Foreword

The OECD Science, Technology and Industry Scoreboard 2013 *draws on the latest internationally comparable data to uncover the strengths of OECD and other leading economies and explore the continuing challenges to overcome the effects of the recent financial and economic crises. It features indicators traditionally used to monitor developments in science, technology, innovation and industry, and complements them with new and experimental indicators that provide new insights into areas of policy interest.*

The STI Scoreboard is not about "ranking" countries or developing composite indicators. It is about giving policy makers and analysts the means of comparing economies with others of a similar size or with a similar structure and monitor progress towards desired national or supranational policy goals. It draws on the OECD's efforts to build the data infrastructure needed to link actors, outcomes and impacts; it highlights the potential and the limits of certain metrics and points to directions for further work.

Indicators are pointers. They do not address causal relations. Moreover, the validity of a set of indicators depends on its use. The selected indicators have been developed with the following criteria in mind:

- *Indicators should be based on high-quality statistics and robust analytical principles and be measurable internationally, over time and with prospects of improvement.*
- *Indicators should be relevant, particularly for decision makers.*
- *Experimental indicators that complement more established ones bring new perspectives and advance the measurement agenda. They help to stimulate continuing and new policy debates and uncover new dynamics.*

The first chapter, Knowledge economies: trends and features, *provides a broad perspective. It looks at innovation, firm dynamics, productivity and jobs against the backdrop of the economic crisis. It explores the new geography of growth through the lenses of global value chains, the changing landscape of innovation, the features of science today and the characteristics of innovation beyond formal research and development.*

Six thematic chapters focus on areas of key policy interest:

- **Building knowledge** *looks at the knowledge assets that many firms and governments view as their current and future sources of long-term sustainable growth. It focuses on indicators of knowledge-based capital and on the jobs and employment related to it, scientific skills and education, and investment in research. It also presents experimental indicators of public funding and new estimates of R&D tax incentives.*
- **Connecting to knowledge** *helps inform the policy debate with a set of metrics on the variety and nature of mechanisms for knowledge exchange. Among the indicators presented are the impact of scientific collaboration (based on patent citations) and science-industry linkages (based on citations of non-patent literature in patent documents). Also included are new indicators on*

researcher mobility that track the careers of scientists who publish in scholarly journals and on the extent of firms' collaboration in innovation processes.

- **Targeting new growth areas** *examines the direction of countries' scientific efforts and the technologies on which they build their comparative advantage. It presents R&D and innovation indicators in biotechnology and nanotechnology and in health, environmental and information and communication technologies, and looks at developments in smart ICT infrastructure. It also reveals how the development of technologies accelerates over time and how innovations emerge from the combination of different technologies.*
- **Unleashing innovation in firms** *is concerned with the dynamism of the business sector and shows the strong contribution of young firms to job creation using new microdata-based indicators. It looks at the main ways in which firms innovate and proposes a novel indicator on the intellectual property bundle to point to firms' joint use of patents, trademarks and industrial designs to protect their innovations. New data on registered designs provide information on how countries protect creativity. Other indicators address the extent to which governments create the conditions for young innovative firms to grow and the broader policy environment for innovation.*
- **Competing in the knowledge economy** *looks at how countries seek to build their competitive strengths and uses a wide range of more sophisticated indicators than those that are generally available. It considers industrial specialisation and diversification, R&D and trade specialisation, technological advantages and relative strengths, as well as the characteristics of innovative firms and their use of new technologies in business processes.*
- **Participating in the global economy** *draws out the implications of structural characteristics for economies' participation in global value chains. Indicators related to firms' size, survival and growth and to foreign affiliates accompany employment patterns in key industries and linkages between manufacturing and services. Novel indicators building on the OECD-WTO Trade in Value Added Database shed new light on economies' participation in global trade and value chains and the implications of this participation for jobs.*

The main audience of the STI Scoreboard is policy analysts with a good understanding of the use of indicators and all those engaged in producing indicators for analytical or policy-making purposes. A few paragraphs introduce each indicator and offer some interpretation. They are accompanied by a box called "Definitions" for those less familiar with the methods used. A box titled "Measurability" summarises measurement challenges, gaps and recent initiatives.

All charts and underlying data can be downloaded via the Statlinks (hyperlink to a webpage). For the first time, additional data that expand the coverage of countries and time periods are available in the Statlinks. New tools to visualise indicators and help users develop thematic and country profiles based on their own interests will be available on the STI Scoreboard website.