



Innovation and technology development

Figure 1 – Gross domestic expenditure on R&D as a ratio to GDP in selected places

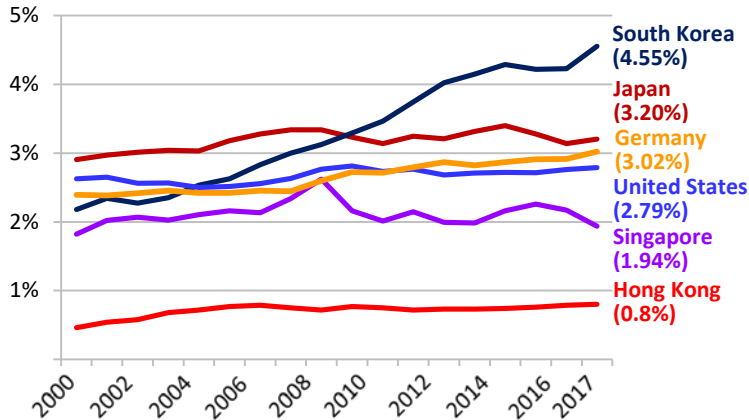
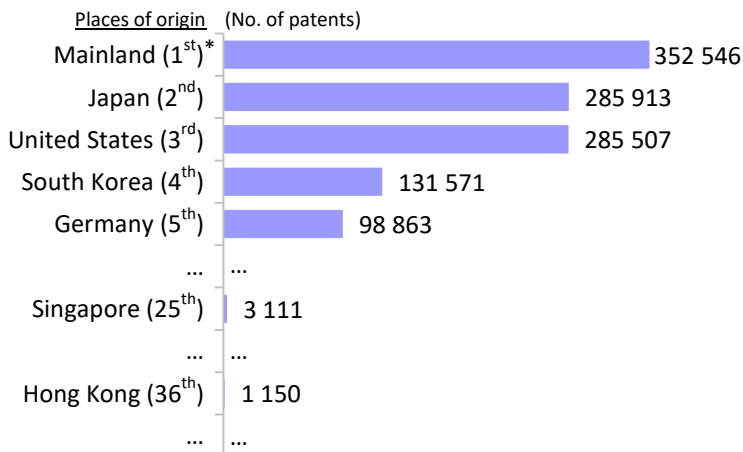
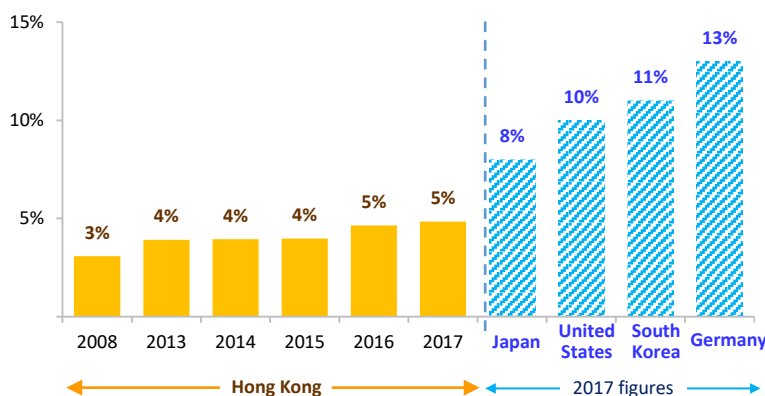


Figure 2 – Number of patent successfully filed by applicants' place of origin in 2017



Note : (*) Ranked by the number of patents successfully filed.

Figure 3 – Share of gross domestic expenditure on R&D activities performed by the government



Highlights

- Innovation, driven by research and development ("R&D"), is considered a key driver for productivity growth and economic development. The gross domestic expenditure on R&D ("GERD") as a ratio to gross domestic product ("GDP") is an indicator widely used to measure the intensity of R&D.
- In Hong Kong, GERD as a ratio to GDP has been standing at a low of less than 1% since 2000. In 2017, GERD accounted for 0.8% of GDP, lagging behind many developed economies such as South Korea (4.55%), Japan (3.20%), Germany (3.02%), the United States (2.79%) and Singapore (1.94%) (**Figure 1**).
- Low R&D investment has inevitably resulted in limited number of research output, as evidenced by the number of patent filed. Among 146 economies surveyed in 2017, Hong Kong ranked 36th with merely 1 150 patents filed. This stands in sharp contrast with top-ranking Mainland, Japan, the United States, South Korea and Germany (**Figure 2**).
- In Hong Kong, R&D activities performed by the Government represented a small share of GERD, remaining at a low of 3%-5% over the past decade, whereas that performed by business and higher education sectors shared over 95%. This differs from many developed economies such as Germany (13%), South Korea (11%), the United States (10%) and Japan (8%) where the government tended to be more active in engaging in R&D activities (**Figure 3**).

Innovation and technology development (cont'd)

Figure 4 – Proportion of business establishments undertaken technological innovation activities

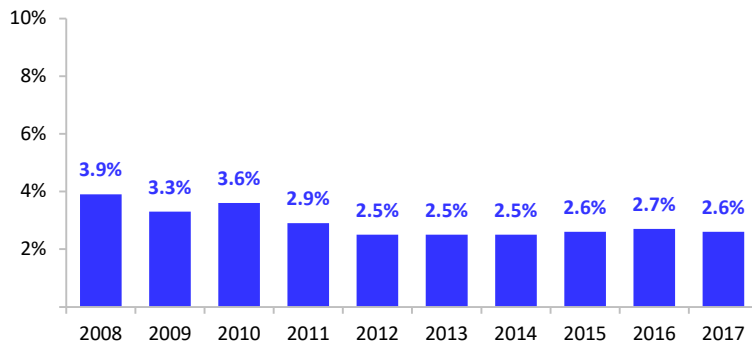


Figure 5 – ITF funding and business sectors' expenditure on technological innovation

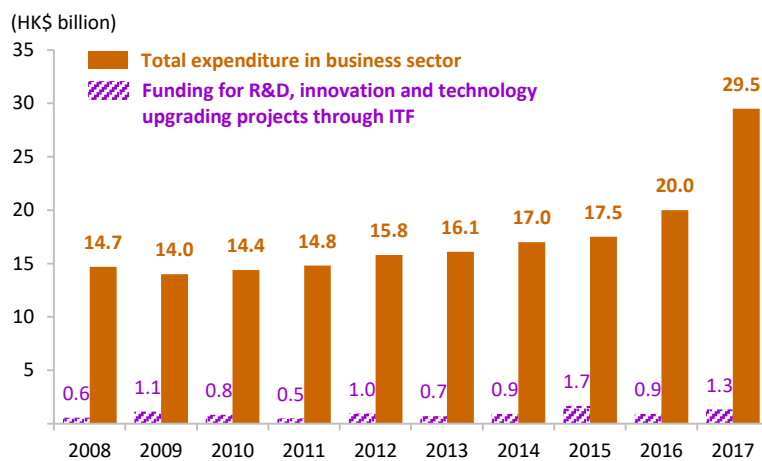
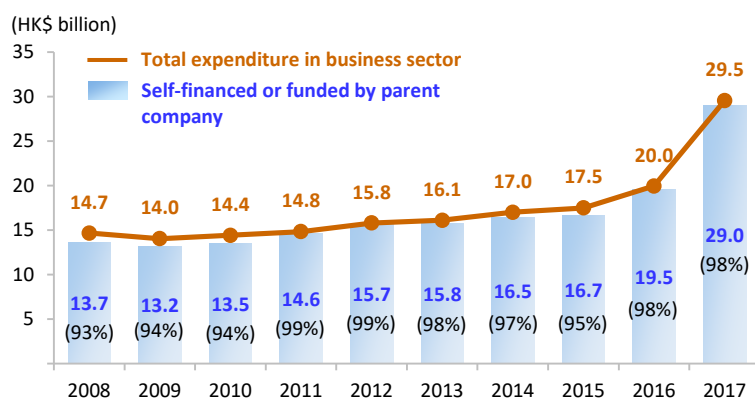


Figure 6 – Expenditure on technological innovation activities undertaken by business sector



Highlights

- While the business sector accounts for a sizable share of GERD, the proportion of companies in the sector undertaking technological innovation activities has shrunk from 3.9% to 2.6% during 2008-2017 (**Figure 4**).
- To assist local companies in upgrading their technological level and introducing innovative ideas to their businesses, the Government has been providing them with funding through the Innovation and Technology Fund ("ITF") since 1999.
- Over the past decade, the funding through ITF has doubled from HK\$0.6 billion to HK\$1.3 billion. Yet the amount pales in comparison with the total expenditure on technological innovation of the business sector over the same period (**Figure 5**).
- Amid limited government funding, the total expenditure by business sector on technological innovation activities surged from HK\$14.7 billion in 2008 to HK\$29.5 billion in 2017 (**Figure 6**). During the period, the proportion financed by the companies themselves (self-financed) or by their parent company remained at a high level, increasing from 93% to 98%.

Data sources: Latest figures from Census and Statistics Department, Organisation for Economic Co-operation and Development, and World Intellectual Property Organization

Research Office
Information Services Division
Legislative Council Secretariat
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Tel: 3919 3582

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