

## **Opening Statement of Kathleen A. Walsh \***

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### **Before the U.S.-China Economic and Security Review Commission**

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#### **Introduction**

Co-Chairmen Shea and Wessel, Members of the Commission, I am honored to appear again before you to discuss the issue of research and development (R&D) in China. It is a topic that I have researched and written on now for more than a decade, and I have found there is still much more to learn in this regard. I commend the Commission’s persistent interest and attention over many years to this and related technology dynamics that are taking place in China, which obviously affect a wide range of US interests.

The ultimate question, of course, is how do we ensure that US interests are secured in the face of China’s fast-paced economic development, rising power and influence around the globe, growing attraction as a high-tech investment center and potential innovation hub, amid continuously ambitious modernization plans? China has conveniently laid out its long-term strategy for becoming a more innovative society over the coming decades. We cannot be sure whether China will, in fact, fully achieve these lofty ambitions; we can be sure that they will try.

#### **China Outlines Its Plan for Becoming an Innovative Power**

As outlined in the 11<sup>th</sup> Five Year Plan (2006-2010) and complementary 2006-2020 Medium- to Long-Term Strategic Plan for the Development of Science and Technology, China has moved into a new phase in its long-term development strategy that now prioritizes science and technology (S&T) as the main driver of China’s continued modernization drive. This represents a continuation of a decades-long plan and continuous State-sponsored efforts to advance and accelerate China’s economic development. Shifting into this latest phase is significant because, as with China’s persistent efforts to advance and reform its agricultural and industrial sectors over the past three decades, during this latest, third period of modernization, China can be expected to steadfastly pursue and support S&T and R&D advances as the focal point of its modernization efforts *probably for decades more to come*. In other words, this is no fleeting, fanciful, or frivolous undertaking but a serious, systematic, long-term investment and implementation strategy. The question becomes then not one of sustaining the necessary political will to pursue such a bold approach (which appears nearly certain) but of China’s actual ability to achieve its aims and how rapidly these goals can be reached. Given the rate of China’s development to date (past, present, and future challenges notwithstanding and barring any catastrophic disruption), one cannot help but be bullish about China’s prospects in this regard.

*Chinese Domestic R&D Spending is Rising*

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As widely reported in the press, China's spending on R&D has been rising quickly. The *China Business Review* notes that "China's research and development (R&D) spending has been growing about 17 percent annually over the past 12 years."<sup>1</sup> In 2007, spending on R&D reportedly amounted to over 300 billion RMB or 1.49 percent of gross domestic product (GDP), placing China among the world's leaders. As a National Science Foundation report recently observed, "When set against China's rapidly growing economy, the rise in the R&D-to-GDP ratio is remarkable."<sup>2</sup>

China's stated goal is to become an "innovation-oriented society" and to develop the capacity to conduct "indigenous innovation." This means increasing R&D expenditures to 2.5 percent of annual GDP by 2020. PRC officials also acknowledge the need to focus more of this funding on both basic and applied R&D so as to foster sustainable innovation (currently most R&D in China is focused on experimental development efforts). Yet, officials are also cognizant of the need to spend R&D funds in a way that will produce *more* innovative results and returns than extensive state support for R&D has produced in the past. Other challenges persist as well, including the growing demand for highly skilled workers with an understanding of modern business, management, and innovation practices.

At present, however, China possesses what would appear to be a significant capacity to continue its support of R&D investments over the long term. While the PRC Government has long invested state funds in S&T and R&D-oriented projects (e.g., the Torch, 863 and 973 programs), the current influx of foreign investment, foreign exchange holdings, developing venture capital system, rising trade volume, and growing public prosperity all point to even more financial resources being available for continued government and private-sector support for R&D initiatives over time. Meanwhile, Chinese officials continue to support and to reform the R&D funding process to more closely align it with global best practices and funding levels in order to promote a more productive return on investment than the PRC has experienced in the past.

As important, the rise in Chinese R&D spending by both state and private-sector enterprises has been accompanied by a conceptual sea-change among senior policymaking circles that R&D expenditures should be more market- or demand-driven than the strictly interpreted mandates of the past. For instance, when describing China's present plans for S&T and R&D investments, PRC officials characterize these more as "guidelines" than hard-and-fast end points to achieve while emphasizing an understanding of the need for more flexibility and even occasional failures. To the extent that this latter approach takes hold in China—particularly a cultural acceptance of failure as an inherent risk when it comes to S&T and R&D investments—this could signify a new era in Chinese technological development and potentially a more innovative spirit and unique innovative style. It is something worth watching as its emergence or lack thereof could be an important indicator of considerable changes and/or progress to come (or not).

#### *Foreign R&D Investments Continue to Grow in Number*

If figures published by Chinese officials are accurate, the number of foreign R&D centers in China by the end of 2007 was 1,160. This would mean they have nearly doubled in the last three years, and almost tripled since 2002. What are we to make of this sustained and now widely recognized trend, and what is the US strategy for addressing it? Although recognition has grown in the US and internationally that this is an important trend worth collecting more data on, current data collection methods and reporting remain limited and too time-delayed as to be most useful in contemporary corporate or government decisionmaking. Making this trend more

intriguing and perhaps even more significant is that it *appears* foreign R&D investments in China are being promoted and, indeed, expanding into new and traditionally heavier industry sectors such as commercial shipbuilding, although this appears still to be in the early stages. At the same time, it is clear that it is an objective of PRC policy to exploit such commercial and dual-use opportunities to enhance its defense industrial sector as part of ongoing military modernization efforts, not unlike the defense sector in the United States and other countries which relies in part on commercial market investments and innovations. In other words, China's economy is beginning to look more and more like our own, though China still lags behind in critical areas, particularly defense.

### **What Will Be the US Strategy for Maintaining Our Innovative Edge?**

China's grand ambitions and expected large-scale R&D funding initiatives over the coming years if not decades raise the question of what will be the US strategy to ensure our own innovative and competitive edge in the face of a potentially more innovative Chinese economy. Will it require ramped-up support for existing policies and practices or something more, something new, or an entirely different approach? Is it an unprecedented opportunity that the United States can and must exploit more fully, or does it represent a growing concern against which we would be wise to defend further against, or a mix of each?

It is likely to fall to the next administration and Congress to make this critical decision. This Commission's continued work and attention to the issue, therefore, could serve as an important input into this process and aid development of a comprehensive strategy that will preserve, and hopefully enhance, our own innovative, competitive advantage over the coming decades in both the commercial and defense realm.

### **Conclusion**

The PRC has entered an important new phase in its long-term development plan, and China's current strategy for becoming a more innovative economy and society is clear. The means and ends are outlined, leaving only the question of whether or not China can fulfill these ambitions.

For the United States, the path is less clear. What does the rise of a potentially more innovative Chinese economy suggest in terms of US means and ends when it comes to pursuing science and technology, research and development, and innovation whether in the commercial or defense sector? This is a vital decision that the next US administration and Congress must face head on and articulate a strategy that will support and sustain US innovation. Given the current and probably enduring advantage that the US higher education system has over China's, this suggests that greater support for advanced education programs and the students themselves should be a key part of such an effort.

Again, let me thank the Commission for inviting me to this forum. I look forward to discussing these issues further and answering any questions you may have.

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<sup>1</sup> Evan Thorpe, "Bringing R&D to China," *The China Business Review* (March-April 2008).

<sup>2</sup> National Science Foundation, Division of Science Resources Statistics, *Asia's Rising Science and Technology Strength: Comparative Indicators for Asia, the European Union, and the United States*, NSF 07-319 (Arlington, VA: NSF, May 2007), pp. 15-17.