integration. Rather, this administration has turned the organization into little more than a venue to discuss security options.

ASEAN

Since 2000, this administration has negotiated bilateral and regional trade agreements at a furious pace, but most of the agreements the Government has been negotiating offer little real value to America's commercial interests. Why? Because the Government is choosing trading partners more for foreign policy reasons than it is for commercial reasons.

The U.S. Trade Representative has finite resources. To be effective, to deliver the greatest benefits to Americans, our Government must direct their efforts where they are most likely to have the greatest effects.



APEC

In 1962, Congress created the Special Trade Representative — the predecessor of the U.S. Trade Representative — to remove trade policy from the State Department precisely so that commercial interests rather than foreign policy interests would drive American trade policy. I don't think that has happened. I believe trade shots are called by the White House.

We must focus trade policy efforts where they promise the greatest return for our ranchers, businesses, and our workers. First and foremost, we need to devote more effort to the ongoing Doha round of WTO negotiations. From all appearances, the negotiations are dragging. The pace of progress will have to improve considerably to meet the goal of an agreement by the end of 2006, and that will require a substantial commitment of U.S. leadership and resources.

We need to look more to Asia for bilateral agreements as well. For example, South Korea is our seventh largest trading partner, with a two-way trade totaling $70 billion. Korea has promised real reforms in its agricultural markets. It has liberalized investment restrictions and lowered merchandise tariffs. I have met with Korean trade officials on several occasions, and they are serious about reforms.

Regional trade agreements in Asia, perhaps under the auspices of APEC, also hold promise. APEC's 21 member economies account for a third of the world's population and about three-fifths of world production. American exporters will get a major boost from a regional free-trade agreement on this scale.

We also need to seek out further sectoral agreements such as the WTO's hugely successful Information Technology Agreement negotiated largely by America, Japan, and Singapore.

We should launch an initiative in the advanced medical equipment sector. Asia has a rapidly aging population, particularly in Japan, Korea, and China. This demographic shift translates into growing demand for advanced medical equipment. America already exports half a billion dollars a year in medical devices to China and Hong Kong, and these exports are expanding 12 percent a year.

We need to do a better job of enforcing our existing trade agreements.

In China, piracy — the theft of American copyrights and patents — is at epidemic levels. In the past 2 years, companies from General Motors to Sony to Cisco have complained that Chinese have stolen their intellectual property. More than 90 percent of software in China is stolen. American innovators are losing billions of dollars a year.

Combating piracy would help the American economy far more than further agreements with countries whose entire economies are but a fraction the size of our losses to piracy alone. I need only mention CAFTA. CAFTA is a blip compared to other commercial interests we should be pursuing.

100 Renminbi Yuan

China also maintains a troubling currency peg. But retaliatory tariffs are not the answer. Tariffs would violate our WTO commitments. Tariffs would inflame already difficult trade relations with China, invite Chinese retaliation in other areas, and make Chinese imports nearly a third more expensive. Tariffs would hurt American consumers who would pay more for many of the goods that they buy. And tariffs would hurt U.S. companies who rely on Chinese inputs to develop their own products.

Having said that, China's currency peg is a problem. It distorts world markets and hurts both America and China itself. China needs to revise its currency policy.

While issues with China dominate the headlines, there are other enforcement priorities, including in our own hemisphere. In Brazil, for example, the government recently forced an American pharmaceutical company to reduce its price for one of its medicines. It did so by threatening to break its promise to protect the American company's patent, and to let a state-owned company make generic copies of the medicine, an outrage.

This is blackmail, pure and simple. And it is illegal. This sort of coercion has no place in our trade relations. It hurts our companies and our workers. And it dampens the incentive to create new and innovative pharmaceuticals.

Our problems with Brazil go beyond just pharmaceuticals. Until recently, Brazil banned the sale of genetically engineered seeds for use in agriculture. These are the kind of high-tech seeds American companies like Monsanto and Pioneer Hi-Bred develop and sell all over the world — but not in Brazil. How odd then, that roughly 30 percent of Brazil's soybeans are grown with genetically engineered seeds. The figure is nearly 90 percent in Brazil's southernmost state of Rio Grande do Sul.

How can this be? Theft. These seeds were smuggled in from neighboring countries where they are allowed, and planted illegally. They were not purchased. They were stolen.

Brazil

And just like piracy in China, piracy in Brazil costs American industries dearly. Last year, American companies lost $930 million in Brazil because of piracy of audiovisual goods. Some estimate that three-quarters of the audiocassettes sold in Brazil are pirated.

Of course we cannot launch a full-fledged WTO dispute to address each and every foreign trade barrier. And the U.S. Trade Representative often rightly attempts to resolve many of these issues through negotiation and other means.

But there can be little doubt that trade enforcement has received a lower priority of late. In the 6 years from 1995 through 2000, the United States filed 67 WTO dispute settlement cases. In the 5 years since, we have filed only 12. That is about an 80 percent decrease.

Too often, our tools to address trade barriers are lying unused, on the shelf. That burdens Americans with economic losses. But what is more, when Americans see that others are cheating, their enthusiasm for trade cools. And we all suffer as a result.

Americans are also cool to trade when they see nothing being done to help those who lose from trade. Lowering tariffs and barriers increases competition and benefits many more than it hurts, but it inevitably hurts some.

For more than 40 years, the Government has been helping to retrain workers affected by trade to give them the skills that they need to find new jobs. These programs were expanded in 2002 under the Trade Adjustment Assistance Reform Act, a bipartisan effort and one of my proudest achievements as chairman of the Finance Committee at that time. The reforms expanded eligibility to new categories of workers, created a new health coverage tax credit, and helped older workers with a new wage insurance benefit. Last year, these programs helped nearly 150,000 workers.

TAA is an integral part of a successful trade policy. A few weeks ago, I discussed this very issue with Federal Reserve Chairman Alan Greenspan during a Finance Committee hearing. Chairman Greenspan stated, as he has before, that our trade policy should "assist those who are on the wrong side of the adjustment" caused by trade.

Alan Greenspan

Lately, the Government has not supported TAA. This year, the administration's budget zeroed out funding for the TAA for Firms Program, which pretty much everyone agrees has been useful and cost effective. Last month, the Senate Finance Committee passed an amendment offered by my colleague from Oregon, Senator Ron Wyden, to extend TAA benefits to workers in the service industry. The administration stripped the language out of the CAFTA implementing bill that it submitted to the Congress.

Liberalizing trade requires a grand bargain with workers. Workers agree to be exposed to increased international competition. It is helpful. But society agrees to erect a strong social safety net to help workers adjust.

When workers' old skills become obsolete, society helps them learn new skills to compete. If we undercut this bargain, we do so at the peril of further trade liberalization and our international competitiveness.

We must press forward with trade liberalization. For, 600 years later, international trade remains as vital to the world economy today as it was to Ming China.

Trade allows Americans to specialize in what we do best. That allows us to improve our international competitiveness and maximize our standard of living.

What Americans do best today is manufacture capital-intensive goods: airplanes, automobiles, and construction equipment.

Americans invent whole new fields, like biotech and nanotechnology, that lead to new products to make our lives better. University of Michigan scientists recently used nanotechnology to deliver a powerful drug inside cancerous tumor cells, increasing the drug's cancer-killing activity and reducing its toxic side effects.

Americans pioneer new services to make our lives better, like Internet banking. We export our services all over the world. Hollywood movies and American television programs are translated into countless languages and watched around the world. American universities educate students from virtually every country on Earth. American insurance companies insure assets in jungles, deserts, and savannas.

And American ranchers and farmers feed and clothe people around the globe.

Freer trade helps us find and open new markets for what Americans do best. New markets provide new opportunities for American workers and their companies. New markets mean greater demand for what Americans produce. And new markets mean more jobs and more investment opportunities to meet the demand.

Univerisity of Michigan

As we meet the demand of foreign consumers through trade, American products become global products. American brands become global brands. Coke is Coke, the world over.

I might digress and say 40 years ago I hitchhiked around the world with a knapsack on my back. In northern Ghana, I went to a little hut. I got off from the back of a truck. I was riding with the cattle in the back of the truck. My driver stopped to pray. He pointed his little prayer mat toward Mecca. In that little hut there was a little refrigerator, no electricity, and there was Coca-Cola. It was a world brand back then. Just think of all the world brands we could have today.

On today's voyages, one can find the familiar yellow arches of McDonald's in Cyprus, Slovenia, and Oman.

The American standard becomes the global standard and the international sign of excellence. Excellence means that half of the world's 20 largest companies are American companies — companies like Citigroup, IBM, and General Electric.

Importing products from our trading partners challenges domestic companies to compete. Competition keeps American companies nimble. American companies are constantly coming up with new products and better ways to make them.

Just look at the number of U.S. patents filed by Americans versus the rest of the world. Americans filed nearly 90,000 patents in 2003. That is 50,000 more than the next most innovative country, Japan. In innovation, we are still number one.

Tokyo McDonald's

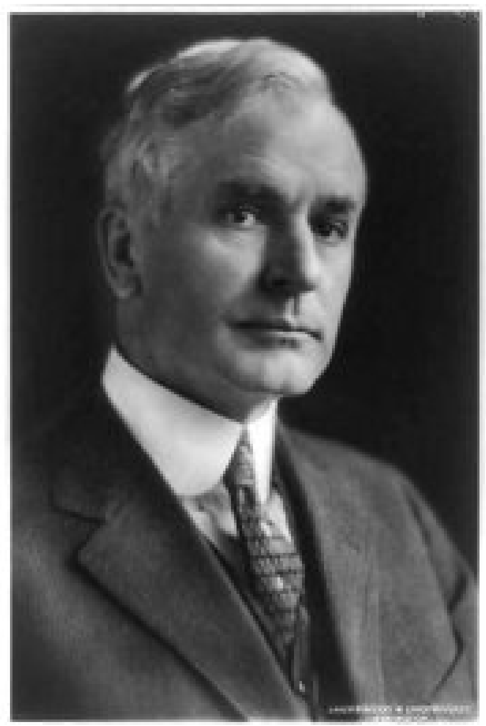
The biggest payoff from international trade goes to the American consumer. As more and more companies trade and produce what they are best at producing, prices in supermarkets and department stores plummet. Cheaper products mean that we can afford more of what we need, and our standard of living improves.

The now-ubiquitous cell phone provides a great example. Ten years ago, it was an unaffordable luxury for most Americans. Using one in public aroused curiosity. But trade forced prices to drop. Now many Americans see cell phones as a necessity.

Leaders have not always appreciated the benefits of trade. After the stock market crash in 1929, America enacted the Tariff Act of 1930. That act imposed the now-infamous Smoot-Hawley tariffs that deepened the Great Depression.

During the Presidential campaign of 1932, President Hoover warned that repealing the Smoot-Hawley tariffs would devastate the U.S. economy. Why? Because, he said, Americans could not compete successfully with workers in poorer countries with lower wages and lower costs of production. It was Franklin Roosevelt who argued that worldwide reduction of trade barriers would benefit both America and its trading partners.

Roosevelt's victory, along with his signing of the Reciprocal Trade Agreements Act, ushered in the modern era of American trade policy.



Secretary of State Cordell Hull

During World War II, Secretary of State Cordell Hull argued that economic protectionism had fed the animosities that led to the war. He advocated freer trade in the postwar era as a bulwark for peace and prosperity.

This vision led to the General Agreement on Tariffs and Trade, otherwise known as GATT, negotiated during the Truman administration. This forerunner to today's World Trade Organization brought down the disastrously high Smoot-Hawley tariffs and freed $10 billion of trade from duties.

Democrats can be proud of our role in expanding free trade. Democratic administrations completed and implemented the last three rounds of GATT negotiations. In 1967, the Johnson administration completed the Kennedy Round. In 1979, the Carter administration completed the Tokyo Round. In 1994, the Clinton administration completed the Uruguay Round.

Bill Clinton

The Clinton administration completed the North American Free Trade Agreement, negotiated the historic bilateral trade agreement with Vietnam, and granted permanent normal trade relations to China, ultimately paving the way for China's membership in the WTO.

The success of trade liberalization has been spectacular, touching the lives and well-being of all Americans. Freer trade has lowered our tariffs from about 40 percent in 1946 to about 4 percent today, and made our trading partners do the same. Freer trade has increased our national income by nearly $1 trillion a year. Freer trade has increased the average American household's income by nearly $10,000 a year. Freer trade with China alone saves American households $600 each year.

Today, 12 million Americans, 1 of every 10 workers, depend on exports for their jobs. International trade now accounts for a quarter of our gross domestic product, up from just 10 percent in the 1950s.

Trade opens our lives to new opportunities and choices. Trade gives us new foods to eat, new movies to watch, and new products to buy.

Strengthening trade ties also contributes to peaceful relations with our trading partners. Our quality of life improves as the world grows ever smaller, shrinking with the better communications and transportation links that develop with increased commerce.

Back in China, Guangzhou Airport has a terminal designed by an American company, boarding gates supplied by a Danish company, and an air traffic control tower engineered by a company from Singapore.

America's Dell Computers is giving the Chinese competitor Lenovo a run for its money in China. Dell now has become China's third-largest seller of PCs, and Dell now produces 3 million PCs in China, as many as Lenovo.

America should welcome China's greater integration into the world market. It may mean that we will have to work a little harder, study a little bit harder, and think a little bit quicker to keep ahead. But those are talents at which Americans excel.

In the middle of the 15th century, China made an abrupt change in foreign policy. Remember just earlier all those ships around the world? China turned inward and abandoned outward-looking trade. Imperial edicts banned overseas travel. To reduce commerce with foreign nations, the new Chinese dynasty burned a swath of land 30 miles deep for 700 miles of its southern coast. Any merchant caught engaging in foreign trade was tried as a pirate and executed.

With the Emperor's death in 1435, the government put a stop to the voyages of the Treasure fleet. Chinese court officials destroyed the plans for the Treasure ships, the accounts of their voyages, and almost every map and document of the previous period. Sadly, China's golden Ming age came to an end, China's economy fell backward, and the treasure ships became shrouded in the mists of history.

We cannot yet know whether the voyages of today's fleets of Chinese ships will lead to another golden age for China like that of the Ming Dynasty. But we also cannot expect that China will somehow once again abruptly reverse course and turn inward. That will not happen.

Try as regimes after the Ming dynasty did, they could not erase the history of the Ming treasure fleets, whose voyages will leave a memory forever.

Let us respond to today's Chinese fleets with the best spirit of the Ming admiral, and the best spirit of America.

Let us work to advance freer trade, so that for America and for China, we can, in the words of the Ming admiral, "manifest the transforming power of virtue."

Let us work to advance freer trade, to make a better world both for ourselves, and for "regions far away hidden in a blue transparency of light vapors."

And let us work to advance freer trade, because both in terms of new innovations and new trading partners, America's greatest voyages of discovery still lie ahead of her.

151 CONG. REC. S8442-45 (daily ed. July 19, 2005).

Health Care and Competitiveness

Originally delivered July 27, 2005

Every few minutes, a new Chevy Malibu, a popular family sedan, rolls off the assembly line of General Motors Corporation's Fairfax plant Kansas City, KS. The invoice price starts at $17,600.

And every few minutes, across the ocean, a new Toyota Camry, a popular family sedan, rolls off the assembly line of the Toyota Motor Corporation plant in near Nagoya, Japan. The invoice price starts at about $16,600, a full $1,000 less than the Malibu.

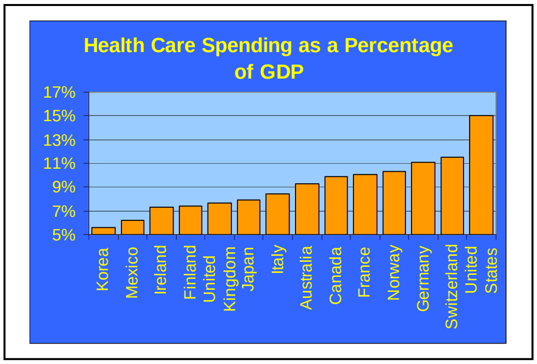
One reason for the price difference between the Malibu and the Camry is health care. Yes, health care. For GM, health-care costs amount to more than $1,500 for every vehicle it produces. For Toyota, health-care costs account for closer to $500 for every vehicle that it produces. That is about the thousand dollars difference.

Toyota Camry

Two-thirds of Americans get their health insurance at their jobs. The system started in World War II, when the Government capped wages. Employers competed for workers by offering more generous fringe benefits. After the war, a Government tax preference further encouraged employers to provide health insurance.

Almost all Japanese get their health insurance through their government. That is true of pretty much every other major industrialized country.

America's system has yielded high health-care costs. The average American spends more than $5,000 a year on health care. That is 53 percent more than the next most costly country. The average Japanese spends only about $2,000 a year on health care.



Last year, GM paid $3.6 billion in health-care costs for about 450,000 retirees and their spouses. When GM workers retire, GM continues to pay much of their health-care costs as part of the worker retiree benefits plan.

This year, 1,200 Japanese Toyota employees will retire. Within 2 years, pretty much every one of them will switch from Toyota's health insurance plan to the Japanese national plan. At that point, Toyota will pay absolutely nothing in health-care costs for those 1,200 retirees and their spouses.

General Motors provides more medical benefits than any other private entity. GM covers 1.1 million Americans, including workers, retirees, and their families. Last year, GM paid for more than 11 million prescriptions for its hourly workers.

Premiums for health insurance have increased 15 percent or more in many years. GM expects that its health-care bill will go up $1 billion this year, to $6.2 billion total. That is a year. Last year, GM spent $1.4 billion on prescription drugs alone. Last year, GM put $9 billion into a trust fund to pay for health-care costs.

Remember, when those retirees leave Toyota, they do not cover the health-care costs. The government does it in Japan.

In the late 1970s, GM controlled nearly half of the American car market. Since then, competitors such as Toyota, Nissan, and Honda have cut GM sales to about a quarter of the American market.

In the fiscal year ending March 2004, Toyota earned $10 billion in profits. GM has now been losing money for three quarters in a row. GM lost more than a billion dollars in the first quarter of this year alone.

Toyota is making nearly $1,500 a car in profit. GM is losing more than $2,300 per car.

Now, part of the blame for GM's declining market share lies with GM's inability to adjust to change. In the wake of the OPEC oil embargo, Japanese car makers sold low-cost, fuel-efficient cars to American families. But OPEC imposed its oil embargo more than 30 years ago, and Japanese car companies still lead the way in energy-efficient cars. Today, only Toyota and Honda mass produce fuel-efficient hybrid sedans.

But part of the blame also lies with the American health-care system. Carrying the burden of health-care costs handicaps American companies in their race for global markets.

Americans are smart. Americans work hard. But American manufacturers cannot compete with foreign manufacturers when American companies have to bear the extra load of these higher health-care costs.

You might think that because Americans pay more for health care, well, at least we get better health care. But we do not.

The average American does not have better access to health services. Forty-five million Americans lack health insurance. Fifteen percent of our population is uninsured. Japan offers better access to the dialysis and diagnostic image services — MRIs and so forth — than America does.

Nor do we have better outcomes. That is a fancy term for saying our people are not healthier after they see a doctor and go to the hospital. We are not better. The average American woman can expect to live to age 79. The average Japanese woman can expect to live 5 years longer, to age 84. People can expect to live longer in Canada, France, Germany, Sweden, Switzerland, and Britain. And all of those countries spend less per person on health care than do we.

America's fragmented system yields high administrative costs. In 2003, administrative costs accounted for nearly a quarter of American health-care costs. That is $400 billion — a quarter of what we spend on health care.

America is the only country in the industrialized world without a national health system. We do not have a single-payer system like Canada, Britain, or Switzerland. Instead, we have a system of uncoordinated payers, from private insurers to Medicare, from employers to State Medicaid programs. It is very uncoordinated, very diverse.

America's massive $2 trillion health-care bill ought to buy more. America's health-care system needs serious reform.

National health-care reform appears unlikely any time soon. But we have at our disposal — if Congress can act — the means to attack some of the most glaring inefficiencies in our health-care system and reduce unnecessary costs.

We can improve health care by facilitating the use of health information technology. We can improve health care by tying payment to the quality and value of care, rather than just spending on whatever services the doctors and hospital provide, irrespective of the quality and the outcome.

By encouraging investment in health information technology — computers, interoperability, getting rid of the paperwork — we can reduce unnecessary administrative costs, and we can enhance patient safety and clearly improve the quality of care.

Let me explain. America often invents new medical technologies. We often adopt new medical technologies early. We are leaders in the areas of drugs and devices, pills and procedures, science and surgeries.

But we have not complemented this innovation with the proper use of health information technology. The staggering cost of administering American's pen and paper system of health-care claims proves the point.

Thirty to 40 percent of American health-care transactions still rely on paper claims. That is according to health economist. Ken Thorpe of Emory University. These claims can cost from $5 to $20 each.

Emory University

But administering health-care claims electronically can cut those costs to as little as 50 cents each. Professor Thorpe estimates that requiring automated claims processing would save the Federal Government nearly $80 billion over 10 years. Significant savings would also accrue to the private sector, if it fully automated claims.

And proper use of health IT can prevent unnecessary medical errors, hospitalizations, and other health-care services.

Each year, about 7,000 Americans die because of errors in administering their medication. The equivalent of two 747s crashing today is the number of Americans who die today because of medical errors. That is many more than people who die of gun deaths or in traffic accidents. The equivalent of two 747s crashing every day is the number of Americans who died on account of medical errors — not bad outcomes, but medical errors.

Technology can help ensure that medical professionals give the right drug to the right patient at the right time. We are talking about drugs. We can help to do that by putting bar codes on all drugs, and by using health information technology to link medication administration to a patient's clinical information.

The inability to exchange clinical data among providers often causes duplication of diagnostic tests. Clearly, if you take somebody in Montana who goes on vacation in the great State of Louisiana and gets ill — maybe has a heart attack — and he goes to see a doctor, or goes to the emergency room, that doctor looks at the Montanan, administers some tests, and has no record of the Montanan who happens to be there on vacation — no idea what is going on. He has to start from scratch and run all these tests all over again. Clearly, it is unnecessary duplication. Just think how much more efficient we would be if that Louisiana doctor in that hospital could push a button and my Montanan's health-care record would be available. Clearly, it could protect the right of privacy and confidentiality, but just think of the savings that can be made. Think of how much better the health care would be to my Montanan in Louisiana.

We could help make it easier for one doctor to pull up that X ray that another doctor took a week before. Duplication is eliminated and the quality of care clearly improves.

Medicare spends $50,000 more for the average 65-year-old in Miami than for the average 65-year-old in Minneapolis, MN — $50,000 more per beneficiary in Miami than in Minneapolis, MN. You might ask, why is that? In their last 6 months of life, Medicare beneficiaries in Miami visited specialists six times more often than those in Minneapolis. You might say, they are healthier; more is spent on them. Or they go because there are more specialists in Miami compared to Minneapolis. But that is not what is happening.

By using health IT appropriately, we can reduce error and duplication and overuse of services. We can also coordinate senior care to ensure that they receive adequate preventive care and management for their chronic conditions. In fact, patients who see primary care physicians in Minneapolis tend to be healthier, where fewer dollars are spent, than do seniors in Miami who see more specialists. That is counterintuitive, but that is the fact.

Why is America falling behind in health information technology? Part of the reason is lack of investment. The health-care industry invests only about 2 percent of its revenues in health information technology. Other information-intensive industries invest about 10 percent. Think of the banking industry.

As a result, many health practitioners in America have limited information technology capability. In Britain, nearly all general practitioners — 98 percent — have a computer somewhere in their office. In America, extremely few small physician practices — just 5 percent — use anything but a pen and paper.

We have to help ensure that health information systems can communicate with one another. We need an agreed-upon set of standards so that health information technology systems can work together. Otherwise, we will have a Tower of Babel preventing communication of critical health information.

We can do better, and that is why I have worked with my colleagues on the Finance Committee and on the HELP Committee to introduce the Better Health-care Through Information Technology Act (S. 1355), a bill which facilitates nationwide adoption of information technologies in the health-care field. It will help those systems to talk to one another, it will set up loans and grants to encourage the use of more health IT, and it will help us to improve health-care quality.

We need to emphasize quality care. Medicare is the dominant care in America's health system, but Medicare is at best neutral and at worst negative toward quality. Medicare pays for the delivery of a service; Medicare does not pay for the achievement of health. And we see the effect. Patients receive recommended treatments only about half the time, and more care is often not producing better care.

"The Tower of Babel"
by Pieter Brueghel the Elder

Among the 50 States, levels of cost and quality vary greatly. In my home State of Montana, for example, Medicare spends about $5,000 per year per beneficiary. Quality of care ranks near the top. By contrast, some States spending around $7,000 a year per beneficiary — $2,000 more — have quality that ranks near the bottom.

States such as Montana, with its higher proportion of primary care practitioners, often produce lower costs and better quality. Less expensive care, when concentrated and patient centered, can do more for a patient than high-cost services.

I have introduced a bill with my colleagues, Senators Chuck Grassley, Mike Enzi, and Ted Kennedy, that will build value into the way Medicare pays for its services. The Medicare Value Purchasing Act of 2005 (S. 1356) will provide higher Medicare reimbursements to providers who show they are working to improve the quality of care they deliver.

Together, these two bills I mentioned form a package. This quality bill goes hand in hand with the health IT bill I just mentioned. Together, they will help improve American health care and help keep American businesses competitive.

In his recent book about competitiveness, *The World is Flat,* Tom Friedman talks about the need to strengthen what he calls the "muscles" of the individual American worker. Part of the solution to global competition, he says, lies in ensuring that the American health-care system provides our workers with access to health-care services without placing them or their employers in financial jeopardy. That means congressional action on health quality, and it means congressional action on health IT. I stand ready to work with my colleagues to realize that goal. Until we act, health-care costs will continue to make America less competitive. Until we start investing in health IT, we risk falling further behind. And until we start paying for health-care quality, we risk slowing our progress to a better future.

Ford assembly line 1913

A little more than a century ago, in 1903, a man named Henry Ford established the Ford Motor Company in Detroit, MI. That same year, a man named Orville Wright became the first person to pilot an airplane in powered flight. Americans have been at the forefront of transportation ever since. In 1929, the Duesenberg J, a premier four-door luxury sedan, began rolling off the assembly line.

The price was expensive at that time, starting at $13,000.

1929 Duesenberg J

Like the automotive industry, health care has come a long way in the last century. And like the automotive industry, health care needs to adjust and adjust dramatically to change. If we invest in health IT and start paying for health-care quality, we can help both the American automobile industry and the American health-care system to keep moving forward.

151 CONG. REC. S9107-09 (daily ed. July 27, 2005).

Savings and Economic Competitiveness

Originally delivered September 29, 2005

More than 10,000 years ago, on the eastern edge of the Mediterranean Sea, people became farmers. They started growing crops of emmer and einkorn wheat. They harvested the grain with curved, handheld sickle-blades.

3000 BCE Sumerian harvester's sickle

And 5,000 years ago, Mesopotamian farmers yoked cattle to pull plows. The plows' bronze-tipped blades cut deeply, greatly increasing productivity.

Today, in Ethiopia, wheat farmers still harvest their wheat with oxen or by hand. They use tools much like those invented 5,000 years ago. An Ethiopian wheat farmer harvests an acre of wheat in a week.

A few weeks ago, in Montana, a wheat farmer whom I know near Fort Benton, in Chouteau County, finished harvesting this year's hard-red spring-wheat crop. He and his family drive a John Deere 60 series STS combine that they bought for more than $225,000, a couple of years ago. STS stands for the "single-tine separator" system that the combine uses for threshing and separating. The combine's rotor technology yields a smooth, free-flowing crop stream, giving the farmer higher ground speeds and increased throughput capacity. This Fort Benton wheat farmer harvests 5 acres and 220 bushels of wheat in half an hour.

What the Ethiopian farmer can do in a week, the Montana farmer can do in 6 minutes.

There are a lot of reasons for the difference: land, climate, seed quality, farming skills. But one big difference between the productivity of farmers in Ethiopia and the productivity of farmers in Montana is their tools — their physical capital.

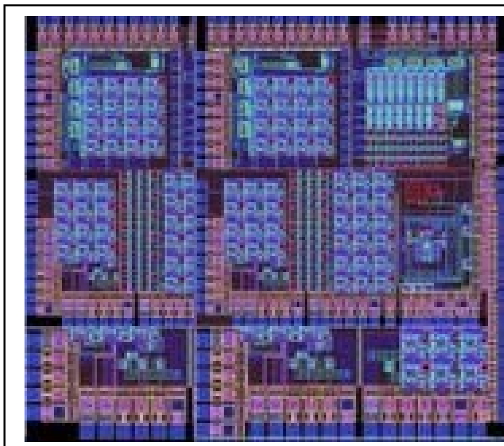
Capital distinguishes the modern age. Capital is the most important reason why the average American earns about $40,000 a year and the average sub-Saharan African earns about $600 a year. Capital makes American workers more productive and more competitive.

This is my fifth address to the Senate on competitiveness. Starting this summer, I spoke on competitiveness generally. I spoke on the role of education in competitiveness. I spoke on the role of trade in competitiveness. I spoke on the role of controlling health-care costs in competitiveness. And today, I wish to speak about the role of capital and savings in competitiveness.

Capital means financial wealth — especially that used to start or maintain a business. Many economists think of capital as one of three fundamental factors of production, along with land and labor.

Capital and the productivity that it engenders set apart developed economies from the developing world. With capital investment, the construction worker uses a backhoe, instead of a shovel. With capital investment, the accountant uses a calculator, instead of an abacus. With capital investment, the office worker uses a personal computer, instead of a pencil.

In the late 1950s, there were about 2,000 computers in the world. Each of these computers could process about 10,000 instructions per second.



integrated circuits

Today, there are about 300 million computers. Each of them can process several hundred million instructions per second.

In less than 50 years, the world's raw computing power has increased four-billion-fold. This sustained increase in productivity is unparalleled in history. Capital investment in information technology made it possible.

In 1960, capital investment in information technology was about 1 percent of our economy. By 1980, investment in IT increased to 2 percent of our economy. By 2000, investment in IT increased to 6 percent of our economy.

These are slow, single-digit increases in investment. But look at the revolutions that they ignited.

This information technology investment contributed to a new era of American worker productivity and competitiveness. That productivity continues today. In the mid-1990s, when the benefits of IT investment kicked in, American workers began producing nearly 4 percent more per hour. As increased productivity surged through the economy, the standard of living improved for the Nation.

Capital made possible this unprecedented productivity. Investment made possible this capital. And savings made possible this investment. Savings is the seed corn for productivity growth.

National savings fuels investment. Investment provides capital to our workers. Capital ignites productivity. And productivity makes our economy accelerate.

Savings is what is left of income after consumption. National savings collects the surpluses of private households, businesses, and governments. When workers put part of their salaries into 401(k) plans, that adds to national savings. When companies hold on to their excess earnings and profits, that too adds to national savings. And when the government runs a budget surplus, that public sector savings adds to the national pool of savings, as well.

The three elements of national savings — household savings, corporate savings and public savings — are fundamental to economic competitiveness. Savings lets us invest in new factory equipment, machines, or tools. Savings lets us invest in high-technology innovations. Savings lets us invest in human, physical, and intellectual capital.

But America's level of national savings is dwindling. The decline of America's savings demands action.

At the end of last year, net national savings stood at just under 2 percent of gross domestic product. That is less than \$2 for every \$100 that our Nation earns. This is down more than 70 percent since 2000. No other industrialized country in the world has such a low national savings rate.

If we break down national savings into its component parts, we can see why national savings has fallen off. First the good news: Corporate savings has held steady — even increased — over the past decade. But the good news ends there.

Personal savings — what American households are contributing to the Nation's savings — has fallen dramatically. Just 10 years ago, Americans saved about $4 of every $100 that our economy produced. By the end of 2004, we were saving just 99 cents. And today? The recent data show that personal savings has fallen even further, below zero.

In July, for every $100 of disposable income that Americans generated, we spent that $100, plus 60 cents more.

Rather than saving, American households are borrowing. In the 1980s, total household debt equaled about 70 percent of a year's after-tax income. By 2004, household debt equaled 107 percent of after-tax income.

And the bad news gets worse. As American households fish pennies out of the Nation's piggy bank, there is a growing hole at the bottom. The public sector is draining national savings as the huge Federal budget deficits grow.

In just 4 years, the Federal Government's contribution to national savings has gone from a positive contribution of more than 2 percent of the economy, to a drain of more than 3 percent. Instead of contributing $2 for every $100 the economy earns, the Federal Government takes out $3 dollars. Government deficits are the chief cause of our abysmal national savings rate.

The Treasury Department

With national savings so low, how has America's economy remained an engine of growth?

We find the answer in Japan, Europe, China, and even the developing world.

Americans have stopped saving. But the rest of the world has not.

Today, Americans turn to foreign lenders for our savings. The rest of the world has become America's creditor, happily lending their savings to our Government, corporations, and households. Fully 80 percent of the world's savings come to America. The world's largest economy has become the world's largest debtor.

This is a big change. Between 1950 and the early 1980s, our foreign borrowing was balanced. Some years we borrowed from foreigners. And other years we lent. But for most years, we remained a net creditor.

Since then, our situation has dramatically reversed. We now depend on foreigners to fuel our economy.

Look at foreign and domestic investment flows. Last year, our net borrowing from foreign lenders totaled nearly $700 billion. This year, our net foreign borrowing could well exceed $800 billion.

This kind of borrowing adds up. As recently as 1985, America had zero net foreign debt. Today, America's net foreign debt is the size of nearly 30 percent of our economy.

The last time that we had this level of foreign debt, Grover Cleveland lived in the White House. The last time that we had this level of foreign debt, 18 percent of Americans were unemployed, violent railroad strikes shook the Nation, and a deep depression gripped the world economy.

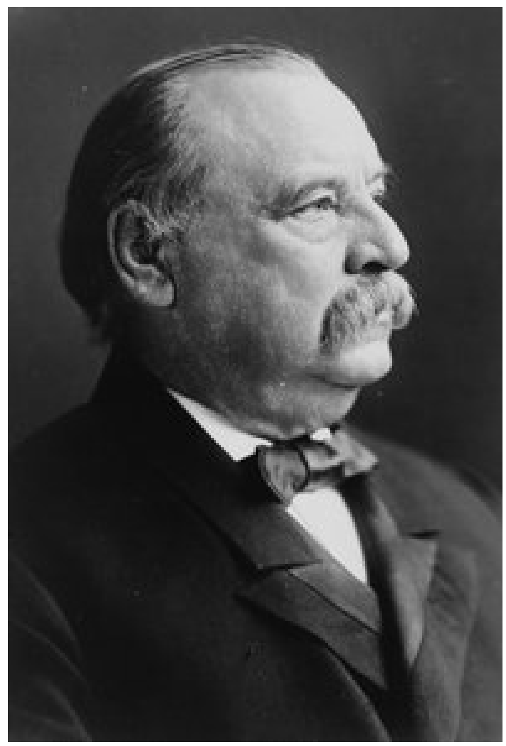
What is worse, soon, the ratio of foreign debt to GDP will hit 50 percent. In 7 years, the ratio will hit 100 percent.

This is unprecedented, not just for the United States. It is unprecedented for any modern industrialized country.

We welcome foreign investment in America. Our economy's openness to the world's capital has helped keep our economy strong. Foreign investment fuels our economy and creates good American jobs.

But if we continue to become increasingly dependent on foreign capital, then we will have to pay the piper.

First, continued borrowing means an ever-growing claim on our Nation's assets. The more that foreigners lend to America, the more dividend and interest payments they will collect — not Americans but them.



Grover Cleveland

In 2005, for the first time since these data were recorded, America will pay more on foreigners' investments in America than American investors earn on their investments abroad. This year, these payments could amount to $30 billion. By

2008, these payments could rocket to more than $260 billion.

That would be a quarter of a trillion dollars paid out that would not boost our productivity. That quarter of a trillion dollars would increase foreign countries' standard of living, not ours.

That would be a quarter of a trillion dollars simply paying on our existing debt. More and more, we would have to borrow new amounts from foreign sources to pay back funds that we had already borrowed.

And that would be a quarter of a trillion dollars of behavior that one associates with a Third World economy, not the United States of America.

Second, foreigners are increasingly not investing their savings in America's productive sectors, but in U.S. Government securities. Foreigners are frequently buying our Government securities as part of schemes to manipulate currency markets and subsidize their exports. Those schemes further hurt our competitiveness and our future standard of living.

That is, they are not investing in plants and equipment; they are investing in our securities so they can accomplish other objectives and goals.

When 80 percent of the world savings flows to one country, the world economy is unbalanced. When 80 percent of the world savings flows to just the United States of America, that is a big imbalance.

This imbalance creates dangerous problems and distortions in the U.S. economy and throughout the world.

Eventually, the pendulum will swing back. The world economy will return to equilibrium. Foreign investors will decide to rebalance their portfolios. They will reduce their lending to America. America will have to pay more for its borrowing. Interest rates will rise. This rebalancing could cause severe dislocations in our economy.

We can steer clear of some of these costs. But we can do so only if we consider them now and do what we can to secure our economy from sudden and difficult adjustments later.

Where do we look for solutions?

America must increase its own national savings. We must finance more of our own investment.

We must create a reliable and stable pool of investment funding to fulfill our investment needs. This saving will also make us more profitable in the long run. We will gain the returns on capital investment here. We will not send them abroad.

We will continue to welcome foreign savings to our shores. But

America will have a higher stock of self-financed investment.

How do we do this? First, we must plug the biggest leak in our national savings pool: the federal budget deficit. The federal government continues to run huge deficits. Prior to 2003, the record deficit was $290 billion in 1992. But in 2003, the government set a new record deficit of $375 billion dollars. In 2004, the government set an even higher record deficit of $412 billion dollars. This year, the government is projected to run a deficit of more than $300 billion dollars. The last 3 years have produced the 3 largest deficits in the Nation's history.

Now with the immense costs of Hurricane Katrina, Goldman Sachs predicts that the deficits for the next 2 years will once again be about $400 billion. That would be 2 more years of deficits once again approaching record levels. Each year's deficit adds up.

These deficits increase our national debt. At the end of fiscal year 2001, the government's debt held by the public was $3.3 trillion. By the end of this month, economists project that debt held by the public will rise to $4.6 trillion. This would be an increase of 40 percent in just 4 years.

There are times when deficits are appropriate. If the economy is in a recession, net borrowing by the federal government can help to restore prosperity and job growth. But with the economy humming along now, huge deficits no longer serve Americans well. Instead, these large deficits divert domestic and international savings away from productive economic sectors. These productive sectors need savings to invest in innovative capital goods that can boost productivity, help our economy to grow, and improve our Nation's living standards.

the Eisenhower Executive Office Building
home of the
Office of Management and Budget

We must be honest about our spending needs today and in the future. Budget forecasts for the near-term that neglect the costs of war and of neglect upcoming reductions in revenues — such as reform of the alternative minimum tax — serve no one but cynical political strategists.

And the retirement of the baby boom generation beginning in 2008 will put enormous long-term pressure on the federal budget through increased Social Security, Medicaid, and Medicare spending. We must own up to these long-run problems.

Once we define the problems honestly, we must find ways to solve them.

First, we must restore the pay-as-you-go rules for both entitlement spending and tax cuts. We are stuck in a hole. We have to stop digging. We must pay for any new spending or tax cuts that we enact.

Until 2003, tough pay-as-you-go rules governed the Congressional budget process. But these rules expired in 2003. A virtually meaningless alternative has taken their place. We must restore strong and meaningful pay-go rules.

Second, we must reduce the annual tax gap. As much as $350 billion of taxes went unpaid in 2001. Since then, the government has collected only $55 billion of that 2001 shortfall. These huge gaps occur every year. We cannot afford this tax gap.

Third, we must eliminate wasteful and unnecessary spending. For example, the Inspector General at the Department of Health and Human Services recently discovered that the government had paid nearly $12 million in benefits to recipients in Florida who had already died.

Fourth, we must eliminate wasteful and unfair tax breaks such as abusive tax shelters and corporate tax loopholes.

Finally, we must slow the growth in health-care costs. We cannot rein in budget deficits without controlling the growth in health-care costs. The private sector cannot sustain its current health-care cost growth. And neither can the public sector. We cannot clamp down on health-care costs in the public sector alone. Providers will just shift health-care costs to the private sector. Fortunately, solutions that contain private sector health-care costs will likely also help contain public sector health-care costs, as well.

Taking these five steps would go a long way towards reducing Federal budget deficits and increasing national savings.

Increasing private savings is more complicated. We cannot adopt pay-as-you-go rules for families. Instead, we have to provide families with the tools that they need to develop their own growth plan.

The first tool is financial education. Too few Americans know how to develop a family budget. And too few know how to assess the risk of an adjustable rate mortgage when interest rates are rising.

We need to provide our children, and their parents and grandparents, with the tools that they need to make good financial decisions — to have more savings and less debt.

Programs such as "Stash Your Cash" — a program to teach young people the basics of finance, saving, and investing — are a good start.

As part of "Stash Your Cash," this summer, 15 pigs — each one 4 feet tall and 750 pounds — appeared in the streets of Washington. And it was not just another political statement.

The colorful animals on street corners were oversized piggy banks. Local middle school students and artists painted each one.

"Stash Your Cash" gets to kids early. It teaches them financial vocabulary, how to create a budget, and how and why they should save for the future. It teaches middle-school students that creating a budget helps them understand where their money goes, ensures that they do not spend more than they earn, finds uses for money to achieve goals, and helps them set aside money for the future.

We can all benefit from these lessons. Savings is vital for our children's and our families' financial future. And what is vital for our families is vital for our country.

Second, we need to make it easier to save.

The most successful savings programs are payroll-deduction savings through employer-sponsored 401(k) plans. We can make these programs even more successful by encouraging employers to enroll eligible employees automatically. Employees would opt out of saving instead of opting in. Without automatic enrollment, just two-thirds of eligible employees contribute to a 401(k) plan. With automatic enrollment, participation jumps to more than 90 percent. The largest increases are among younger and lower-income employees.

Only half of private sector workers have a 401(k) or similar plan available to them. We need to bring payroll-deduction retirement savings to the other half.

Who is that other half? Part-time workers, those who put in less than 1,000 hours a year, do not have to be covered by 401(k) plans. Small employers are less likely to offer 401(k) plans, or similar arrangements, to their workers. And lower-income workers are less likely to have a plan available than moderate- and higher-income workers.

We have a voluntary pension system. We should not change that. But we can make savings opportunities available to more workers without forcing employers to provide more benefits.

Third, we need to make incentives for saving more progressive. Like many tax incentives, our current savings incentives give more bang-for-the-buck to those in the higher tax brackets. Our income taxes go to just the opposite.

In 2001, we took an important step toward fairness by creating the Saver's Credit. The Saver's Credit helps low-to-moderate-income taxpayers to save by providing a credit of up to half of the first $2,000 that they contribute to an IRA or 401(k) plan. More than 5 million taxpayers claimed this credit in 2001. It works. But it will expire after 2006. We must extend it and we must expand it to cover those with no income tax liability.

In ancient times, people viewed the toil of farming as a curse. The ancient text tells how when man left the Garden of Eden, he heard God say:

> "Cursed be the ground because of you;
> By toil shall you eat of it
> All the days of your life:
> By the sweat of your brow
> Shall you get bread to eat,
> Until you return to the ground —
> For from it you were taken."

But now, increased investment, capital, and productivity have made it so that we may hear the blessing with which Moses blessed the children of Israel on the plains of Moab, across the River Jordan:

Michelangelo's Moses

> "The LORD will give you abounding prosperity in . . . the offspring of your cattle, and the produce of your soil in the land that the LORD swore to your fathers to assign to you. The LORD will open for

> you His bounteous store, the heavens, to provide rain for your land in season and to bless all your undertakings. You will be creditor to many nations, but debtor to none."

From ancient times, the sages recognized that the terms "prosperity" and "debtor" rarely apply to the same country.

Let us return to being a country whose saving provides the seed corn that brings those blessings of "abounding prosperity."

Let us seek the blessings of being "creditor to many nations, but debtor to none."

And let us do the work that we need to do to see that "[t]he LORD will [continue] . . . to bless all [the] undertakings" of this great Land.

151 CONG. REC. S10,697-99 (daily ed. Sept. 29, 2005).

Energy Competitiveness

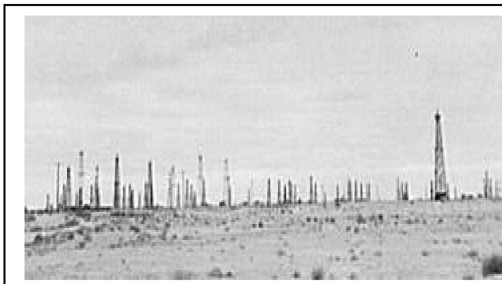
Originally delivered October 17, 2005

In the 12th century, in the Bay of Biscay, Basque sailors began to hunt right whales. The Basques melted the whales' blubber into oil to fuel their lamps. When the whales died out in Spanish waters, the Basques sailed north to Iceland pursuing the source of their lamp oil. By the 16th century, whalers hunted extensively in Icelandic waters to find the fuel for light.

As our former colleague Phil Gramm wrote in 1973, from American colonial times through the middle of the 19th century, whale oil provided the major source of artificial lighting in America and Europe. But in the middle of the 19th century, America faced an energy crisis. The price of whale oil was rising. From a low of 23 cents a gallon in 1832, it rose to $1.45 a gallon in 1865.

But then in 1859, people discovered petroleum oil in western Pennsylvania. The rising price of whale oil encouraged an engineer to invent a process to convert that western Pennsylvania black oil into a new fuel, kerosene.

The whale oil era was ending, and the petroleum era began.



1938 California oil field

One hundred fifty years later, at the turn of the 21st century, gasoline prices are rising. As late as December 2002, Montana gasoline prices averaged a little more than $1.30 a gallon. On September 5 of this year, the average price hit about $2.90 a gallon.

In the wake of Hurricane Katrina's disruption of oil refineries, many Montanans feel gouged by sky-high gasoline and diesel prices. High gas prices hit low-income Montanans particularly hard. Peggy Grimes, director of the Montana Food Bank Network, says: "[P]eople are going without food more often and coming to visit local food pantries more often." Just think of people having to make choices such as that.

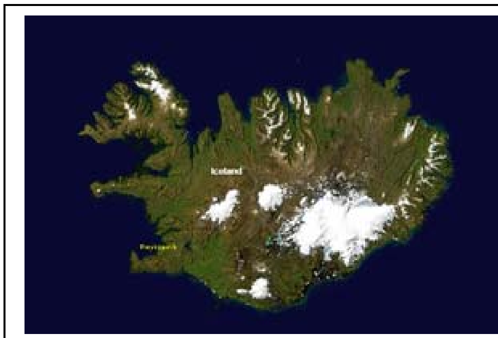
Rising natural gas and fuel oil prices have many Montanans concerned about how they will heat their homes this winter. And rising fertilizer costs will hit many Montana farmers hard.

In the short term, petroleum price increases are forcing painful adjustments. In the medium term, we need to invest in conservation, weatherization, and upgrading the efficiency of cars, appliances, and machines that use energy. And in the long term, we need to adjust intelligently to higher petroleum costs, systematically and purposefully diversifying our energy sources.

In the middle of the 19th century, America led the way to the next energy era, leaving the whale oil era behind. Now, at the beginning of the 21st century, America must once again lead the way to another energy era, an era that severs the world's dependence on Middle Eastern oil. Domestic oil and gas production will remain a critical part of our energy security for some time. But to lead the world to a new era, we will have to make major investments in new innovative forms and uses of energy.

Once again, we have cause to look again across the waters to Iceland.

Iceland is leaving the petroleum era behind. Iceland is entering the hydrogen era. The government has announced its intention to become a hydrogen-based economy by 2030.



Iceland

In Iceland, icy water cascades down from massive glaciers. And in Iceland, boiling water bubbles up from just beneath the surface. Iceland already harnesses these renewable resources to generate virtually all of its electricity and heating from hydroelectric and geothermal sources.

But with no fossil fuel resources, Iceland relies heavily on imported oil to power cars, buses, and the fishing trawlers that provide 70 percent of Iceland's income.

To break that dependency, and to reduce greenhouse gases, Iceland is turning to fuel cells. Fuel cells use hydrogen and oxygen to generate electricity to power engines. And the vehicles powered by those engines emit only water as exhaust.

Iceland plans to use its cheap electricity to split water — H_2O — into its component parts — hydrogen and oxygen. Iceland uses the process of electrolysis. Electrolysis runs an electric current through bonded elements to separate the elements.

Iceland's capital Reykjavik intends to replace its entire fleet of 80 buses with fuel cell buses. Next, Iceland hopes to convert private cars. And after that, Iceland hopes to switch the huge Icelandic fishing trawlers to hydrogen power.

General Motors fuel cell powered car

Iceland thus hopes to convert its renewable hydroelectric and geothermal energy into a form that can power its transportation system, and, in the process, Iceland hopes to slash emissions and end its dependence on fossil fuels.

Maria Maack, the project director of Iceland New Energy, explained:

> "We are so reliant on our fisheries, and the fisheries are totally dependent on oil. So we have a chance to be quite independent of this. . . . [I]t's being independent and relying on ourselves to continue the way we live."

Bragi Arnason, a chemistry professor at the University of Iceland and a leader in hydrogen technology, beamed: "I think we could be a pilot country, giving a vision of the world to come."

This is my sixth address to the Senate on competitiveness. Starting this summer, I spoke on competitiveness generally. I spoke on the role of education in meeting that challenge so we Americans can be more competitive in the future. Education at all levels — K through 12, continuing education, higher education, technology schools — is the long-term key for America to remain the biggest and strongest economic power in the world, given the challenges of China, India, and other countries that are taking advantage of the Internet and other technologies which are making other countries more competitive than they have been in the past.

I spoke on the role of trade, how we have to be more aggressive in trade to market our products overseas better and knock down trade barriers. I spoke on the role of controlling health-care costs which make us less competitive worldwide. Our health-care costs per capita are twice that of the next expensive country, and I doubt we are twice as healthy. I spoke on the role of capital and savings. We are not a net savings country; we are basically a net deficit country. Other countries save so much more than we save. That means capital that is available to develop new technologies, both technical technologies and human technologies.

Today I wish to speak about the role of energy in competitiveness. If we are to be a strong country and meet the foreign challenge, clearly, we need to be much more independent in energy production.

Iceland's Professor Arnason is not alone in his vision of a hydrogen future. At the University of Montana, Missoula College of Technology, Dean Paul Williamson has a similar vision. He is working to use hydrogen as the focal point to build a state-of-the-art college of technology and futures park. He wants to create something that folks in Geneva will get on a plane to come to America to see. So we are not always going overseas to see what they are doing, they will come to see what we are doing. It is a laboratory of excellence, to serve as a gateway to alternative technology in a much larger community.

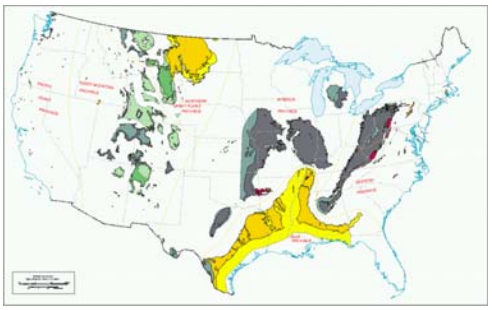
Dean Williamson's vision is to marry Montana's resource base with the best trained workforce, and he is working to make the Missoula College of Technology a focal point to transform that vision into reality. Missoula College of Technology is creating the educational venue, and with it, they will match a business gateway to help to bring business and industry to the area, creating networks of microenterprises.

All around Montana and the Nation, people are working on renewable and alternative energy research and industry. Rising energy prices, combined with smart Government incentives, have spurred innovation, and we are already beginning to reap the benefits.

I have already talked about one example — hydrogen. Another example is coal conversion.

Coal gasification can be used to help produce hydrogen, and coal gasification can also be used to produce fertilizers, other chemicals, and diesel fuel. Our State's Governor, Brian Schweitzer, and I have targeted a process to turn Montana's coal into clean-burning diesel and jet fuel. The process is called Fischer-Tropsch, or F-T, for the German scientists who developed it in the 1920s.

Energy technology firms in America and elsewhere are fine-tuning F-T to make it even cleaner. F-T fuels are relatively clean. The process can recover sulfur, mercury, and arsenic as marketable byproducts.



America's coal regions

Jack Holmes, president of Syntroleum, extols the cleanliness of F-T diesel. He says it can be burned straight or blended with regular diesel fuel. He says: "It's like a single-malt scotch." Not quite, but we get the drift of it.

Governor Schweitzer calculates: "It would cost less than $1 per gallon to make that diesel."

The break-even point for F-T comes when crude oil sells for more than $35 a barrel. These days, that looks like a pretty safe bet.

To develop processes such as these, in the just-passed energy bill, I worked to include an investment tax credit for the coal gasification technology used by the F-T process. In the highway bill, I worked to include a 50-cent-a-gallon tax credit for companies that generate fuel using an updated version of the F-T process. I also included a Federal loan guarantee so that companies can finance these capital investments.

We have a real opportunity here. The coal-to-fuel technology can be a win for everybody if we do it right and if we make sure that any facility uses the cleanest and most advanced technology available — again, if they do it right. It will help lessen our dependence on foreign sources of energy while creating thousands of jobs in America. I am proud to join our Governor in trying to bring a new investment in this technology to Montana and to the Nation.

A third example is renewable and alternative energy in the form of wind energy. They may call Chicago "the windy city," but many say Great Falls, MT, is the windiest city in America. "Wind is like water flowing out of the mountains," says Bob Quinn, a farmer from Big Sandy, MT. Big Sandy is a little bit east of what we call the eastern front. It is on the edge of the Rocky Mountains and the Continental Divide. The eastern front falls off like a big cliff. That is why we call it the front. By the time it gets to Big Sandy, which is not too far away, the wind flows as water does flowing out of the mountains.

Closer to the mountains, the wind is turbulent, but across the prairie, it flows uniformly like a huge river, and that makes it attractive as a wind farm site.

Five years ago, Bob traveled to Germany to research his ancestry. He visited a distant cousin who had developed a wind project and was contemplating others in Chile or South Africa.

wind turbines in Neuenkirchen, Germany

Bob asked him, “Why are you thinking about going clear to Chile to build a wind farm when you can buy one in Montana, where we have this river of wind?” The cousin reconsidered and chose Montana. Along with another partner and two cousins, they formed WindPark Solutions America and began looking for sites.

They settled on Judith Gap, a town of about 150 people in central Montana. Eventually, WindPark sold the project to Invenergy Wind, a Chicago-based company that will own and operate the project. Invenergy is now building a $150 million facility, the Judith Gap wind farm.

Billings resident Ludlow Howe manages the construction. His work crews erected 130 turbines in two phases. The wind farm will cover an area about 8 miles long and 5 miles wide, straddling Highway 191 between Judith Gap and Harlowton.

So far, workers have assembled at least 27 towers, colored white-gray to blend with the sky. Each tower is 260 feet tall. On top of each tower sits a generator box the size of a motor home. Seven-ton rotors with 122-foot blades sweep up to 387 feet into the air. Each turbine weighs more than 400,000 pounds. A system of 140 bolts secures each tower to its base.

The rotors come from Houston, the turbines come from North Carolina, and tower sections come from China, Korea, and Fargo, ND.

Ludlow says of the wind turbines: “They will actually seek out the wind at 9 miles per hour. They will pitch their blades, just like a sailboat. They will trim their sails.”

The plant should be in full operation soon. NorthWestern Energy will buy power from the 150-megawatt wind farm for customers in central and western Montana.

Wheatland County Commissioner Tom Bennett says admiringly: “It’s environmentally friendly. It’s renewable. It’s something we’ll have forever. You tell me any negative on this. We couldn’t find any.”

A fourth example of renewable and alternative energy is biomass and ethanol.

Energy competitiveness can also come from a clear commitment to the development of biomass and ethanol-based fuels. Currently, most alternative fuels are not profitable without a Federal subsidy, but if we continue to support the industry until it reaches profitability, much as with wind power, it will become a self-sustaining model in its own right.

A Pentagon-sponsored study called "Winning the Oil Endgame" projects that biomass and ethanol-based fuels can create 750,000 new jobs. This effort could revitalize rural and agricultural areas of America. It could add tens of billions of dollars to farmers' revenue every year.

Rural America is at the center of the next age of domestic energy production. Rather than spending $50 billion a year overseas to buy oil from foreign countries, we could be buying into rural America. We must continue to support these new industries.

The man who headed the research team that created the hybrid Toyota Prius tells his young researchers:

> "Forget about concentrating on such things as trivial increments in performance or cost cutting. If you restrict yourself to refining the prevailing paradigm, you will never come up with an earth-shattering idea or technology."

That is the guy who heads the team that formed the new hybrid Prius, which is doing very well.

America needs to follow that sage advice. We need to move beyond trivial increments in refining the prevailing petroleum paradigm. We need to move on to the next earth-shattering ideas and technologies.

During World War II, America created the Manhattan Project in an effort to develop the first nuclear weapons and win the war against fascism. That important effort involved sites at Hanford, Los Alamos, Oak Ridge, and more than 30 locations in all. By 1945, the project employed more than 130,000 people. It cost nearly $2 billion, or $20 billion in 2004 dollars — that is, in current dollars.

Today, America needs a new Manhattan Project. As Tom Friedman put it in his book, *The World is Flat*, we need "a crash program to . . . develop clean alternative energies."

On May 25, 1961, President John F. Kennedy told the Congress:

> "I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to the Earth."

John F. Kennedy

Don't you remember that? That was a real challenge, an important and necessary challenge. It lifted us up, helped us develop technologies, and made America feel good about itself.

Today, America needs a new challenge. As Friedman puts it, we need "a similar legacy project . . . a crash program for alternative energy and conservation to make America energy-independent in 10 years."

Developing new energy sources in America will contribute to energy independence. Energy independence will contribute to national security, and energy independence will contribute to the stability of energy sources, allowing business to go forward without the jolts of supply disruptions. The jolts of supply disruptions are a huge additional part of the problem of dependence.

As well, developing new energy sources in America has the potential to turn renewable and alternative energy development into comparative advantage for America, to gain an advantage for America. If we can figure out how to make clean, cheap energy before other countries, then those other countries will pay American companies to build energy production there.

Because of our early investments in the 1970s, America had an opportunity to become the world leader of the fossil alternative energy. With lower energy prices and decreased Federal support, however, our advantage dwindled.

Countries such as Denmark and Germany built on our initial research. Denmark and Germany have become the world leaders in wind generation. Danish companies are now the number-one provider of wind services in America, outnumbering even American companies.

The Danish became world leaders in wind power production by first growing the industry at home. According to the Danish Wind Industry Association, the Danish wind industry has created 20,000 new jobs. It exports 90 percent of the wind turbines it creates, and it supplies 20 percent of Denmark's electricity.

This is all because Denmark was the second country to reach the critical production level of 100 megawatts a year in 1987. That was 4 years after America. But we decided to end wind power subsidies for a time. That put them ahead.

There is a silver lining, however. America still has the resources to create technologies that could be turned into comparative advantages. Because of our wind power penetration, we are still fairly advanced compared to other nations. With a concerted effort for research, development, and production of wind generation — or solar power or other energy programs that we have been working on — we could easily become the world leaders in those industries if we put our mind and effort to it.

America has underinvested in research and development. This happens because firms invest in R&D based on the private return to their firms alone.

The social rate of return to investment, however, exceeds the private return. As economists put it, positive externalities exist. These external benefits come from knowledge spillovers, the creation of public goods, and economies of scale. The existence of these externalities — an awful word, but it is so powerful — counsels that the Government needs to subsidize R&D until the private rate of return matches the social rate of return. Traditionally, governments have used a few different policy tools to subsidize R&D: the first as government research grants to industry and educational institutions, and, second, to provide tax incentives for R&D. A third tool is the increasingly popular and effective technique of offering prizes to spur innovation.

For example, in 1714, the British Government offered the longitude prize, a prize of £20,000, for precise determination of a ship's longitude. John Harrison solved the problem using precision clocks and eventually won the prize.

SpaceShipOne

A year ago, SpaceShipOne won the Ansari X Prize competition. The X Prize Foundation offered $10 million to the first private venture to send a privately funded craft into space twice in a week.

The Clay Mathematics Institute of Cambridge, MA, offers a $1 million prize each for the solutions of seven Prize problems. The problems are classic mathematical questions that have resisted solution over the years.

Prizes like these involve little risk for the Government. And these prizes provide a very efficient, market-based approach to subsidy. For every success, there will be numerous failures. It is extremely difficult to predict who the winner will be. America needs to invest in a basket of potential technologies.

Jules Verne

In 1874, it was a dream of science fiction: Jules Verne envisaged a world in which water would replace coal as the fuel of the future.

Now Icelanders believe they can do just that; they can turn that dream into science fact. And they have taken steps to create the world's first hydrogen society.

In old Icelandic sagas, whales were either good or evil. The evil whales swallowed boats and men. Just talking about such whales while on a boat would bring bad luck.

a blue whale

In contrast, the blue whale protected both boats and men. Blue whales would scare away all the evil whales. According to old Icelandic sagas, blue whales would warn fishermen by circling a boat three times in a row.

Sometimes energy sources can also appear to be good or bad. With hydrogen, Iceland hopes it has found the energy equivalent of a good blue whale.

Certainly, with the 1970s oil shocks and now the Katrina-related price spikes, we have been warned at least three times in a row to seek out safer seas.

In the 19th century, America plotted the course to a more productive energy future. In this new century, let us see that America once again leads the way.

Let us once again chart a course to more secure energy waters. And let us once again explore the uncharted oceans of possibilities and bring the energy that we need safely home.

151 Cong. Rec. S11,411-14 (daily ed. Oct. 17, 2005).

Immigration and Competitiveness

Originally delivered November 16, 2005

In 1882, an Irish immigrant named Marcus Daly set off an explosion that shook the world. It happened 300 feet under the ground, near Warm Springs Creek, 26 miles west of Butte, MT. When the dust settled, Daly saw before him the shiny ore of the largest copper deposit ever known.

The rich copper vein transformed the American economy. It made America the world's largest copper exporter. And it inaugurated an economic boom for my home State that lasted for decades. It also enriched many parts of America.

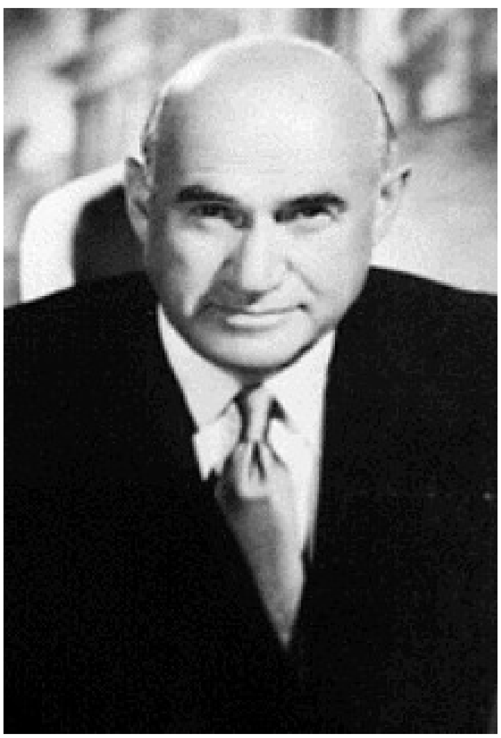
Thousands of immigrants made the boom happen. They came from Ireland and Italy, Canada and Scandinavia, Serbia and Croatia, Greece and Syria. They came to America to find work in the new mining town, christened Anaconda. By 1900, immigrants made up 40 percent of Anaconda's population.

These new Americans formed the backbone of the mining economy. And their descendants have woven the colorful fabric of Montana.

copper

Immigrants helped build the American economy. In the 1850s, hundreds of thousands of young Chinese men helped construct the Transcontinental Railroad. At the beginning in the 1870s, Basque shepherd immigrants helped shape the western ranching economy. Beginning in the 1890s, hundreds of thousands of Norwegian farmers lay the foundations of a competitive farming economy in Wisconsin, Iowa, Minnesota, and the Dakota territories. And in the first decades of the 20th century, more than 100,000 Jewish immigrants created New York City's famous garment industry.

Immigrant entrepreneurs and innovators revolutionized the American economy. Scottish-born industrialist Andrew Carnegie transformed the American steel industry and consolidated the Nation's railroads. Hungarian-born Joseph Pulitzer produced a legacy in newsprint. Polish-born producer Samuel Goldwyn left his mark on film.



Samuel Goldwyn

Once-foreign names became American household brands. Russian-born Max Factor made makeup. Bavarian-born Levi Strauss manufactured clothes. Hessian-born Adolphus Busch brewed beer.

Levi Strauss

And today, immigrant innovators still populate the cutting edge. Moscow-born Sergey Brin helped found Google. Taiwan-born Jerry Yang founded Yahoo. French-born Pierre Omidyar founded eBay. And Hungarian-born Andy Grove founded Intel.

America remains a nation of immigrants. More than 33 million people living in America were born abroad. More than 9 million came to our shores just between 1990 and 2000.

Since colonial times, immigrants have been vital to the American economy. Their skills and their labor have made our companies, our industries, and our economy more competitive.

Some immigrants come with little more than their strength and ambition. They become our economy's machine operators, factory workers, farm laborers, and service workers.

But many come with master's and doctorate degrees. They work in research laboratories and universities. They sharpen our economy's cutting edge.

This is my seventh address to the Senate on economic competitiveness. Since summer, I have highlighted the importance to competitiveness of education, international trade, health-care, national savings, and energy — all components we must focus on to make our country more competitive so we have better high-paying jobs and more paying jobs for more Americans. Today, I speak about immigration and economic competitiveness.

Immigrants make our economy more competitive in at least four ways.

First, immigrants provide labor. Marcus Daly needed workers to dig his Montana copper mine. Similarly, today's booming industries require global talent.

Without foreign-born workers, the largest economic expansion in our Nation's history would not have been possible. In the boom years of the 1990s, the labor force grew by nearly 17 million workers. Nearly 40 percent of them were born abroad. Most of these immigrants came when unemployment was at record lows. They filled 4 out of 10 job vacancies, often in regions short on workers, and often in jobs that natives had no desire to fill. Had these immigrants not lent us their strength, our economy would surely have faltered.

Second, immigrants help balance the budget. Tally up taxpayer-funded benefits to immigrants — education, health-care, social security — and match those costs against what immigrants pay in State, local, and Federal taxes. On balance, each immigrant provides a net benefit to the American economy of about $90,000 in taxes over a lifetime. Overall, immigrants contribute $15 billion to our economy every year.

And immigrants will make an important fiscal contribution as the baby boom generation retires. In just 5 years, the number of Americans approaching retirement will increase by nearly half. Most new foreign-born immigrants, on the other hand, are between 10 and 39 years old. And immigrants are likely to have more children than the U.S.-born population.

These younger workers will help fund the coming Social Security, Medicare, and Medicaid benefit payments. Immigrants bolster the deteriorating ratio of workers to retirees. Immigrants provide a shiny vein of ore in a graying economy.

Third, immigrants push the envelope of innovation. Foreign students earn more than a quarter of the Nation's science and engineering degrees. They earn more than a third of science and engineering doctorates. Most of those are in computer sciences and electrical engineering. Foreign students account for as many as four out of five doctoral students in a number of highly-ranked universities. And foreign students bring $13 billion a year to our economy in tuition and fees.

Foreign students' minds help sharpen our economy's cutting edge. Foreign student researchers support work on new medicines, software, and other innovations. Universities patent this research. A 10 percent increase in the number of foreign graduate students would increase patents granted by more than 7 percent.

Patents mean new inventions. Inventions mean new products. And new products mean new profits and new jobs.

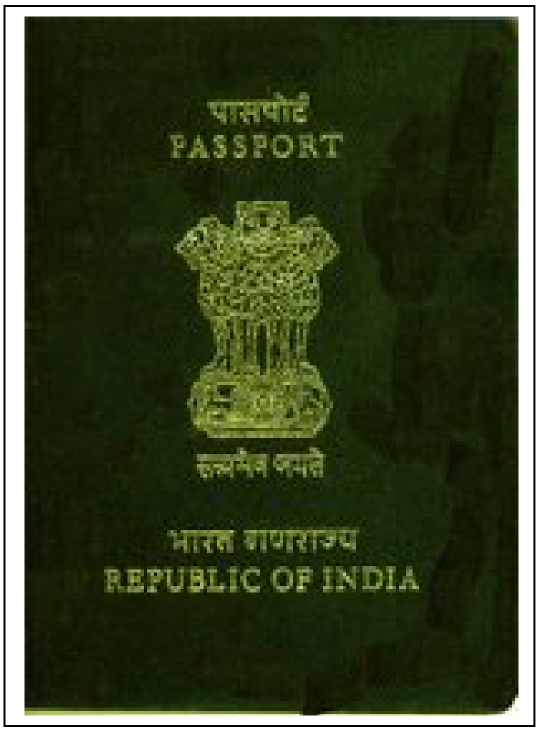
Just as important, nearly three-quarters of highly-skilled students stay in America. Instead of taking their skills home and using them to compete with us, they join highly specialized professions in research and academia. They contribute their knowledge to our economy.

At IBM Research and Intel, for example, foreign nationals make up about a third of high-level researchers. At the National Institutes of Health, foreign-born workers make up about half of researchers. In America's top immigration States, foreign-born workers account for 40 percent of teachers and more than a quarter of physicians, chemists, and economists.

Fourth, immigrants drive entrepreneurship. Entrepreneurship is the irreplaceable genius that sparks economic growth. For every famous immigrant entrepreneur like Hungarian-born financier George Soros or Belgian-born designer Liz Claiborne, legions of other immigrants push the limits of the economy, or simply provide a neighborhood service.

George Soros

For more than a century, immigrants have been more likely than native-born Americans to be self-employed entrepreneurs. Since the 1970s, immigrants have helped reverse a national decline in self-employment. Immigrant-run businesses create jobs, tax revenues, and growth. Even small neighborhood businesses can revitalize entire neighborhoods. And small businesses are the primary driver of new jobs.



Immigrants also swell the ranks of high-technology entrepreneurs. Most of the foreign-born scientists and engineers in Silicon Valley have helped found or run a start-up company. Sixty percent of Indian scientists there have participated in start-ups. And fully three-quarters of Indians and most of the Chinese scientists there have plans to start a business. These entrepreneurs are thinking about tomorrow's economy today.

Immigrants devote their labor. They boost our balance sheets. They drive innovation. And they energize entrepreneurship. Immigrants are vital to our economic competitiveness.

Unfortunately, America is not welcoming global talent and labor. In some cases, we have pulled in welcome mat.

State Department visa procedures and security checks intended to keep out terrorists are instead keeping out talent. In the post-September 11 world, America must vigilantly protect its borders. But we must also strike a balance between this vigilance and economic health.

Look at the case of foreign students who want to study at American universities. In 2003, foreign applications to American engineering doctoral programs fell by more than a third — with Chinese applications dropping nearly in half. Despite considerable efforts to reverse this trend, total foreign graduate school applications declined further last year, by double digits in some cases.

The decline in applications is not an anomaly. It is a clear trend. At the same time, our economic rivals are actively attracting the world's brightest. Canada doubled its foreign student enrollment last year. And South Korea will triple its foreign student enrollment by 2010.

We unfortunately have also closed the door on talented workers who drive our companies' competitiveness. Our leading high-tech companies — companies like Intel, Microsoft, and Hewlett-Packard — are imploring Congress to raise the cap for visas for highly-skilled workers. These visas are known as H-1B visas. They are capped at 65,000. That limit is so out of line with demand that we reached the 2005 cap months before 2005 began.

Today's visa and immigration restrictions also make it difficult for major American companies to employ and train their workforce.

Take this example: A global American entertainment company with headquarters in New York hired Indian managers to run its Bangalore office. The company wanted to train these new hires to company standards, as it does with all employees. The company wanted to send the new hires to New York to receive this training, as it does with all management. The company applied for visas on behalf of its soon-to-be Indian office managers.

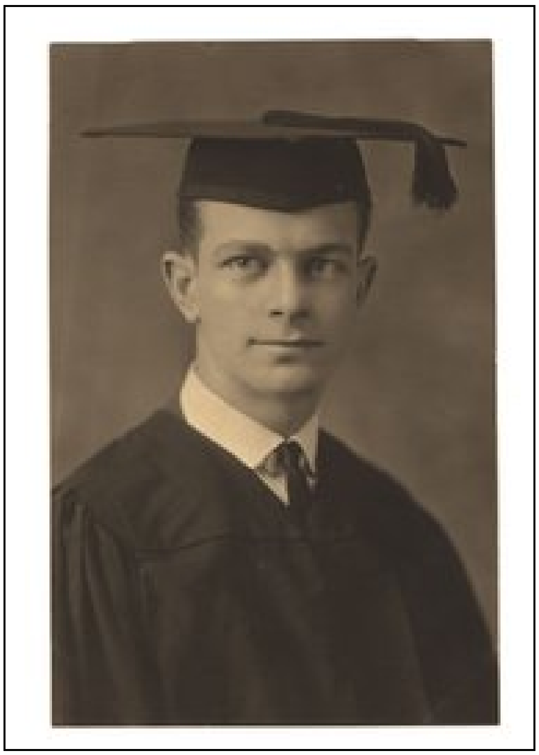
What happened? The company filed the paperwork. Months came. Months went. It took 3 months just to get an appointment at the U.S. Embassy. Delays continued. Patience wore thin. Costs mounted, with untrained managers on the payroll. And the company finally gave up.

The company applied for visas to Ireland, where the company had its European branch. The visas came in 4 days. The company trained these new managers at the company's facilities in Ireland, and then sent them back to India to work. This created jobs in Ireland, because the company set up a training program there instead of using existing trainers in America.

This is no way to do business. We are shooting ourselves in the foot.

We must lift the cap on H-1B visas. We do not have a centrally planned economy. The American Government does not tell companies how many workers they need each year. But the cap has that effect, the effect of a centrally planned economy. That is wrong. Let us listen to business leaders and help them maintain and improve their competitiveness. When our premier global companies implore us to lift the H-1B visa cap or risk hampering their growth, the time for politics is over.

We must simplify temporary entry for foreign workers who need to come to America to help our companies succeed. If we wish to remain a cutting-edge economy, we can no longer obstruct companies from training their overseas employees, participating in meetings and conferences, or traveling to trade shows. Our companies have global markets, global supply chains, and global strategies. We need a global workforce.



Our current commitment of 65,000 H-1B visas each year is outdated. It is outmoded and out of touch with today's needs. We should make a bold commitment to expand that cap. Such a commitment would allow us to lock in similar commitments from our trading partners and enhance exports and American services.

We must actively encourage talented foreign students to study, do research, and innovate at American universities and American research institutions. Visa renewals during multiyear studies need to be routine. These renewals should not require all students to first return to their home countries.

For the most exceptional of these students, who have earned advanced science degrees at American universities, we need a simpler process to obtain permanent residence. These are talented, highly educated individuals, who are in a position to keep our economy competitive. If we do not welcome them into our economy, guess what? China, India, Europe, or Japan will welcome them into theirs.

Three weeks ago, the National Park Service designated the old mining town of Anaconda, MT, as a national historic landmark. Anaconda's mining boom times are now preserved as part of our Nation's history. But Marcus Daly's explosion — when he found all that copper ore — continues to reverberate through the American economy today.

Let us not stamp out the spark of future booms. Let us, rather, welcome the labor, the innovation, and the entrepreneurship of our new immigrants. Let us ensure for ourselves and for our children the shining ore of boom times to come.

151 CONG. REC. S12,934-36 (daily ed. Nov. 16, 2005).

A New American Renaissance

Originally delivered December 13, 2005

Toward the end of the 14th century, Emperor Manuel II Palaeologus ruled a waning Byzantine Empire. Looking across the Bosporus, he saw a growing threat from the Moslem Ottoman Turks. In 1390, he sent an embassy up the Adriatic Sea to Venice to build alliances. And to head the mission, he named the 35-year-old Manuel Chrysoloras.

Although his embassy to Venice did not prosper, Chrysoloras' reputation did. And in 1396, the chancellor of the University of Florence invited him there to teach Greek. The chancellor wrote: "[W]e firmly believe that both Greeks and Latins have always taken learning to a higher level by extending it to each other's literature." Chrysoloras accepted.

But no one in Italy had studied Greek for 700 years. Chrysoloras began. He taught Greek in Florence, Bologna, Venice, and Rome. He translated Homer and Plato. He wrote the first basic Greek grammar in Western Europe.

Florence

As the early renaissance poet Dante Alighieri wrote in The Divine Comedy, "A great flame follows a little spark." The flame of learning spread through the rest of Europe, reconnecting the West with classical antiquity, experimentalism, and the desire to live well.

Chrysoloras and scholars like him helped to begin the scientific revolution and artistic transformation that would become known as the Italian Renaissance. Europe emerged from the backwater. Commerce and exploration burst forth. The Modern Age began.

Renaissance historian Matteo Palmieri exhorted a fellow Italian of the mid 15th century to "[t]hank God that it has been permitted to him to be born in this new age, so full of hope and promise, which already rejoices in a greater array of nobly-gifted souls than the world has seen in the thousand years that have preceded it."

With the Renaissance, Western Europe began its domination of the world economy. The West has held this power so long that it is easy — especially for us here in the West — to take it for granted. But it need not have been so.

In the century leading up to the year 1000, Moorish Spain could claim a far more advanced civilization than that of Christian Italy. Cordoba's streets were paved and lit. Cordoba had 300 public baths and 70 libraries. Cordoba's great central library alone held 400,000 books — more than all of France. The Arab postal service delivered regular mail as far as India. Arab civilization was internally creative. And Arab thinkers of the time were open to Persian and Indian science, as well.

Cordoba

In the 12th century, an English scholar named Adelard of Bath traveled through the Islamic lands of Spain, North Africa, and Asia Minor. Adelard reported: "The further south you go, the more they know. They know how to think."

And Adelard carried back from the south a way of thinking. He said: "Although man is not armed by nature, nor is naturally swiftest in flight, yet he has something better by far — reason."

The advanced Moorish state suffered civil conflict and fell to the less-developed Christian states of Europe. Finally, on January 2, 1492, the leader of the last Muslim stronghold in Granada surrendered to armies of a resurgent, newly-united Christian Spain. The remaining Spanish Muslims were forced to leave Spain or convert to Christianity.

At the end of the first millennium, Arab Spain had the most advanced science and economy of its day. But in the centuries that followed, it fell to a newly-emergent Western Europe.

At the end of the first millennium, Western Europe slumbered in its Dark Ages. But in the next centuries, it emerged into the Renaissance.

We here today inherit the legacy of the Italian Renaissance. We have absorbed the learning of the Arab Caliphates. And we inhabit the land made known to Europeans by another voyage of 1492.

the Mezquita, Cordoba

At the end of the second millennium, America has the most advanced science and economy of our day. But we cannot take that leadership for granted.

In the centuries ahead, if America wishes to remain the most advanced economy of our day, we will need to create a new American renaissance.

We need this new American renaissance, because leadership does not come from continuing to do what we do already. Smart people in China and India and around the globe are quickly learning how to do what we do now. And people in China and India and around the globe will be able to do it more cheaply.

Instead, leadership comes from constant innovation. Leadership comes from rapidly adjusting what we do to what the market demands. And leadership comes from serving the customer. Fortunately, these are characteristics at which Americans excel.

This is my eighth Senate floor statement this year on competitiveness. I began in June with a general statement on competitiveness and America's place in the world. In June, I also spoke of education and competitiveness. In July, I spoke of trade and competitiveness and health care and competitiveness. In September, I spoke of savings and competitiveness. In October, I spoke of energy and competitiveness. In November, I spoke of immigration and competitiveness. And today, I conclude this series of addresses with this discussion of the need for the new American renaissance.

My message is this: To foster this continuing American renaissance, American government cannot stand idly by. Remaining economically competitive will require action. Let me summarize my six-step agenda for action. This is what we need to do:

First, we must improve education. The Italian Renaissance relied on the learning of the Greeks that Manuel Chrysoloras helped to spread. The new American renaissance will rely on our having the best educated workforce of the centuries to come.

We need to ensure that children come to school ready to learn. We need to ensure that children have modern and well-equipped schools. And we need to ensure that children have small classes.

We should raise salaries for teachers in poor schools by 50 percent. We should raise the salaries of top-performing teachers and teachers in math, science, and languages by another 50 percent.

We can ensure quality after-school programs. We can lengthen the school year.

We must support community colleges and link them more strongly to workforce opportunities. We must expand Pell Grants. We must improve, consolidate, and expand education tax incentives. We must expand and extend the deduction for tuition expenses. We must increase scholarships and loan forgiveness for science and engineering students. We must expand the Hope and Lifetime Learning credits.

Stanford University

We need to make it possible for non-traditional students to obtain an education. We need to retrain workers whose jobs are lost to trade and help them reenter the workforce.

We should make it easier, consistent with the requirements of national security, for foreign students to study in America.

We should make visa renewals during multiyear studies routine. And we should change visa renewal requirements policies that are now contingent on students' return to their home countries.

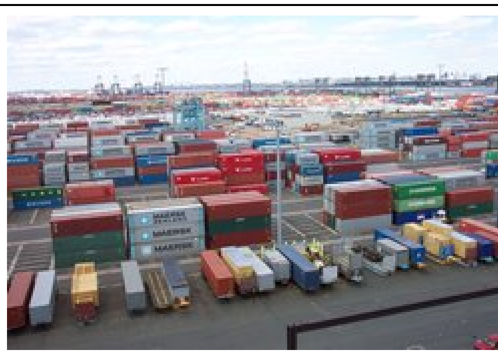
Second, we must foster research. For it was discovery that helped bring about the renaissance.

We need to reward innovation and risk-taking. We need to fully fund research support organizations like the National Science Foundation, the

National Institutes of Health, and the Office of Science at the Department of Energy. We need to simplify and make permanent the R&D tax credit.

We should encourage talented foreign students to study, research, and innovate at American universities and research institutions. And we should simplify the permanent residence process for exceptional foreign students with advanced science degrees from American universities.

Third, we have to advance international trade. Insularity characterized the Dark Ages. The Renaissance spread from an international spark. And the ensuing blaze of international commerce brought on the Modern Age.



We must open new markets for American exports worldwide. We must improve enforcement of existing trade agreements. We must do more to defend American intellectual property rights. And we must prompt China to further loosen its currency.

We should look more to Asia for bilateral agreements. We should advance regional trade agreements in Asia. We should seek out further sectoral agreements such as the WTO's Information Technology Agreement. And we should launch an initiative in the advanced medical equipment sector.

We need to expand trade adjustment assistance to service workers. And we need to expand wage insurance.

We can make it easier for major American companies to employ and train their overseas employees. And we can facilitate international participation in meetings and conferences and travel to trade shows.

Fourth, we must address the burden that high health-care costs place on American business. And we must help provide health insurance to those who do not have it.

We can provide health insurance tax credits to small employers. We can fund employer-based group-purchasing pools. We can increase funding for high-risk pools. We can expand Medicaid and the State Children's Health Insurance Program. We can permit a Medicare buy-in for the near-elderly.

We need to facilitate the use of health information technology — IT. We need to use health IT to link medication administration to a patient's clinical information. We need to foster standards for the interoperability of health IT systems. We need to improve health-care providers' ability to exchange clinical data. And we need to provide loans and grants to encourage the use of health IT. The Senate has passed legislation this session to further many of these health IT goals. The House must do it, too, and move quickly to provide higher Medicare reimbursements and work to improve quality of care, known as "pay-for-performance."

We should provide higher Medicare reimbursements to providers working to improve the quality of delivered care. And we should coordinate senior care to ensure adequate preventive care and chronic condition management. This year's Senate-passed spending reconciliation bill took the first steps toward pay-for-performance. Although there is much in that bill that gives me pause, we should enact those pay-for-performance changes.

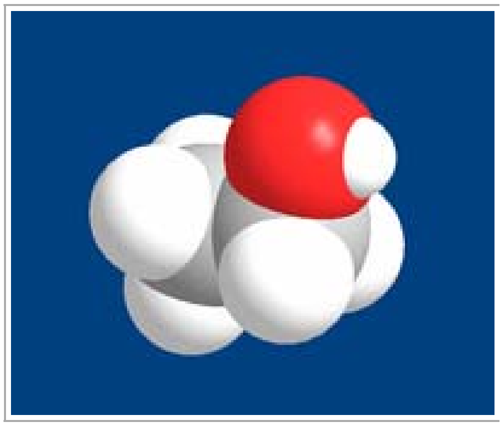
Fifth, we must increase national savings to finance the investment and innovation of the next renaissance.

We need to plug the biggest leak in our national savings pool: the federal budget deficit. We need to truthfully report current and future Federal Government spending needs. We need to restore pay-as-you-go rules for both entitlement spending and tax cuts.

We should reduce the annual tax gap. We should eliminate wasteful and unnecessary spending. We should eliminate wasteful and unfair tax breaks, such as abusive tax shelters and corporate tax loopholes. And we should slow the growth in health-care costs.

We can increase private savings. We can improve financial education. We can encourage automatic enrollment of eligible workers in retirement savings plans. We can bring payroll-deduction retirement savings to private sector workers lacking 401(k)s or similar plans. We can make incentives for saving more progressive. And we can extend the Savers' Credit and expand it to Americans with no income tax liability.

Sixth, for a modern renaissance, we must address the need for sustainable and environmentally compatible sources of energy.



ethanol

We can launch a new "Manhattan Project" to develop clean alternative energies. We can foster the use of hydrogen and fuel cells. We can foster wind energy. We can make a clear commitment to the development of biomass and ethanol-based fuels.

We should encourage energy R&D through research grants to industry and educational institutions and tax incentives for R&D. We should offer prizes to spur innovation.

We need an investment tax credit for coal gasification technology. We need a tax credit for companies that generate fuel using an updated version of the Fischer-Tropsch process. And we need a Federal loan guarantee so that companies can finance these capital investments. This year's energy and highway bills addressed some of these needs.

Taken together, these policies form a bold agenda to advance American competitiveness. They can help maintain American economic leadership in the world. And they can help to preserve high-wage American jobs here at home.

Beginning next month, I will introduce a comprehensive 2006 legislative package to strengthen America's competitiveness in a changing world. This package will encompass several bills that cover the many aspects of competitiveness. I invite my colleagues to join me in this effort.

Dante Alighieri

The early Renaissance poet, Dante Alighieri, embodied the spirit of his times when he wrote in The Divine Comedy that people "were not born to live like brutes, but to follow virtue and knowledge."

And from that grounding of virtue and knowledge flowed naturally Dante's description: "And thence we came forth, to see again the stars."

Let us follow virtue and knowledge and foster a new American renaissance. Let us strengthen America's competitiveness in a changing world. And let America again go forth, toward the stars.

151 CONG. REC. S13,486-88 (daily ed. Dec. 13, 2005).

Pillars of
A Competitive Economy

Originally delivered January 25, 2006

Forty three years ago, I set off on a trip around the world.

It was 1963. I was a student at a Stanford University program in France. But I spent most of my time with the other Americans there. And I learned little French. After six months, I decided to leave France and hitch-hike across the world.

The people I met on that trip changed my life. They sparked my interest in public service. They kindled my concern for foreign affairs. They broadened my appetite for the world.

43 years ago, I was in Delhi. I learned that Prime Minister Nehru met with Americans every second Thursday. So I made an appointment. I took my wrinkled blazer out of my backpack. I smoothed it out as

Indian Prime Minister Jawaharlal Nehru

best I could.

And I headed over to the Prime Minister's office. I met with Nehru for more than half an hour. Here I was, a young student from Montana, talking with the man who had led India to independence, united its many peoples, and steered its economy. It was a life-changing experience.

Last week — 43 years later — I went back to India. This time I went as a United States Senator, with a delegation of Montanans. We traveled to Bangalore and Delhi. We also went to Beijing and Chongqing, China. We went to learn about the challenges and opportunities presented by the economic rise of India and China.

43 years ago I saw Prime Minister Nehru, the Taj Mahal, and New Delhi's imposing British architecture.

43 years ago, I saw India's history. Last week, I saw India's future.

I saw the future in the faces of confident, young engineering students at Delhi's Indian Institute of Technology, who have no doubt that the India of tomorrow will be better than the India their parents left them. I saw the future in Delhi's super-modern subway that snakes its way beneath that teeming city of almost 14 million.

I saw the future at Bangalore's Infosys, whose futuristic architecture, state-of-the-art technology, and commitment to excellence has made it a global technology leader. I saw the future in the eyes of Indian government leaders, who are bent on making 21st century India the world's engine.

I also saw the future in China. I saw gleaming superhighways burrowing through brightly-lit tunnels. I saw robots stacking the shelves of the Chinese company that now produces the IBM Think Pad.

I saw teams of Chinese researchers at Microsoft's Beijing lab determined to discover the next big thing. I saw the new cars that replaced the old cars that — only a few short years ago — displaced Beijing's bicycles. I saw capitalists and entrepreneurs betting on China's rise. I saw a confident middle class ready for the future.

the Delhi Metro

These sights reinforce what we already know. China and India — with over 2.3 billion people between them — are reawakening civilizations on the march.

After a quarter century of growth, China is set to become the world's largest economy by 2030. China is already the world's third largest exporter. And China has surpassed America as the largest exporter of information technology products.

A steady flow of foreign direct investment seeks opportunity and profit in China. Ninety percent of Chinese exporters are backed by foreign investment, whether in clothes, computers or chemicals. The flock of construction cranes that I saw in Beijing and Chongqing hover over investments in real estate and construction.

India is no less impressive. It has developed a higher education system that produces tens of thousands of incredibly gifted graduates per year. It has created a world-class information technology sector, which has grown an astounding 50 percent annually for over 10 years.

And with new billion-dollar investments by Microsoft, Cisco Systems, Intel, and others India's IT industry could swell fivefold in just two years.

I went to China and India because I wanted to see these rising powers up close. I went to listen to government and business leaders, to students and entrepreneurs, and learn how they see the future. I went to talk with former Prime Minister of Singapore and elder statesman of Asia Lee Kuan Yew. I went with a delegation of Montanans. I went to face the facts.

downtown Chongqing

Technology is getting more sophisticated. Workers are becoming more skilled and productive. China's business leaders have vision and focus, and they know their economy holds enormous promise. These are the facts.

India has a large, highly-skilled, and fiercely ambitious workforce. They are led by entrepreneurs — like K. Dinesh of Infosys — who are fixated on quality, innovation, and performance. America's flagship companies are also investing billions in India. They are buying not low-skilled work, but high-caliber research and development. These are also the facts.

The U.S. economy is losing some of its competitive advantage — that too is a fact. We have lost our preeminence in information technology, falling behind Singapore, Iceland, Finland, and Denmark. At the same time, federal support for research and development is in a 30-year decline.

While multinationals scramble to tap India's talent pool, we are neglecting our human capital. When I started in the Senate, America ranked third in the world in the share of young people with science or engineering degrees. Thirty years later, we have slipped to 17th. In global rankings of math, reading, and science skills, our 15-year-olds have fallen even further.

Rising health-care costs threaten to cripple many companies. And too often employees have little or no coverage. The average American spends more than $5,000 a year on healthcare costs — twice as much as the next most-costly country. These are the facts.

The United States is set to rack up another record current account deficit. We borrow more than 80 percent of the world's savings.

Our net foreign debt has not been this high as a percentage of GDP since Grover Cleveland was in the White House. This is unsustainable and costly. And too few think about the day our debts come due.

In international trade, over the last few years, we have distanced ourselves from Asia, leaving China to engage the region. Instead, this administration has pursued politically-motivated trade agreements with very small countries of little economic significance that create few jobs at home.

By not pushing to open the world's biggest markets and not explaining the importance of trade, this administration fosters a surging protectionism.

These are the facts.

But I did not come here today to declare the end of U.S. global economic preeminence. On the contrary, I come here to lay out the facts as I see them — both troubling and encouraging. And I come to call for a strategy to face these challenges.

America is capable of overcoming any challenge. America remains the world's economic powerhouse. We lead all major economies in output. Our companies and workers grow more productive each year.

At every stop during my trip — whether in Beijing, Chongqing, Singapore, Bangalore, or Delhi — I found unwavering admiration for the American economy. When I asked why, no one mentioned our growth, tax system, or productivity. The answer was much more fundamental. Without exception, students, business titans, and government ministers, gave me one word: Innovation.

American innovation drives new industries. American innovation creates new jobs. American innovation brings new and better ways of doing what we do today. Innovation is what Americans do best. Ingenious computers and handy gadgets may be "Made in China." But the ideas that gave them life are "Made in the U.S.A."

I am confident that America is — and must remain — economically preeminent. But I am equally confident that China and India are not going away. They are an increasing part of the world in which we live and work.

As far as I am concerned, one American job lost to foreign competition is one job too many. But we cannot kid ourselves. We cannot stick our heads in the sand. Our challenge is to learn why some jobs move overseas and work to keep them at home.

To do so, we must identify challenges and stand up to them. We must find our weaknesses and overcome them. We must recognize our strengths and multiply them.

Whether we succeed or fail depends on the choices we make. Success requires making the right choices. Just look at China and India.

China's growing prosperity is the result of its deliberate choice to liberalize its economy and to encourage investment. China chose to join the World Trade Organization and reduce its tariffs to the lowest level of any developing country. China chose to create incentives for foreign investors. China chose to court closer trade and investment ties with its neighbors and the world.

China also faces daunting challenges. When we were in China, pollution dulled the gleaming infrastructure, labored our lungs, and stung our eyes. By official estimates, 300 million Chinese drink tainted water each day. So China is making choices. China is moving to dismantle its heavy polluters and initiate "green GDP" growth. It plans to double its use of cleaner-burning liquefied natural gas.

These are China's choices. What will we choose?

India's growth today is the result of its choice to leave behind decades of centralized planning, fiscal chaos, and protectionism. India chose to impose fiscal and monetary discipline. India chose to lower tariffs. India chose to invest in national technical institutes that rival our Ivy Leagues.

India too faces enormous obstacles. In Bangalore, I heard from entrepreneurs fed up with deteriorating infrastructure, poor sanitation, and frequent power failures. Infrastructure is abysmal throughout India.

Bangalore

So India has chosen to invest 40 percent of its government spending to update its infrastructure to meet the demands of modern international commerce. It has decided to build modern subways in over a dozen of India's cities.

These are India's choices. What will we choose?

I believe that we must choose a path to greater economic competitiveness. That means taking advantage of opportunities that we see and meeting our challenges head on.

First, we must see the facts for what they are. We must stop viewing Chinese and Indian economic successes as a "zero-sum" game. Their economic gains do not depend on our losses. We can all prosper. We can all grow.

Opportunities for America abound in a successful China and India. But we are not there taking advantage of them.

India is investing tens of billions of dollars in rebuilding roads and building new ports and airports. Dozens of these infrastructure projects — each worth hundreds of millions of dollars — are open to American companies. But Indian government and business leaders reminded me in every meeting that American companies are not there. These opportunities are instead going to Malaysian, French, Korean, and other investors.

Likewise, in China, well over 100 cities have populations of 1 million or more. But foreign investment is concentrated in just a handful of them. I visited Chongqing, in central China, which has a population of 33 million, but very little U.S. investment. When I met with the few American businessmen there, they told me opportunity for Americans existed "in every sector."

Challenge and opportunity — that's what China and India present to the United States. To meet the challenge, and to take advantage of the opportunity, we should have a comprehensive agenda for a 21st century competitive economy. We must look inward and scrutinize our own policies thoroughly, comprehensively, and honestly.

I have spent much of the last year developing such an agenda. In the coming months, I will launch seven individual legislative proposals to address our competitiveness in education, energy, health, savings, research, tax, and international trade.

I do not pretend to have all the answers. But we have to start tackling these questions now.

I visualize these proposals as six pillars of competitiveness. These pillars can only stand tall if we first build a solid foundation. That foundation is education.

We must again learn to value education. We must choose to value and honor our teachers and professors. We must make the priority of lifelong learning an inseparable part of American society and American culture.

China and India place an enormous premium on education. We need to do likewise.

My education competitiveness legislation would dramatically increase access to the kind of education our economy demands.

Specifically, we will encourage more students to go into math and science by funding college scholarships for sciences, providing free tuition for science and engineering students, and creating partnerships with employers and continuing education centers to meet the technology needs of companies.

I will also propose legislation to invest in our teachers by raising starting teacher salaries and providing student loan forgiveness for teachers.

Energy is another critical element of our nation's competitiveness.

With oil and natural gas prices doubling and tripling over the past few years, one needs only go to the gas pump to see a crisis is imminent. The more China and India thrive, the higher they will drive energy prices. China and India understand this energy imperative, and are investing in nuclear, hydroelectric, and natural gas energy sources on a large scale.

We must choose alternative energy options that will support economic growth and make our economy more competitive. We already have in place tax incentives for alternative energy, but we must be bolder and harness America's best innovative minds to secure our energy future.

My energy competitiveness bill would create a new agency modeled on the Defense Advanced Research Projects Agency, which developed technologies including the Internet and stealth aircraft technology. This new agency, the "Advanced Research Projects Agency — Energy" or ARPA-E, will fund cutting-edge research to break out of the energy squeeze we now face.

We must choose to make affordable health care a reality for all Americans. The problem of health care costs is real. Nearly one-third of American adults was unable to pay for medical care last year. That was nearly double the rate 30 years ago. Rising health care costs are a burden for American businesses and our economy's Achilles heel.

There is a lot of talk about health care reform these days. But too much talk is of cutting costs and cutting Medicare, rather than getting at the heart of the problem. What have we actually done drive systemic changes? We got a prescription drug benefit rolling, but we must now invest in innovation and efficiency. My health legislation does just that.

First, we can improve health care by boosting health information technology. Health IT serves as a litmus test for innovation. New and better IT systems mean patients will get the care that they need, and we will save money as paperwork becomes unnecessary.

China and India are strong today because they constantly forge ahead. We must do the same, creating an IT infrastructure linking patients and providers with the best health care America can provide.

This administration has a goal of creating an electronic health record network this decade. But to realize worthy goals we need real investment and political will. We need more than good intentions, we need real action — grant programs and technical assistance to help providers get on-line, and federal standards to link people together.

Second, we must start paying for quality and value in Medicare. More care is not necessarily better care. It makes no sense to pay all providers the same if some are providing much better quality — or much worse — care than others. Realizing pay-for-performance in Medicare will drive sector-wide reforms, because they are the largest payer.

Last year, the pay-for-performance bill I wrote with Senator Grassley came close to becoming law — but close is not far enough. This year, I will work to make Medicare pay-for-performance a reality.

Third, we must restructure priorities in the health care market. Focusing only on the short-term means failure in the long-term. Changing our focus means subjecting American companies to rigorous standards. It also means investing in independent research to determine which drugs, treatments, and devices give the best results — and by paying for them accordingly.

We must choose to create an environment where it is good business to innovate, where companies produce drugs that will make people healthier faster and more affordably.

If the key to America's future lies in education, the key to American's present lies in our nation's health. We have a long way to go.

With all of these challenges facing our economy, we need to invest in education, in technology and in innovation. But to invest in its future, a nation needs savings, which is why my fourth legislative proposal addresses savings competitiveness. America needs more savings — public and private — to invest in a competitive economy.

First, we need to make certain the federal government spends taxpayer dollars wisely. My legislation does this by restoring tough pay-as-you-go rules for both spending and tax cuts. These rules are simple, and are the same ones so many American households follow — any new public spending or tax cuts must be paid for up front. If we don't have it, we don't spend it.

Second, we will boost private savings by making it easier for American families to save. We need to create a culture of saving in the home and in the workplace. More workers will be automatically enrolled in savings plans, with the choice to "opt-out." Those Americans who are not eligible for a 401(k) plan today, will be given new savings options, and we will encourage them by making the Saver's Tax Credit permanent.

Innovation is America's greatest asset. I heard that time and again from government and business leaders on my trip. My fifth proposal will capitalize on it. My legislation will simplify, improve, and make permanent the R&D tax credit.

Some have rightly claimed that the current research credit is terribly complex and difficult for the IRS to administer. By simplifying the credit, businesses can more easily utilize it leading to a boost in U.S.-based research. American businesses rely on this credit to remain competitive in a global market, spur innovation, and provide high-paying research and technology jobs.

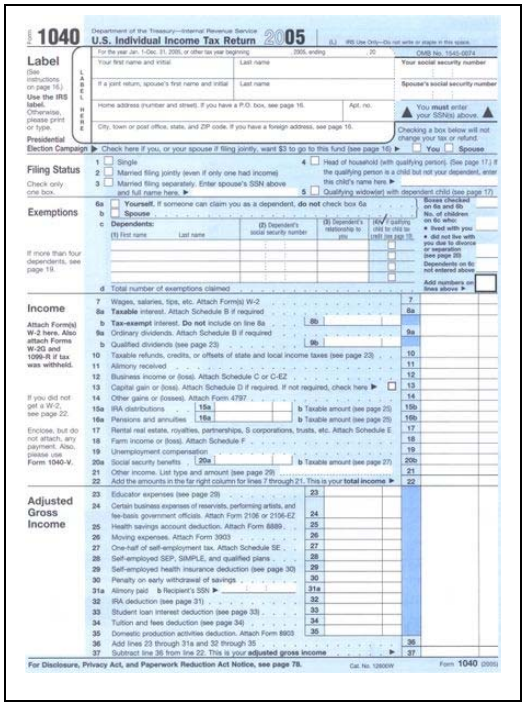
But the tax credit is not enough, especially when it comes to basic research. I believe that more support for private and public research partnerships can be an effective vehicle for basic research.

We did this in the 1980s when semiconductor companies and the government collaborated to share risk and leverage discoveries for semiconductor technology. My legislation will encourage such partnerships and boost our nation's basic research capacity.

In addition to providing incentives for American businesses to become more competitive internationally, we can also break down some of the barriers they face. Our corporate and international tax laws were written in a time where U.S. businesses were the only players on the block.

But in our fast-paced global economy, where consumers can purchase goods or services instantly from anyone in the world, U.S. businesses need flexibility in order to compete.

The tax code rightly contains a number of anti-abuse rules so that companies cannot shelter passive income, but we must allow U.S. businesses to redeploy resources from active foreign operations, as their competitors already do.



Form 1040 Department of the Treasury—Internal Revenue Service
U.S. Individual Income Tax Return 2005 (L) IRS Use Only—Do not write or staple in this space.

For the year Jan. 1–Dec. 31, 2005, or other tax year beginning , 2005, ending , 20 OMB No. 1545-0074

Label (See instructions on page 16.) Use the IRS label. Otherwise, please print or type. LABEL HERE

Your first name and initial | Last name | Your social security number

If a joint return, spouse's first name and initial | Last name | Spouse's social security number

Home address (number and street). If you have a P.O. box, see page 16. | Apt. no. | ▲ You must enter your SSN(s) above. ▲

City, town or post office, state, and ZIP code. If you have a foreign address, see page 16. | Checking a box below will not change your tax or refund.

Presidential Election Campaign ▶ Check here if you, or your spouse if filing jointly, want $3 to go to this fund (see page 16) ▶ ☐ You ☐ Spouse

Filing Status Check only one box.
1 ☐ Single
2 ☐ Married filing jointly (even if only one had income)
3 ☐ Married filing separately. Enter spouse's SSN above and full name here. ▶
4 ☐ Head of household (with qualifying person). (See page 17.) If the qualifying person is a child but not your dependent, enter this child's name here. ▶
5 ☐ Qualifying widow(er) with dependent child (see page 17)

Exemptions
6a ☐ Yourself. If someone can claim you as a dependent, do not check box 6a
b ☐ Spouse
c Dependents: (1) First name Last name | (2) Dependent's social security number | (3) Dependent's relationship to you | (4) ✓ if qualifying child for child tax credit (see page 18)
If more than four dependents, see page 19.
d Total number of exemptions claimed
Boxes checked on 6a and 6b
No. of children on 6c who: • lived with you • did not live with you due to divorce or separation (see page 20)
Dependents on 6c not entered above
Add numbers on lines above ▶

Income
Attach Form(s) W-2 here. Also attach Forms W-2G and 1099-R if tax was withheld.
If you did not get a W-2, see page 22.
Enclose, but do not attach, any payment. Also, please use Form 1040-V.
7 Wages, salaries, tips, etc. Attach Form(s) W-2
8a Taxable interest. Attach Schedule B if required
b Tax-exempt interest. Do not include on line 8a 8b
9a Ordinary dividends. Attach Schedule B if required
b Qualified dividends (see page 23) 9b
10 Taxable refunds, credits, or offsets of state and local income taxes (see page 23)
11 Alimony received
12 Business income or (loss). Attach Schedule C or C-EZ
13 Capital gain or (loss). Attach Schedule D if required. If not required, check here ▶ ☐
14 Other gains or (losses). Attach Form 4797
15a IRA distributions 15a b Taxable amount (see page 25) 15b
16a Pensions and annuities 16a b Taxable amount (see page 25) 16b
17 Rental real estate, royalties, partnerships, S corporations, trusts, etc. Attach Schedule E
18 Farm income or (loss). Attach Schedule F
19 Unemployment compensation
20a Social security benefits 20a b Taxable amount (see page 27) 20b
21 Other income. List type and amount (see page 29)
22 Add the amounts in the far right column for lines 7 through 21. This is your total income ▶

Adjusted Gross Income
23 Educator expenses (see page 29)
24 Certain business expenses of reservists, performing artists, and fee-basis government officials. Attach Form 2106 or 2106-EZ
25 Health savings account deduction. Attach Form 8889
26 Moving expenses. Attach Form 3903
27 One-half of self-employment tax. Attach Schedule SE
28 Self-employed SEP, SIMPLE, and qualified plans
29 Self-employed health insurance deduction (see page 30)
30 Penalty on early withdrawal of savings
31a Alimony paid b Recipient's SSN ▶
32 IRA deduction (see page 31)
33 Student loan interest deduction (see page 33)
34 Tuition and fees deduction (see page 34)
35 Domestic production activities deduction. Attach Form 8903
36 Add lines 23 through 31a and 32 through 35
37 Subtract line 36 from line 22. This is your adjusted gross income ▶

For Disclosure, Privacy Act, and Paperwork Reduction Act Notice, see page 78. Cat. No. 12600W Form 1040 (2005)

I will review these rules, as well as transfer pricing rules, cost recovery periods for businesses assets, and the inappropriate use of offshore tax havens to make sure U.S. businesses are able to compete fairly and on a level playing field with both domestic and foreign competitors.

Finally, trade and investment in international markets is a challenge that have I asked our companies to embrace. But when American companies embrace these new market opportunities, we must also send them a clear signal — the American government has their back.

In other words, when our companies work to invest and trade abroad, we will work to make sure these markets are open, that they stay open, and that our partners play by the rules.

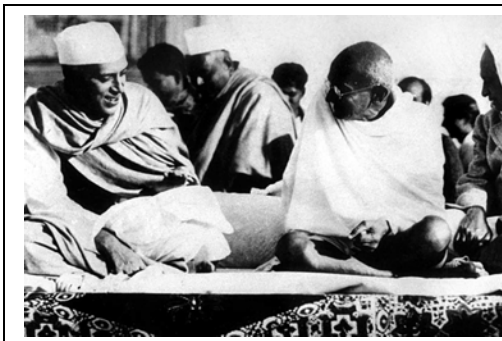
My trade competitiveness legislation will require USTR to work with Congress to identify priority barriers to trade and investment each year, and address them expeditiously. It will also build on Senator Stabenow's idea to create a new Senate-confirmed Chief Trade Prosecutor at USTR dedicated to investigating and prosecuting trade enforcement cases.

Our workers must also know that we have their backs. We must do a far better job of taking care of the workers that trade leaves behind. The current Trade Adjustment Assistance is a good start, but it can work better. I already proposed expanding it to cover service workers. And Trade Adjustment Assistance benefits must be more accessible to all trade-displaced workers, including those who lose their jobs due to competition from China or India.

These seven legislative measures will build six pillars upon a solid foundation of education. Together, they will form the structure of a strong, dynamic, and competitive economy. But this is only the beginning.

We should not be afraid to think bigger in each of these areas. For example, we should think about establishing national schools for the brightest young American minds, like the enormously successful Indian Institutes of Technology.

We could harness our collective creativity by offering multi-million dollar rewards for the solutions to challenging problems, similar to the "X-prize" recently awarded for the first privately-funded manned space vehicle. We could provide health care coverage to all Americans, starting with our nation's children. We must not shy away from our challenges.



Jawaharlal Nehru and Mahatma Gandhi

We face immense challenges. And we need a far-reaching agenda. But these challenges are only a fraction of those Prime Minster Nehru faced when I met him in 1963.

If we stand up to our challenges, if we make the right choices, America will continue to lead the world for the foreseeable future.

And 43 years from now — in 2049 — when some Chinese or Indian student decides to hitch-hike her way across this country, she will see an America whose economic leadership continues to inspire the present and define the future.

Delivered at the National Press Club, Washington, D.C.

The Trade Competitiveness Act of 2006

Originally delivered February 16, 2006

Today I — along with Senator Hatch and Senator Stabenow — introduce the Trade Competitiveness Act of 2006, a bill that will provide the administration with additional tools, resources, and accountability to enforce international trade agreements.

This bill is the first in a comprehensive package of legislation that I will introduce during the next few weeks to bolster American competitiveness.

The United States is still a world leader in almost every way imaginable. But we need a bold agenda to maintain America's economic leadership and preserve high-wage American jobs here at home.

I just got back from China and India, and that trip only underscored the challenges we face in the global economy. To rise to this challenge, my bills will address trade and all other keystones of America's competitiveness — education, energy, health, savings, research, and tax policy.

container ships in San Francsco Bay

But today, we start with international trade. Trade and investment in international markets is a challenge that I have asked U.S. companies to embrace.

I want American companies to get aggressive about getting their products and their people into foreign markets to bolster the U.S. presence around the world and bring jobs and dollars back home.

But when American companies embrace these new market opportunities, they need to know that the American government will back them up. They need to know that we will do all that we can to make sure our trading partners play by the rules.

That is why trade enforcement is critical. And this bill will step up trade enforcement in five ways.

Number one: Under my legislation, every year, the USTR will be required to identify the biggest trade barriers hurting the U.S. economically. The USTR will have to get Congress's input. And the USTR will be required to act, through the WTO or in some other way, to break those barriers down.

Number two: My bill will create a "Chief Trade Enforcement Officer" at the USTR. This person will be confirmed by the Senate. His or her entire job will be to investigate enforcement concerns and recommend action to the USTR. This person will also answer to Congress when it has concerns about enforcement.

Number three: This new Trade Enforcement Officer is going to have some backup. My bill will create a "Trade Enforcement Working Group" in the Executive Branch. It will be chaired by the USTR, and include representatives of the Departments of Commerce, State, Agriculture, and Treasury. They will help the Chief Trade Enforcement Officer get the job done.

Number four: This new Trade Enforcement Officer will need resources to get the job done. My bill provides $5 million additional to the USTR for enforcement. Right now, the President's Fiscal Year 2007 budget effectively cuts enforcement funds.

Number five: This bill will send a strong message to the International Monetary Fund. It will urge our Administration to tell the IMF to get aggressive with countries that manipulate their own currency to obtain a trade advantage. It will also urge the IMF to undertake reforms so it becomes more transparent and more representative of the emerging economies in Asia.

International Monetary Fund headquarters

Senator Hatch wanted to make sure that the Federal Government does not lose sight of Federal and State sovereignty when negotiating, implementing, and enforcing trade agreements. That's an important issue to consider, and I'm glad it's in this bill.

The bottom line is that improving enforcement of our trade agreements will allow American companies to play hard and win big in the global marketplace. A level playing field is the foundation of American competitiveness on trade. This bill will help to provide it.

152 CONG. REC. S1433-35 (daily ed. Feb. 16, 2006).

The Energy Competitiveness Act of 2006

Originally delivered March 9, 2006

In the years when I first began to serve in Congress, America faced severe problems with supplies of oil. For years, long gas lines, frustration, and questions about the security of our oil supply drove the public debate.

Thirty years have passed. And, frankly, things have not changed all that much. We still use gasoline and coal at staggering rates. And we are still concerned about the security of our oil supply. We do not have lines at gas stations. But last year, prices rose to levels unimaginable just a few years ago.

Prices for gasoline, heating oil, electricity, and natural gas have soared in recent years, hitting working families hard. In the past few weeks, we have seen a terrorist attack on Saudi Arabian oil facilities.

1979 gas line

We have seen oil workers kidnapped in Nigeria. We have seen Venezuelan President Hugo Chavez threaten that he would cut off our supply of oil from his country. And we have seen some question whether Iran's role as an oil supplier keeps other countries from properly addressing Iran's threat to nuclear proliferation.

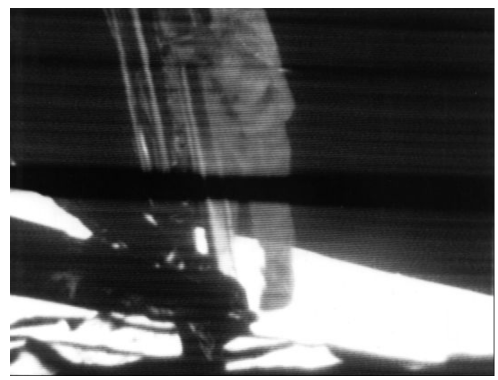
Energy provides one of America's greatest challenges for the 21st century. Our economy has been dependent on oil and coal for about 100 years. And since World War II, natural gas has become part of the equation. Will we continue this dependency for the next 100 years?

The cost of energy will profoundly affect the future competitiveness of the American economy. As the Chinese and Indian economies grow, so will their demand for energy. And that will add further upward pressure to energy prices.

To respond to the challenges of the new world economy, I am introducing legislation in seven key areas to build a foundation for a more competitive America. We must improve education, health care, trade law enforcement, the tax code, and savings. And we must bring a greater focus to energy research and development. Today, I introduce the Energy Competitiveness Act of 2006.

We are trapped in an energy box. It is a box characterized by high imports, ever-increasing prices for oil and natural gas, and environmental danger. We must experiment with ways to break out of that box. To break out, we need an energy research effort modeled after the Manhattan Project, or the Apollo mission to the moon.

America has a brilliant record of gathering the best minds. We meet challenges that may at first seem to be impossible. During World War II, the Manhattan Project brought together brilliant physicists and engineers to build an atomic bomb in 3 short years. And after President Kennedy described his vision to a joint session of Congress in May of 1961, the Apollo space program put a man on the moon in just 8 years.



Neil Armstrong takes "one small step"

Looking back, these achievements were stunning. Both projects started out with no guarantee of success. Each could have ended in utter failure. Yet because of the talent, ingenuity, and focus of creative minds, they both succeeded.

Breaking out of the energy box poses a similar challenge. Success is not guaranteed. But we have got to give it our best shot.

Today I am introducing the Energy Competitiveness Act of 2006. My legislation would create a new energy research agency. It would extend key alternative energy tax relief. It would help our Nation face the challenges of a newly competitive global economy. It would help to move us into a new energy future.

We have the greatest research scientists on the planet. We have the most technically talented workforce in the world. But we do not have the vigor that we need in energy research. Energy research is a backwater, compared to other research efforts in biotechnology, medicine, computers, and defense-oriented projects.

With the Manhattan Project and the Apollo space program, America proved that we can gather the best talent for a focused mission and succeed. It is time that we begin a similar effort on energy.

Apollo 11's Buzz Aldrin salutes the flag

We need to create a new agency to initiate cutting-edge, innovative energy research and development aimed at taking us to a new energy future. Doing so is essential to our effort to improve our economic competitiveness.

The new agency is modeled on DARPA — the Defense Advanced Research Projects Agency — in the Department of Defense. Among the revolutionary technologies that DARPA has developed are the internet and stealth technology for aircraft. DARPA has been a tremendous success.

The National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine joined to form the Committee on Prospering in the Global Economy of the 21st Century. Norm Augustine chaired the Committee. Based on DARPA's achievements, last fall, the Committee recommended the creation of an ARPA-E: Advanced Research Projects Agency — Energy.

This was one of a number of recommendations that the Committee made in its impressive report on the future competitive challenges that America faces. The Committee recommended that ARPA-E be designed to conduct transformative, out-of-the-box energy research.

My bill proposes that ARPA-E be a small agency with a total of 250 people. A minimum of 180 of them would be technical staff.

A director of the agency and four deputies would lead ARPA-E. I propose that ARPA-E be funded at $300 million in fiscal year 2007, $600 million in 2008, $1.1 billion in 2009, $1.5 billion in 2010, and $2.0 billion in 2011.

We would require that the staff have a technical background. The agency would use the Experimental Personnel Authority designed for DARPA. That authority authorizes higher salaries than for typical Federal employees, and faster hiring, so that the agency could get to work quickly.

To keep the intense, innovative focus that we want, technical staff would be limited to 3 to 4 years at the agency. Managers would be limited to 4 to 6 years. The director could give both groups extended terms of employment if the director so chose.

For contracts, the agency would use the DARPA procedure. That procedure allows more flexible contracting arrangements than are normally possible under the Federal Acquisition Regulations. To ensure that ARPA-E would conduct innovative research, 75 percent of research projects initiated by ARPA-E would not be peer reviewed.

The ARPA-E would be authorized to award cash prizes to encourage and accelerate energy research accomplishments.

Finally, the bill would require a report by the end of fiscal year 2007 on whether ARPA-E would need its own energy research lab.

The Energy Competitiveness Act would also increase our commitment to develop promising energy technologies. In the Energy Policy Act of 2005, last year's Energy bill, we established several important incentives to foster new forms of energy production and to encourage conservation.

America's investment in alternative energy and conservation lags well behind that of other developed countries. The 2005 Energy bill put us on the right track by expanding the tax credit for electricity from renewable resources. It created incentives for coal gasification technologies. It encouraged investment in refineries that can handle North American feedstocks. And it established tax credits for energy-efficient buildings and equipment.

Unfortunately, these provisions are either short-term or capped at insufficient levels. The Energy Competitiveness Act that I introduce today would bolster the first steps made in 2005. The bill that I introduce today would extend these important provisions and increase the amount of tax incentives available.

The bill would extend through 2010 the tax credit for electricity produced from wind, biomass, geothermal, and other renewable sources. It would also increase the volume caps on Clean Renewable Energy Bonds and coal gasification tax credits.

The bill would make permanent enhanced depreciation for new refining capacity that is capable of refining non-conventional feedstocks.

North America has abundant energy resources that could ease our demand for oil from the Mideast. But today, many of our refineries are incapable of processing heavier feedstocks, such as oil from shale or tar sands. Making this provision permanent would provide the needed certainty for long-term investments in capital intensive refining projects.

The Energy Competitiveness Act that I introduce today would encourage businesses to purchase alternative fuel and electric vehicles. And it would extend through 2010 many of the incentives from the 2005 bill that promote investment in energy-efficient buildings and equipment.

We are seeing exciting new efforts in America to strengthen our energy competitiveness.

We need to build on this foundation by creating an aggressive energy research agency that will push the limits of new technology and discover alternative energy sources.

America has massive coal reserves. So coal gasification is receiving greater attention. Gasification involves breaking down coal under heat and pressure to create synthetic natural gas. We must address the environmental issues. But if this technology can be improved, then America will be able to take a huge step toward energy independence.

There are exciting developments in wind energy. In Montana, the Judith Gap Wind Farm has been generating power at full capacity for several weeks. The farm includes 90 wind turbines. Each turbine can produce enough electricity for roughly 400 homes.

The entire farm can produce the electricity needed to supply 300,000 customers. Montana was one of nine States that put in place more than 100 megawatts of wind power generation in 2005. And my State ranks in the top 15 States in the Nation for wind power capacity.

Fusion is another possible area where aggressive research could lead to huge payoffs. Continuing research will help us to determine whether energy production through fusion is a practical option.

Ethanol is also gaining as an alternative energy option. In 2005, Americans invested more than $850 million in ethanol plants. Ford Motor Company has plans for producing 250,000 vehicles in 2006 that will be able to use several different types of fuel, including ethanol.

Brazil, with the help of ethanol, expects to become energy independent this year. Ethanol accounts for 20 percent of Brazil's fuel transport market. Seven out of every 10 cars in Brazil can run on ethanol, gasoline, or a mixture of both.

In Iceland, all electricity generation is from renewable sources. Iceland is now taking the next step, and has started an initiative to replace the use of fossil fuels with hydrogen by 2050.

To achieve this, in 1999, Icelanders founded a public-private partnership called Icelandic New Energy. This partnership is the main driver in hydrogen energy research and implementation in Iceland. Public hydrogen-fueled buses began service in December of last year.

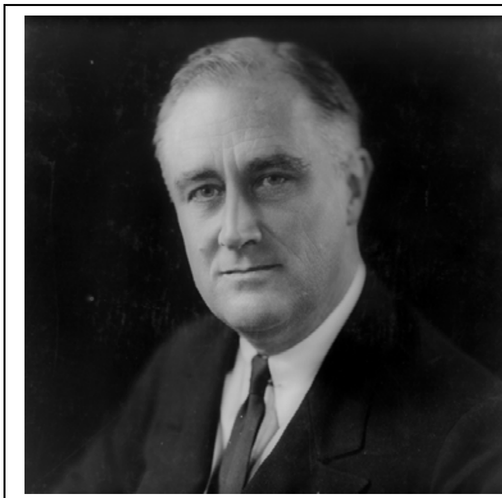
And experiments continue with hydrogen-driven consumer motorcycles, small cars, and fishing boats.

We live in a much larger and more complex nation than Iceland or Brazil. But we can share their vision of a future fueled by alternative energy and improved conservation.

There are also exciting developments in nanotechnology, solar power, energy-efficient materials, biomass, and green buildings.

All of these are examples of possible directions for our Nation's energy future. But we need a more aggressive and focused research and development effort to push these alternatives. And we need an effort to create scientific breakthroughs to supplement existing technologies.

We have got to give it our best shot. As President Franklin Roosevelt said, we must conduct "bold, persistent experimentation."



President Franklin D. Roosevelt

Our economic security is at stake. Our ability to compete in the new world economy is at stake.

ARPA-E will help us move forward on existing technologies. It will help us to find new technologies that are not even imaginable today. And the tax incentives will keep us on the right track until more dramatic breakthroughs occur.

I urge my colleagues to look closely at this legislation.

152 CONG. REC. S1968-69 (daily ed. Mar. 9, 2006).

The Savings Competitiveness Act of 2006

Originally delivered March 16, 2006

Today I am introducing legislation to make America more competitive by increasing savings. The bill encourages savings at work, and requires that the Government consider the Nation's savings in the budget process.

That great American philosopher Yogi Berra once said: "If you see a fork in the road, take it."

Well, we are at that fork in the road. Private savings are at an all time low. And the government just spoons out more and more red ink. If America does not change its ways, we will find ourselves on the wrong fork.

For the past 10 months, I have been talking about competitiveness. I have been talking about the steps that we must take to keep this country strong. And I have been talking about the steps that we must take to make it stronger.

Yogi Berra (right), with Sparky Anderson and President George W. Bush

One key component of my competitiveness agenda is savings. We must improve our national savings rate because capital is critical to growth. And continued deficits lead ultimately to a downward spiral.

The 2005 personal savings rate was negative — minus 0.5 percent. Taxpayers have joined their government in engaging in deficit spending. We have to turn our savings rates around. The question is how to do it.

With regard to Federal Government budget deficits, we have talked a lot over the last few days about the need for a pay-as-you-go process. We all know that it is important. The only question is whether we are willing to take the tough steps that pay-go requires, and not leave the burden to our children and grandchildren.

Pay-go does not necessarily mean tax increases. It could mean collecting the taxes that are already owed. The most recent IRS estimate of the tax gap — the difference between what taxpayers owe and what they pay on time — is $350 billion each year.

Collecting that difference would pay for a lot of the Government. Several times, the Senate has passed legislation that would close corporate loopholes and other abuses that contribute to the tax gap. Instead of looking for additional taxes, we should work with our Colleagues in the House to enact proposals like these that will simply get taxpayers to pay what they already owe.

Today, I want to focus on the lack of personal savings for retirement. We all know it is inadequate. And we must address this problem if American workers are to be able to retire with confidence that they can maintain their living standards.

The "Savings Competitiveness Act," which I introduce today, will make it easier for millions of workers to save for retirement. It will create an automatic opportunity for workers to have savings withheld from their paychecks.

We cannot improve the personal savings rate by providing tax incentives that simply shift savings from one type of account to another, or from one investment to another. We can improve the personal savings rate only by creating new savings, especially savings by workers who would otherwise not save. I believe that this bill will do just that.

Data on retirement savings show that workers who can save at work through payroll deduction arrangements — such as 401(k) plans — usually take advantage of the opportunity to save. About two-thirds of eligible workers contribute to a 401(k) plan. That percentage jumps dramatically — to more than 80 percent — if eligible workers are automatically enrolled in these plans. Automatic enrollment makes saving the default. Workers can opt out. But those who do not opt out, start saving.

In November, we passed the pension bill by an overwhelming margin — 97-to-2. That bill included provisions to encourage opt-out 401(k) and 403(b) plans, instead of opt-in plans. This is a very important first step. Separate bills introduced by Senators Bingaman and Snowe, and Senators Conrad and Smith were the basis for the Senate provisions. And I applaud their efforts to move these ideas along. Since the House also included automatic enrollment language in its bill, I expect that the final conference bill will take this dramatic step toward increasing savings.

That, however, is just a first step. Automatic enrollment in 401(k) and 403(b) plans will help only those who are eligible to join an employer-sponsored plan. That is about 60 percent of working Americans. Unfortunately, that leaves 40 percent of workers out in the cold. For small employers, the situation is worse. More than half of workers with small employers — those with fewer than 25 employees — have no employer-sponsored retirement plan. And for firms with fewer than 10 employees, only 16 percent of workers participate in an employer-sponsored plan.

Those who have no employer-sponsored retirement program are far less likely to save for retirement than those who do; 85 percent of workers eligible for an employer-sponsored plan are actually earning benefits in those plans. But less than 20 percent of eligible taxpayers contribute to an IRA.

Many more own IRAs — because funds from employer plans have been rolled over to an IRA. But the truth is, most retirement savings came from employer-based retirement plans.

The high participation rates in employer-sponsored 401(k) plans, and the low rates for IRAs, leads to a clear conclusion. We can increase retirement savings — create new savings — by making payroll deduction retirement savings available to more workers.

This is not a new idea. President Clinton's USA accounts were one attempt to bring retirement savings to all working Americans. Senator Bingaman first proposed universal access to retirement savings in his Secure Retirement for America Act in the 107th Congress. But it is time that we stopped talking. It is time that we started doing something to change the direction of the personal savings rate.

Access to payroll savings is important, but it is not enough. The Savings Competitiveness Act that I introduce today will expand savings opportunities and more.

This bill helps workers by providing an opportunity to save for retirement through payroll deduction at work. Employers are not required to contribute. Employers just withhold contributions and forward them to an IRA. We provide a modest credit to help small employers with the start-up costs.

This bill helps children by allowing Young Saver's Accounts to be used for kid's savings.

This bill helps small employers who want to contribute toward employees' retirement savings get started with a 3-year start-up credit for 50 percent of contributions to workers who are not highly compensated. And small employers who use "SIMPLE" plans can share the profits in a good year by making discretionary contributions to employees' SIMPLE IRAs.

This bill helps lower-income taxpayers by replacing the current Saver's Credit with a refundable credit, deposited to the taxpayer's retirement savings account. Families earning up to $50,000 would be eligible for a 50 percent credit. Those earning up to $60,000 would be entitled to a portion of the credit. Low-income savers would not be penalized by losing eligibility for food stamps and other benefits.

This bill helps retirees with modest savings by exempting $50,000 of their savings from minimum distribution requirements.

This bill removes traps for the unwary by simplifying distribution rules. It would conform 401(k) and IRA penalties so that workers who do not have advisers to lead them through a series of hoops do not get hit with excise taxes that those with a guide can avoid.

This bill takes some of the guesswork out of choosing an IRA. It would create a seal of approval for IRAs that have investment options similar to those in the Thrift Savings Plan and modest fees.

The Senate's automatic enrollment provisions are not law yet. So I have also included them in this new legislation.

I encourage my Colleagues to join with me to provide workplace savings opportunities for working Americans that now have none and to stop the unlimited growth of the deficit by adopting a pay-as-you-go requirement. I ask you to support the Savings Competitiveness Act.

152 CONG. REC. S2323-24 (daily ed. Mar. 16, 2006).

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