



**Testimony of Gregory S. Lang  
President & Chief Executive Officer, PMC-Sierra**

**United States Senate  
Committee on Finance**

**“CEO Perspectives on How the Tax Code Affects Hiring,  
Businesses and Economic Growth”**

**July 27, 2011**

Good Morning Chairman Baucus, Ranking Member Hatch and other members of the Committee, my name is Gregory S. Lang. I am the President and CEO of PMC-Sierra, Inc., headquartered in Sunnyvale, CA. PMC-Sierra is a leading semiconductor innovator transforming networks that connect, move and store digital content. Building on a track record of technology leadership, PMC-Sierra is driving innovation across storage, optical and mobile networks.

In my role as President and Chief Executive Officer of PMC-Sierra, I currently serve on the Board of Directors of the Semiconductor Industry Association and my testimony today reflects discussions I've held with my colleagues within the industry. I would like to thank the Committee for considering ways that Congress, through the U.S. tax code, may promote job creation and sustained economic growth for our country. This is a top priority for the U.S. semiconductor industry.

PMC-Sierra (Nasdaq: PMCS) is headquartered in Sunnyvale, California and for 2010 reported net revenues of \$635.1 million. In 2010, we experienced a broad recovery following a difficult recession the prior year. Revenue growth resumed across all of our major businesses including enterprise storage and WAN infrastructure, and with the improved economic environment in 2010, we experienced 28% year-over-year growth in net revenues. It is important to note that PMC-Sierra and the semiconductor industry as a whole represent America's largest export industry<sup>1</sup>, a leading driver of innovation and research, and a bellwether

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<sup>1</sup> Source: U.S. International Trade Commission. Industry Defined By: NAIC Codes 336411 (Aircraft); 334413 (Semiconductors); 336111 (Automobiles); 324110 (Petroleum Refinery Products)

of the U.S. economy. In 2010 global semiconductor sales reached \$298 billion<sup>2</sup>, with U.S. headquartered companies retaining approximately 50 percent of global market share. PMC-Sierra is just one of the more than 60 semiconductor companies headquartered in the United States that account for 80 percent of the nation's semiconductor production. Semiconductors are the building blocks that form the foundation for America's \$1.1 trillion technology and electronics industry, affecting a workforce of nearly 6 million Americans.

## **Background on Semiconductors**

America's semiconductor industry is critical to our country's economic growth and recovery. Invented here in the U.S., there isn't a single industry from agriculture to pharmaceuticals that has not been transformed by the innovation and success of the semiconductor industry.

Semiconductors, also known as microchips, are the fundamental enabling technology for the modern economy and an essential component of our nation's defense and homeland security, information technology, global finance, transportation, manufacturing, health care, and many other sectors of our economy. Indeed, semiconductors are components in a staggering variety of products – nearly everything with an on and off switch - and they are making the world around us smarter, greener, safer and more efficient.

In 2010, U.S. semiconductor companies generated over \$144 billion in sales, a record year for the industry.<sup>3</sup> Our industry directly employs nearly 200,000 workers in the U.S., and at almost \$100,000 annually the average wage of semiconductor workers far exceeds the U.S. average.<sup>4</sup> Further, studies show that semiconductors, and the information technologies they enable, represent 3 percent of the economy, but drive 25 percent of economic growth.<sup>5</sup> Our industry drives unprecedented productivity across all sectors of the economy and spawns entirely new industries, it is truly an engine of growth and it is vital to our economy.

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<sup>2</sup> 2010 World Semiconductor Trade Statistics (WSTS), Global Semiconductor Sales, <http://www.sia-online.org/news/2011/01/31/global-sales-reports-2011/global-semiconductor-sales-hit-record-298.3-billion-in-2010/>

<sup>3</sup> 2010 WSTS, Global Semiconductor Sales, <http://www.sia-online.org/news/2011/01/31/global-sales-reports-2011/global-semiconductor-sales-hit-record-298.3-billion-in-2010/>

<sup>4</sup> Source: SIA, U.S. DoL

<sup>5</sup> March 2009, "Maintaining America's Competitive Edge", Dewey & LeBeouf, [http://www.sia-online.org/clientuploads/directory/DocumentSIA/Research%20and%20Technology/Competitiveness\\_White\\_Paper.pdf](http://www.sia-online.org/clientuploads/directory/DocumentSIA/Research%20and%20Technology/Competitiveness_White_Paper.pdf)

## Semiconductors = \$298 Billion Industry



**#1 U.S. Export**  
**82% of sales outside U.S.**  
**≈ 50% of global market**

Employs ≈ 200,000 Americans

Supports 6 million U.S. High Tech Workers

Average compensation for semiconductor workforce = \$99,622

2009 U.S. median household income = \$49,777

\*1958 invention of the integrated circuit by Tia Jack Kilby, for which he later won the Nobel Prize in Physics.

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### The Ideal American Enterprise

Our shared challenge is to examine the role that private industry can and must play in sustained job creation and lasting U.S. economic growth. We believe that our country should make America the most attractive place in the world to do business, and that we should seek to specifically promote and encourage seminal industries that uniquely contribute to lasting economic growth. To that end, the semiconductor industry can be an instructive model.

With its humble beginnings in the 1950's, the semiconductor industry has fueled America's transition to an innovation economy. One need not understand exactly how a semiconductor works to understand that this great American invention will continue to illuminate the path of progress for years to come. This industry not only enables incredible technological advances that affect modern life, it now sets the pace for economic growth the world over. High-paying jobs, billions in annual revenue and increasing exports make the semiconductor industry a model for American growth.

The semiconductor industry is a key driver of U.S. innovation. As a whole, the industry invests approximately 17 percent of revenue in research and development, an amount higher than virtually any other sector, and SIA member companies account for 7 of the top 15 patent

recipients in the U.S.<sup>6</sup> With most of that R&D taking place in the United States that translates directly into high end U.S. jobs.

Harvard economist Dale Jorgenson has noted, “The economics of Information Technology (IT) begin with the precipitous and continuing fall in semiconductor prices.” Professor Jorgenson attributes the rapid adoption of technology in the United States to driving substantial economic growth in the nation’s gross domestic product since 1995. He notes, **“As a group, these [IT] industries contribute more to economy-wide productivity growth than all other industries combined.”**<sup>7</sup>

It is important to note that the semiconductor industry is export intensive, research intensive, and for those companies that manufacture, capital intensive, all attributes that contribute economic value and investment in the United States.

In the five year period from 2005-2009 total semiconductor exports averaged \$48 billion, on average, the highest of all exports; and were \$38 billion during the 2009 downturn, second only to petroleum refinery products. Last year, 82 percent of industry sales were outside the U.S. and over the past decade U.S. share of the market has remained around 50 percent. Further, about three-quarters of U.S. semiconductor industry R&D spending, 77 percent of U.S.-owned production capacity, 51 percent of U.S. industry worldwide employment, and 74 percent of the compensation and benefits paid by the U.S. industry are in the United States today.<sup>8</sup>

The combination of a global, high-export industry based largely in the United States and underpinning the \$1.1 trillion technology industry should serve as a primary model of the types of industries that government policies should promote and support. It is only pro-business and pro-growth policies targeted at high-yield industries that can provide lasting economic growth for America.

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<sup>6</sup> Source: “Patenting by Organizations 2010” April 2011, US Patent and Trademark Office

<sup>7</sup> March 2009, “Maintaining America’s Competitive Edge”, Dewey & LeBeouf, [http://www.sia-online.org/clientuploads/directory/DocumentSIA/Research%20and%20Technology/Competitiveness\\_White\\_Paper.pdf](http://www.sia-online.org/clientuploads/directory/DocumentSIA/Research%20and%20Technology/Competitiveness_White_Paper.pdf)

<sup>8</sup> March 2009, “Maintaining America’s Competitive Edge”, Dewey & LeBeouf, [http://www.sia-online.org/clientuploads/directory/DocumentSIA/Research%20and%20Technology/Competitiveness\\_White\\_Paper.pdf](http://www.sia-online.org/clientuploads/directory/DocumentSIA/Research%20and%20Technology/Competitiveness_White_Paper.pdf)

## **Opportunity to Maintain Leadership**

And yet, despite this unprecedented growth and truly inspiring example of American innovation, we are a nation and an industry at risk. We are at a pivotal point in the future of not only the semiconductor and technology industry but also in the very nature of what will define our economy and country in five, ten and fifty years from now.

We have the opportunity now to decide if America will retain its leadership in this seminal industry or whether, by failing to adopt policies that foster economic growth, we will let this industry and others like it slip away to become the crown jewel of another nation.

Make no mistake, innovation will continue and the semiconductor industry will succeed. What we are here today to discuss is whether we as a nation want that innovation and all of the jobs, advancement, capabilities and benefits that come with it to stay and prosper in the United States, or whether we will allow it to succeed somewhere else. It is ours to lose and with it will go the underpinning of what has become the innovation economy. Unlike many traditional industries, the semiconductor industry has a global market, is highly mobile, can be located anywhere and is actively recruited by foreign governments every day.

This Committee has the unique ability to examine the factors that stand in the way of high-growth, high-yield and highly innovative industries like ours. We must examine how the U.S. government can unleash the economic potential in these key industries. I submit that we should not allow another country to out-compete us for semiconductor industry investment

I believe that corporate tax reform can be one of the most effective tools that the U.S. Congress can use to get America growing again and to maintain our leadership in technology. A more competitive tax structure will allow U.S. enterprise to build and invest more of their resources in the United States. A restructured tax code means that companies will have more capital to invest in their products, which will create a need for more long-term jobs, and provide for sustainable long-term growth for the U.S. economy.

Most importantly, a competitive tax system will eliminate the disincentives to building manufacturing and R&D facilities here in the United States and creating the jobs those facilities will provide. However, this is only one solution in a larger roadmap for an innovation ecosystem. Congress must also look to liberalize trade, high-skilled immigration reform, building our science and engineering infrastructure and reducing unnecessary regulatory burdens in order to build a truly competitive environment for U.S. companies.

## Tax Reform Policy Objective: Global Competitiveness

While the U.S. semiconductor industry remains, at this time, the undisputed leader in this critical technology, it operates in a globally competitive marketplace, and other countries are aggressively pursuing leadership in this sector. Specifically targeted as a high-growth, strategically important industry, other countries actively recruit U.S. semiconductor companies to their shores by offering a combination of generous credits, grants, and reduced tax rates to invest and build operations in these countries.

A prime example of this situation is in the capital-intensive building and operation of a semiconductor fabrication facility. It costs nearly \$7 billion to build and operate a new facility in the United States. By comparison, it costs approximately \$1 billion less to build and operate that same facility overseas over ten years. The main cost differentials are not labor or materials as some might think. Instead the \$1 billion difference is made up in the form of tax benefits, holidays, grants and other benefits offered by other countries to recruit and attract semiconductor companies to their shores.<sup>9</sup>

In contrast, companies based in the U.S. operate at a disadvantage under current U.S. tax policy. The combination of high corporate tax rates and a weak and temporary research and development (“R&D”) tax credit makes investments in the United States less attractive. A worldwide tax system puts American companies at a distinct disadvantage compared to their global competitors and acts as a disincentive to reinvesting foreign profits in the United States.

Corporate tax reform is one element of an innovation and competitiveness agenda that can help maintain U.S. leadership in this critical industry. It is worth noting that the semiconductor industry is diverse in its makeup. This industry includes manufacturers and non-manufacturers. Our business models vary considerably. Some companies are subject to greater degrees of taxation than others because of varying business models. Yet all agree that fundamental reform is necessary and that it rests on three key elements:

- **Reducing the corporate tax rate** to align more closely with globally competitive rates.
- **Adopting a territorial tax system** that is similar to those used by most of our global competitors.

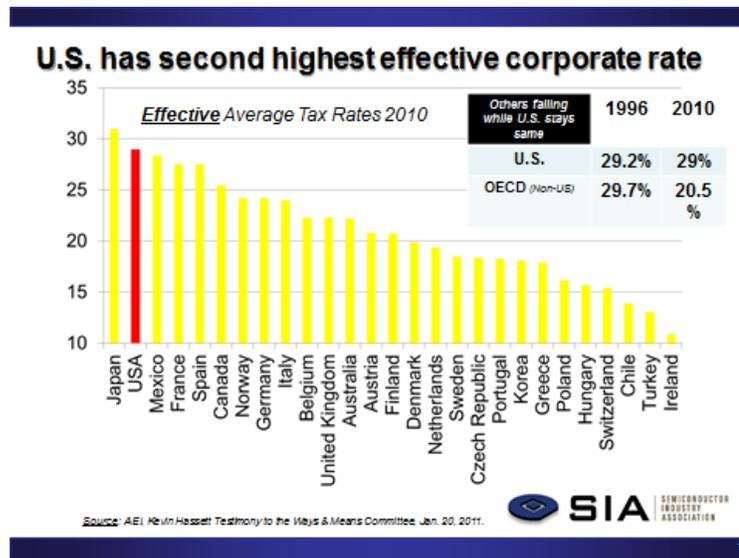
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<sup>9</sup> Paul S. Otellini, “Impact of Taxes on U.S. Semiconductor Company Decisions,” Intel Corporation (March 31, 2005) and Abbie Gregg, Inc., “The Paradigm for Financing Fabs,” Albany Symposium 2005 on Global Nanotechnology (September 26-28, 2005). Statement of Craig R. Barrett before Subcommittee on Select Revenue Measures, House Ways and Means Committee (June 22, 2006).

- Enacting a permanent and robust package of **incentives for research and innovation** that compete with those in other countries.

## Globally Competitive Tax Rate

The United States should adopt a globally competitive tax rate in line with the OECD average of 25 percent and with non-OECD country rates.



Currently, the U.S. combined federal and state corporate tax rate is 39.2 percent, approximately 14 percent above the OECD average of 25 percent. The U.S. rate may soon become the highest in the world if Japan follows through with its initiative to lower its corporate tax rate.

Perhaps more significantly, U.S.-based companies face significant competition from countries outside the OECD that have corporate tax rates well below the U.S. rate. For example, the rate is 15 percent in China for new high technology enterprises, 17 percent in Hong Kong, 25 percent in Malaysia, 17 percent in Singapore, and 17 percent in Taiwan. Moreover, most all of these countries offer substantial tax “holiday” incentives for new high technology investments, which effectively lowers the rate to zero or single digits.

I do not think it's reasonable for the U.S. to match these incentives dollar for dollar, especially when they amount to an effective rate of zero. Nonetheless, policymakers must be aware of these policies. Our current tax rates incentivize the location of high-tech operations

outside of the United States to avoid the high levels of taxation in the U.S., and while tax incentives are not the only factor in global competition, increasingly they can skew investment decisions.

### **Shift to Territorial Tax System**

Our worldwide tax system creates an additional disincentive for U.S. companies. Meaningful tax reform should include a move to a territorial approach. This would subject U.S.-based companies to tax only where their products are sold, a system that almost all foreign competitors enjoy today. Our current deferral system encourages the reinvestment of capital outside the U.S.

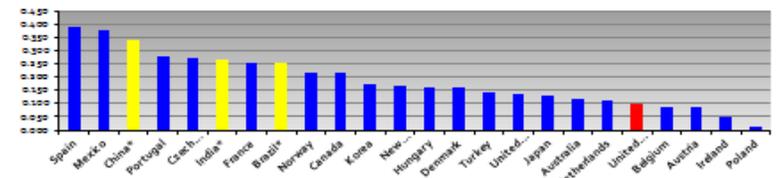
A territorial system would enable companies to repatriate their profits to the U.S. without a heavy tax penalty, allowing American companies to make financial decisions concerning foreign profits based on sound economic principles. In designing a territorial tax system, Congress should consider the approaches adopted by other countries and ensure that U.S.-based companies have the benefit of systems similar to those of other countries.

### **Permanent and Enhanced R&D Credit**

Finally, comprehensive tax reform should provide strong and permanent incentives to create jobs and encourage research and development (“R&D”) in the U.S. The phenomenal advances in semiconductor technology and the ability of the U.S. industry to remain the world leader flows from the unique U.S. innovation ecosystem, leveraging university, industry, and government scientists and engineers performing a range of complementary research and development activities. This is the engine of the innovation economy, which we cannot allow to wither on the vine. America must actively pursue a research agenda in order to remain competitive with the rest of the world.

As noted previously, U.S. semiconductor companies invest an average of 17 percent of revenues in product-related R&D, approximately \$25 billion in 2010. This is one of the highest percentages of any industry. Coupled with capital expenditures of 11 percent of sales, our industry invests nearly 30 percent of its revenues to drive future growth. Even in the midst of decreasing revenues in the recession, companies like mine sustained their R&D investments. Yet, the R&D tax credit in the U.S. is weak compared with our global competitors and has lapsed 13 times over the past three decades.

### U.S. R&D Tax Credit fell from #1 in 1990 to 24<sup>th</sup> by 2009



Source: Information Technology Industry Foundation, Aug 2002; OECD 2010

### Starting Point: Tax Reform

A similar situation confronted the industry in the 1980s, when the U.S. semiconductor market was specifically targeted through harsh trade restrictions by foreign governments. Fortunately, through Congressional and government action in enforcing U.S. trade laws and in partnering with the industry to regain its technological footing, the industry was restored as the world leader and continues to enjoy this leadership position today. As before, our government should act to maintain the future and pace of American enterprise and innovation.

Tax reform would be a tremendous step forward in unleashing the full potential of American innovation. However, this is only one solution in a larger roadmap for an innovation ecosystem. Congress must also look to liberalize trade, advance high skilled immigration reform, build our science and engineering infrastructure and reduce unnecessary regulatory burdens. All of these pieces advanced together could serve to transform our economy into a robust engine for innovation and prosperity.

In contrast, our current policy assumes that the U.S. will always retain our leadership position in semiconductors. The global landscape has changed and U.S. tax policy must change to meet this competitive challenge. I believe the Congress should work together to enable

private enterprise to compete, innovate and grow the economy. The starting point is comprehensive pro-growth tax reform.

