Andrew N. Liveris
Chairman and CEO
The Dow Chemical Company

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Thank you very much, Dr. (Irvin) Reid. *[Pres. Wayne State University]*.

Darwin has changed quite a lot since my grandfather arrived there from Greece about 100 years ago. Back then, life was pretty basic ... no electricity or running water, about 300 people ... and about 300,000 crocodiles.

Well, today Darwin is a city of about 300,000 people – with running water and electricity ... and a diverse, bustling economy ... but one thing hasn't changed ... the crocodiles are still there.

As you might imagine – and as Dr. Reid mentioned – I was a bit surprised to hear my friend, Larry Kudlow, call me both a great Australian and a great American – on the air – during that interview.

Well, I don't know about the "great" part, but I take that as a compliment, because I love both countries ... one, of course, because it is my home, and the other because it is the world's indispensable nation.

We Australians haven't forgotten that if it were not for the Americans at the Battle of the Coral Sea in 1942, we may very well have become an occupied country.

But even looking beyond that single event, the United States has shown remarkable leadership in war and peace, particularly since World War Two. I think that, especially in times of conflict and disagreement like today, people forget that record of leadership ... even here in this country.

Maybe – and this is the advice of a friend – we should do more remembering and less forgetting.

Maybe we should remember how American leadership, in founding alliances like NATO and ANZUS, presided over the world's security during its most dangerous days, containing the aggression of the Soviet Union, and eventually freeing Eastern Europe and other regions.

And we should also remember America's economic stewardship ... not only here at home, but abroad as well. Through the Marshall Plan, the IMF, the World Bank, the GATT, the G-7 and the WTO, the United States has presided over a world economic system that first brought opportunity to war-torn Europe and Japan ... then to the Asian Tigers and Latin America ... then Eastern Europe ... and now to 2.5 billion people in China and India.

And we might also remember that there never was a nation in all of history that guided two utterly defeated nations ... former enemies ... to restore themselves, within a generation, to the number two and number three economies in the world, both as strong democracies.

None of this would have happened without the international institutions championed by the United States, and reinforced by the willingness of this country to open its markets to the world ... creating a rising tide of growth, in John Kennedy's memorable phrase, that lifts all boats.

The United States also opened the doors of its unparalleled universities, welcoming the world's most astute minds to its graduate and business schools, offering its knowledge, its technology and its management systems to all corners of the globe.

As a result, it has long been commonplace to hear about the influence of the Chicago School in places like Chile or Poland, and equally commonplace to see Nobel prizes being awarded to first and second generation Americans ... and having said that, I might note that this year's prizes in medicine, physics, chemistry and economics have all been awarded to Americans.

And here let me note that this openness extended to the private sector, including my own company. Of the last six CEOs of Dow, five were born outside the U.S.: in Hungary, Italy, Bulgaria, the U.K. and Australia.

With all due respect to certain historical analogies that have become popular in the past few years, let me say that the Pax Americana dwarfs the Pax Romana in every conceivable way. No Roman, no Thracian, no Egyptian of Rome's golden age could imagine the living standards that are enjoyed today by hundreds of millions of people ... and they certainly couldn't imagine the freedoms or the individual opportunity, or – and this is probably the most important – the potential to improve upon all of these things.

America is indeed the indispensable nation of our times.

And that leads me to three things I want to talk about today:

- First, the importance of manufacturing to the health and vigor of the overall U.S. economy;
- Second, the forces that threaten U.S. manufacturing, particularly the high price of energy;
- And third, the far-reaching – and ominous – consequences of a weakened American manufacturing base, not only for the United States, but for the world.

Surely the indispensable part of this indispensable nation is the power of its mighty economy. For it is the American economy that underpins the international system that has guided this unprecedented era of stability and prosperity ... and that holds so such promise for humanity's future.

And that's what worries me ... because today I believe the American economy is under siege, and though I do not dismiss the many geopolitical threats at large in the world, I believe the greatest threat to the United States – and its world leadership – is internal, not external.

And here I will cite the threat to this country's most underappreciated economic pillar: the manufacturing sector, which includes something near and dear to my heart: the 2 trillion dollar (global) chemical and plastics industry, as well as the 50 billion dollar Dow Chemical Company.

But please, don't misunderstand. I am not worried about my industry's and my company's future per se. We will continue to produce essential products and continue to do well.

What concerns me is this question: Will the chemical industry and other manufacturers continue to be a part of the American economy?

I think that is a crucial question for policymakers in this country.

I am well aware there are those who believe that manufacturing is part of the "old economy" ... that making things is a low-value proposition. Many cite the decline of manufacturing as a percentage of GDP ... which 50 years ago accounted for 25% of GDP and today is about 12%.

In fact, I had the dubious pleasure of being at a meeting in Washington not long ago where I listened to a banker hold forth on why manufacturing isn't very important at all ... I think his exact words were "manufacturing has been deemed irrelevant." I had to bite my tongue until it just about bled.

"Irrelevant" is an odd characterization for a sector whose output is $1.5 trillion ... about the size of the entire economy of China and equivalent to the 8th largest economy in the world.

It is an odd characterization when you consider that manufactured goods make up over 60 percent of U.S. exports.

And it is a particularly odd statement when you consider that manufacturing directly employs more than 14 million people in the United States, and that one in six of all private sector jobs depends on manufacturing.

Odder still when you consider that manufacturing productivity consistently outpaces productivity growth in other sectors. Since 1987 manufacturing productivity grew by 94 percent, 2 ½ times faster than productivity for the rest of the economy.

And considering the fact that productivity is the single most important determinant of higher wages and benefits, it is not surprising that manufacturing jobs pay on average 25

percent more than non-manufacturing jobs ... in my industry, for example, an average job pays about $70,000 ... about half again the median household income in the United States.

Finally, "irrelevant" is an odd characterization for a sector that is responsible for over 70 percent of non-governmental R&D.

Ultimately, we have to decide. Is this to become a country only of services ... a two coast economy ... with finance based in New York, politics and law based in Washington, entertainment in California?

Can we really afford to be eternal consumers of what someone else invents and manufactures ... and make no mistake about it, invention and innovation are directly linked to manufacturing.

Someone has to invent and make that LCD for your computer and TV ... someone has to invent and make the epoxy resin that enables computers to be both tiny and powerful. Someone has to build and sustain the complex infrastructure to transmit data and voice.

Someone has to build the infrastructure of the future ... to bring clean water to all parts of the world through technology like Dow's reverse osmosis membrane ... and bring electricity to entire villages in Africa through advanced solar panels.
Now again, don't misunderstand. There is nothing wrong with the service sector, it surely adds tremendous value, but it cannot sustain an economy this powerful on its own.

Someone has to invent stuff and someone has to make stuff, and innovation and manufacturing are inextricably linked.

And so I, along with many others who appreciate this country's historic leadership, wonder how it is that policymakers can stand by as the great manufacturing pillar of this economy is being undermined.

And no, I am not talking about competition from emerging economies. We know that as the world evolves into a single global market, there are more competitors out there and they are tougher ... and that customers are more demanding than ever.

Anyone who has spent time working and living in this country knows that a bit of competition is more than welcome on these shores, and no one knows better than Americans that a free and fair world market creates wealth for everyone ... that rising tide that I mentioned earlier.

What concerns me are structural DISadvantages that are rendering much of U.S. manufacturing un-competitive ... certainly not because U.S. workers are falling behind ... they are still by far the most productive in the world ... but disadvantages that are well within this country's power to reverse ... but which continue somehow to be ignored.

In a recent report, the National Association of Manufacturers cited five of these structural problems. Together they add a staggering 32% to U.S. manufacturers' production costs, as compared to this country's major trading partners.

To put that number in its simplest terms, these disadvantages add $6 of cost for every hour of manufacturing production – which is a larger number than the total hourly cost in China.

While it is well known that Mexico and China have lower costs, it is generally not recognized that America's self-imposed structural costs put U.S. manufacturers at a disadvantage ... even with competitors in mature economies, including Canada, Japan, Germany, the United Kingdom, and France.

This is particularly damaging to manufacturing because unlike the service sector, a large percentage of our products are traded internationally ... so our prices are world prices and we are not readily able to raise them. Instead we tend to rely on increasing our productivity.

We have done very well in that regard. At Dow we have been averaging a 7% per year increase in productivity for more than a decade. At the same time we have reduced our energy use, per pound of product produced, by 22% over a similar period ... and we plan another 25% reduction by 2015.

I know that many other manufacturers here today can cite equally impressive numbers.

So what are the culprits that are driving higher costs in our manufacturing sector?

- #1, Corporate taxes;
- #2, Employee health and pension benefits;
- #3, Government over-regulation;
- #4, A deeply flawed civil justice system; and
- #5, High energy prices.

I will concentrate the bulk of my remarks on energy because I think it is a problem that strikes at the heart of this economy – or any economy, for that matter.

But first a brief review of the other four.

♦ Corporate taxes: Nobody seems to have noticed that while other countries have been lowering their corporate tax rates, here in the U.S. they have remained roughly the same.

On top of that, the tax credit for research and experimentation, which has been very helpful to the development of technology, has expired ... and its renewal is in legislative limbo. That's a big disadvantage.

♦ Structural disadvantage number two is the rising cost of employee health and pension benefits. Health care costs continue to rise – as does health insurance – in a country that is by far the world's largest spender on health care.

The solution is not for companies to shirk their responsibilities to their employees, although for smaller companies – which generate the majority of new jobs in this country – the cost can be crushing ... as much as 30% of their sales.

But surely, if we in manufacturing can improve our productivity, there are ways that the same can occur in the health care industry ... for example, more preventive medicine, computerization of records, more efficient use of expensive diagnostic equipment like MRIs (does every hospital need to own one?) and incentives for patients to act more like customers ... seeking the best treatment at the best price, as opposed to the best treatment at any price.

In Shanghai, you can get a physical in one hour that includes blood work, an EKG, chest x-ray, eye and hearing tests, blood pressure, an ultrasound, and an interview with a physician ... followed just three days later by a computerized report in Chinese and English.

Clearly, we have something to learn from others.

♦ Disadvantage number three is over regulation. The annual cost of federal regulations to manufacturers in this country is more than $10,000 per employee. For non-manufacturing businesses the cost is half that. No one is suggesting that all regulation is bad; much of it we couldn't live without. But surely there is room for simplification, and, again, for examining how other Western economies provide the same level of safety and security as the U.S. ... but at a lower cost to their manufacturers.

♦ Disadvantage number four is the civil justice system. What Voltaire once said of the Holy Roman Empire ... that it was neither holy, nor Roman, nor an empire ... can likewise be said of the Civil Justice System ... not civil, not just and not a system. As rapidly as the U.S. economy has grown since the 1990s, it hasn't kept pace with the business ... and it is largely a business ... of suing companies, especially manufacturers.

The United States has the most expensive tort system in the world, costing more than $250 billion a year, or 2.1 percent of GDP, compared to less than 1 percent in Japan, France, Canada, and the United Kingdom. By the way, tort costs in this country are more than the entire federal research and development budget.

But I don't want to leave the impression that legal reform is a hopeless case. Progress has been made at both the state level and the national level, including placing most class action lawsuits in federal courts.

Our efforts for reform will continue, with the ultimate goal of eliminating the economic incentives that encourage frivolous and unfair lawsuits.

♦ Competitive disadvantage number five is the high price of energy in the United States, particularly natural gas, and as I mentioned earlier, this problem is particularly threatening because energy powers civilization ... it is at the very core of modern life. Today 80% of the energy the world uses is in the form of fossil fuels ... and with the growth of large emerging economies like India and China ... demand for energy will increase by 50% over the next 25 years ... and 80% of that energy will remain in fossil fuels.

Yet this country doesn't seem to have a coherent energy policy.

Let me specifically focus on natural gas because it is the primary fuel used by manufacturers in this country.

As you know, natural gas is not a global commodity with a single world price, like oil. It is generally transported from wells by pipelines. While it can be chilled into a liquefied form and moved by specially-designed ships, only about 3% of the world's natural gas is transported this way.

Thus the price of gas is driven by local supply and demand.

For years, the price of natural gas was a competitive advantage for manufacturers in this country ... for two decades it was priced at between two and three dollars per million Btus. Most of it was produced here ... with some piped in from Canada.

Then about five years ago, the price began to increase dramatically. This alarmed most manufacturers, but especially companies like Dow Chemical because we use natural gas – and other petroleum products – not only to power our plants, but also as raw materials to make plastics and chemicals ... which in turn are used by virtually every industry from food to computers to medicine and much more.

At Dow in the year 2002, we spent about $8 billion on feedstocks and energy; this year that number will be well over $20 billion.

So the price of natural gas, which for years had been a competitive advantage for U.S.-based manufacturers, is today a competitive <u>dis</u>advantage because its price here is well above the price in other countries ... in both the industrialized and industrializing world.

A year ago at the time of the hurricanes, it was above $15 ... then it moved down to about $8, and recently it has ranged between $3.60 and $8.60.

But the trend is clear: the price of natural gas has jumped to a much higher plateau in the U.S., putting the manufacturing sector at a disadvantage.

You would hardly know any of this by reading the papers or watching TV ... or listening to the debate in Congress, but this country is in a natural gas crisis. Last year's

hurricanes underscored this problem, but they did not cause it. The cause is Economics 101: higher demand and static supply.
We use more natural gas because this economy is growing ... but also because the nation's power plants have been encouraged by the government to use it as a clean-burning fuel ... even though clean-burning coal and nuclear are often better choices for power generation.

Exacerbating the problem is the fact that those who supply natural gas have been largely prohibited by the government from drilling in the most gas-rich areas, including most of the outer continental shelf, where it is estimated there is enough natural gas to supply the United States for 20 years.

Moreover, we detect no sense of urgency to address the problem.

We seem to have a faith-based energy policy. We pray for warm winters and cool summers ... and the problem is now being disguised by the recent decline in price – which gives the false and dangerous illusion that the problem is taking care of itself. But truth be told, it is only good fortune that has caused the decline.
There is also no great clarion call to conserve energy, which is the most immediate and effective way to reduce our dependency on foreign energy. And there are very few tax or monetary incentives to conserve.

There does not even seem to be serious discussion – as there is in countries like China – on how best to use this country's various forms of energy – the U.S., for example is the Saudi Arabia of coal, and its nuclear technology is the world's most advanced ... and there are many promising alternatives such as solar, fuel cells and biomass.

Against this backdrop, manufacturers like Dow are doing the best we can. We have improved our energy efficiency. We have raised prices as much as our customers will allow. We've shut down inefficient plants.

We have also looked to innovation. For example, we have developed a plastic made from soybeans that, for many uses, like mattresses, is a better product than a plastic made from petroleum.
So by no means do we think that fossil fuels are the ultimate answer. They're not. But until we, as a country, can improve the scale and efficiency of alternative fuels, we must use fossil fuels wisely, balancing their economic, security and environmental impact.

And here, of course, the automotive industry has a pivotal role to play. And by the way, we in the chemical industry can help, not only with light-weight materials that are stronger, but with technology like advanced filtering systems that make diesel engines run cleaner and more efficiently.

But at the end of the day, companies like mine have to decide where to invest for the future ... where will we build our next $2 billion plant and along with it, create high-paying jobs for thousands of people?

We are looking – and beginning to invest – in places like China and the Middle East – where energy is much cheaper, and energy policy much more coherent and predictable. In short, our company – and our industry – will continue to grow. There is no question about it. It is simply a question of where.

Last year after the hurricanes, I went to Louisiana and to Texas to survey our plants. They are huge plants ... all of them were successfully shut down and secured before the hurricanes hit, which was an enormous accomplishment.

Many of our employees reported for work to secure the plants after having evacuated their families ... and many of them also lost their own homes.

Nonetheless they came to work, kept our plants safe – and worked around the clock to bring them back online.

It was nothing less than a heroic effort.

These are, needless to say, hard-working people dedicated to their families and communities.

They are counting on me, as the head of Dow, to retain our strong presence in the U.S. and to maintain their jobs.

As their leader, I will do everything in my power to make that happen. No one deserves it more than they do.

Yet, when faced with the choice of investing in the U.S. – with the certainty of higher and more volatile natural gas prices, how can I recommend investing here?

Dow isn't the only company making this kind of decision.

Currently there are plans to build more than 80 large-scale chemical plants across the globe in the coming decade ... with price tags of a billion dollars or more, and thousands of good jobs.

Not a single one is planned for the U.S.
Everywhere I go … the Middle East, Asia … governments want our industry. They want the investment and the high-paying jobs and the living standards that go with it. And they are building an energy infrastructure to make it happen.
Everywhere I go, that is … except the United States.

Sometimes I think I shock people when I say that doing business in the United States has some high risks ... not geo-political risks ... but risk derived from the things I've talked about today ... energy policy, regulation, the tort system, taxation and one other that I have to mention: education, particularly in science and math.

This country has for many decades been the world leader in science and math, but I believe a problem may be looming, given two developments:

- The first is low test scores at the K through 12 level compared to other economies ... both developed and developing;
- The second is the trend of many foreign students educated here at your excellent universities – still the world's best by far – returning home to apply their knowledge rather than staying here.

I'm not going to get into the numbers debate about who's producing the most mathematicians and scientists and who has the best quality.

What I will say is this: Science is at the core of technology and technology is at the core of human progress. Your Nobel Laureates are worried about the pipeline of talent, and in a world where globalization is an irreversible fact of life, the last best source of competitive advantage is the quality of your workforce. And that means a continuous pipeline of knowledge workers to work in jobs that pay well and assure high living standards.

We therefore must put our minds together and reverse the hollowing out of science and math education at the K through 12 levels.

In a global economy, companies have more choices than ever. And they will locate their plants, their jobs and all the wealth that accrues to those things, in places that are most hospitable to business ... including all of the things I've been talking about today.

[Pause]

As I said at the beginning, I am a proud Australian who loves America. I want to invest in this country, but as the head of a $50 billion global enterprise, my investment choices must be decided based on a single criterion: where is the best place to grow and to prosper?

If that place is not the United States of America, then something is drastically wrong, because this country has historically been the place where <u>everyone</u> wants to invest, and where millions of people come to work and to live ... right from the very foundation of this Republic.

Let's not kid ourselves. There is no such thing as a 100% service economy. Making stuff matters. Manufacturing is essential, and if your manufacturing base is eroding, then so eventually is your entire economy.

And if the economy of the world's indispensable nation is weakened, then the rest of the world will suffer.

Don't let anyone re-write the history books. If not for the Americans, the enemies of freedom and prosperity would have won.

If not for the Americans, old enemies would not today be close and prosperous friends.

If not for the Americans, we would not be on the threshold of something unique in the history of mankind ... growth and higher living standards spread equitably to hundreds of millions of people across the globe.

The world benefited enormously from American leadership yesterday ... it still needs that leadership today and it will need it tomorrow.

A big part of that leadership rests on this magnificent economy and a big part of that rests on its manufacturing base.

When you think back over the past 25 years, the demise of this great country has been frequently predicted ... the ascendancy of the Soviet Union in the 1970s ... the rise of Japan incorporated in the 80s ... the alarms in the early 90s that this economy was unable to grow more than 2% a year ... the theory that something called "imperial overstretch," would doom this country just as it had others, such as Spain in the 16th century and England in the 19th.

All of these theories and predictions were both reasonably and passionately argued. And all of them were dead wrong.

None of them seemed to take into account the great power of this country's economy, nor the great resolve and resourcefulness of its people ... once stirred to action.

Those of us who know this country well are not at all pessimistic. We know that sooner or later the giant will stir to action.

I am reminded sometimes of the observation, said only half in jest, I think, "that the United States can always be counted on to do the right thing ... once all other possibilities have been exhausted."

Let's hope that this time around, the giant will stir to action sooner rather than later. This country must reaffirm its commitment to a robust manufacturing base, to assure not only the continued health of its economy ... but its continued leadership in the world.

The United States needs manufacturing and the world needs the United States.

Thank you very much for your attention. I'd be happy to take any questions.

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