CHINA'S FAST CATCH-UP IN RESEARCH AND DEVELOPMENT

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Executive Summary

1. To promote sustainable economic growth, China has expanded R&D (Research and Development) investment enormously in recently years. The country is now the world's second largest investor in R&D, just behind that of the US.

2. The importance of promoting R&D and indigenous innovation capacity is particularly highlighted in China's 12th Five-year Program (FYP, 2011-2015). This strategic FYP aims to make scientific development a primary objective, strengthen strategic high-technology sectors, and build up infrastructure.

3. China's R&D spending accounted for 1.76% of the country's GDP in 2010 which paralleled those in some advanced economies such as Belgium, Canada and the Netherlands. Within a decade China is expected to catch up with the US and Germany in terms of R&D intensity.

4. China's business sector now dominates the country's R&D activities with a spending share of more than 70%. As a result, about 70% of China's invention patent applications were lodged by the business sector in 2010. With only a 10% share of all enterprises in China, large and medium enterprises (LMEs), in particular, contributed 68% of invention patent applications by all firms in 2010.

5. Empirical evidence shows that foreign-invested firms, particularly those owned or controlled by investors from Hong Kong, Macao and Taiwan, tend to spend proportionally less on R&D in China. Indigenous private firms are not keen to invest in R&D either. As a result, state-owned enterprises (SOEs) become the main players in the R&D sector.

6. China has been successful in attracting high-tech firms and promoting exports in this sector. The country has been the largest high-tech exporter since 2006. However, China's success is not due to indigenous innovation. Almost 80% of

China's high-tech product exports are now associated with processing trade which depends on imported materials and a high presence of foreign firms.

7. To maintain the current momentum of growth in R&D activities, policy makers have to deal with several issues including regional disparity in R&D. The latter becomes part of the broader regional inequality problem affecting the Chinese society and its economy.

8. The emergence of enterprises as the key R&D player tends to boost market-oriented activities at the expense of basic and applied research. The expenditure share of the latter has declined continuously in recent years. It was only 17% in 2010, and hence well behind the average of 50% in major developed economies.

9. SOEs have invested more in R&D but they are less efficient. Policy changes are urgently needed to promote and attract R&D investment by indigenous private firms as well as foreign-owned enterprises. For this purpose, the protection of intellectual property rights is vital and still needs improvement.