

# R&D Tax Incentives: Korea, 2020

## Design of R&D tax relief provisions

Korea provides R&D tax relief through a hybrid R&D tax credit and a volume-based investment credit for machinery and equipment and buildings.

**Table 1. Main design features of R&D tax incentives in Korea, 2020**

		R&D tax credit	R&D investment credit
<b>Type of instrument</b>		Hybrid (volume or increment)*	
<b>Eligible expenditures<sup>†</sup></b>		Current	
<b>Headline rates (%)</b>		Volume: 1-2 [1+0.5 R&D expense ratio]**, 8 (HPE), 25 (SME)***	Increment: 25, 40 (HPE), 50 (SME)****
<b>Refund</b>		No	
<b>Carry-over (years)</b>		10 (carry forward)	5 (carry forward)
<b>Thresholds &amp; ceilings</b>	Base amount	R&D spending in the previous year.	n.a.
	Ceiling	Tax credit capped at 2% of R&D spending (large firms)	No

R&D expense ratio=R&D/revenue; HPE: High Potential Enterprise (do not qualify as SME, respect rules about being part of a group and have sales below KRW 500 billion); \*: the R&D tax credit generally equals the greater of either 1) the volume-based tax off-set, or the 2) incremental tax off-set; \*\*: 20-30 for large firms and HPE under the Growth Industry and Basic Technology scheme; \*\*\*: 30-40 for SMEs under the Growth Industry and Basic Technology scheme; \*\*\*\*: 40 for firms losing the SME status and HPE. Korea also offers an income-based tax incentive for outcomes of R&D activities. This incentive is beyond the scope of this note.

Note: For more details, see [OECD R&D Tax Incentive Compendium](#) and [Eligibility of current and capital expenditure for R&D tax relief](#)

Source: OECD, R&D Tax Incentives Database, <http://oe.cd/rdtax>, March 2021.

### Key features:

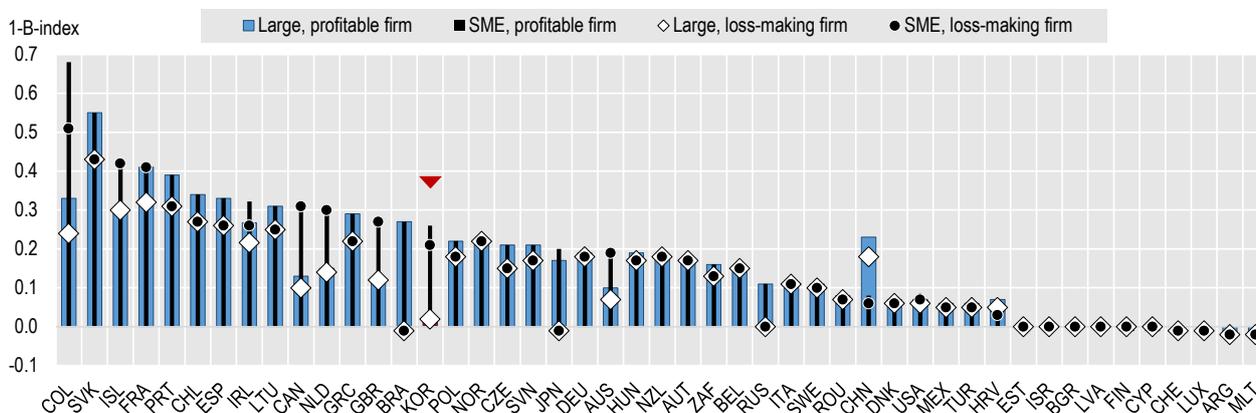
- Under the hybrid R&D tax credit, R&D tax relief generally equals the larger of the volume-based or the incremental tax offset.
- In case of insufficient tax liability, unused credits can be carried forward for 10 years (previously 5 years) under the hybrid R&D tax credit, and for 5 years under the R&D investment credit.
- Under the volume-based R&D tax credit, tax benefits are limited in the case of large companies where the maximum tax credit rate – a function of the R&D expense ratio – is capped at 2%.

## Generosity of R&D tax support in 2020

Differences in the design of R&D tax incentives drive significant variation in the expected generosity of tax relief per additional unit of R&D investment. In 2020, the marginal tax subsidy rate for profit-making (loss-making) SMEs in Korea is estimated at 0.26 (0.21), above the OECD median of 0.20 (0.18). The tax subsidy rate for large firms equals 0.02 (0.02) in the profit (loss) case, below the OECD median of 0.17 (0.15).

**Figure 1. Implied tax subsidy rates on R&D expenditures: Korea, 2020**

1-B-Index, by firm size and profit scenario



Note: Implied marginal tax subsidy rates, presented for different firm size and profitability scenarios, are calculated based on headline tax credit/allowance rates (see [methodology](#) and [country-specific notes](#)), providing an upper bound value of the generosity of R&D tax support, not reflecting the effect of thresholds and ceilings that may limit the amount of qualifying R&D expenditure or value of tax relief. Source: OECD, R&D Tax Incentives Database, <http://oe.cd/rdtax>, March 2021.

## Recent developments in R&D tax relief provisions

Regular reforms of R&D tax incentives lead to continuous changes in the availability, scope and generosity of R&D tax incentives. Such reforms relate to the launch of new tax incentives, the R&D definition adopted for tax purposes, changes in tax credit and allowance rates, adjustments of thresholds or upper ceilings on qualifying R&D expenditure or tax relief amounts, or changes in the terms and availability of refunds.

In 2020, changes in the availability and scope of R&D tax incentives represented the most frequent type of policy reform ([OECD, 2020](#)), along with adjustments to the headline R&D tax credit/allowance rates and adjustments of thresholds or upper ceilings on qualifying R&D expenditure or tax relief amounts. In response to the COVID-19 pandemic, several countries increased the generosity of R&D tax relief or introduced modifications to the administration of R&D tax incentives to facilitate and accelerate R&D funding.

In 2020, **Korea** undertook **two changes** in its R&D tax relief provisions:

- The scope of the R&D tax credit was extended to additionally cover expenses incurred for innovative growth-related technology investments (e.g. biotechnology, design and manufacturing of system semiconductors, etc.). In addition, R&D costs incurred by an overseas enterprise that is controlled by a domestic corporation became eligible for the R&D tax credit.
- The R&D tax credit carry forward period was extended from five to ten years.

None of these policy changes were related to **the COVID-19 crisis**.

## Trends in the generosity of R&D tax support

The generosity of R&D tax incentives in **Korea** has experienced changes over the 2000-20 period, across the four different scenarios. In the case of large firms, a drop in implied tax subsidy rates follows the reduction of the incremental tax credit rate applicable to large firms from 50% to 40% in 2003, from 40% to 30% in 2017, and from 30% to 25% in 2018. With this, the volume-based tax offset becomes more favourable for large firms.

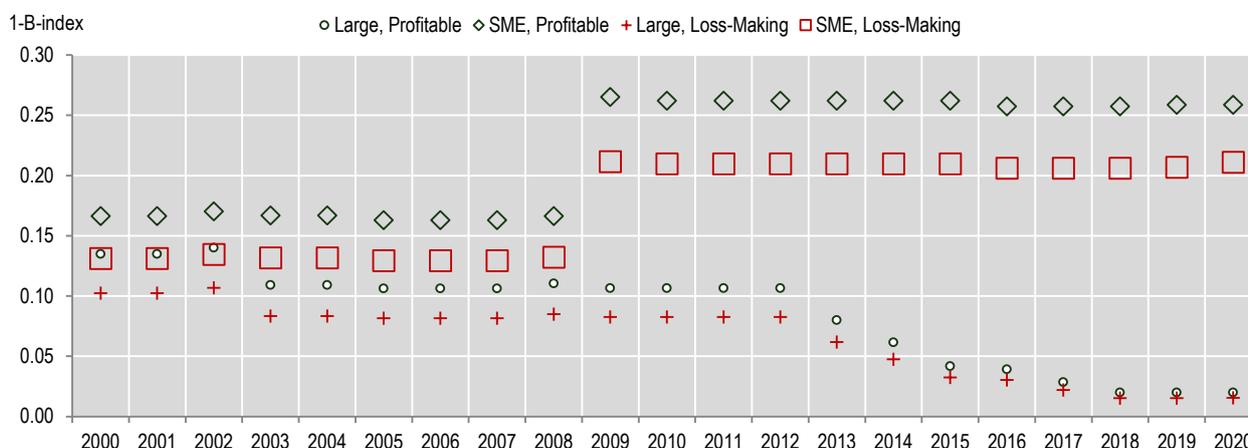
The definition of the base amount in excess of which R&D expenditure qualifies for the incremental tax credit was adjusted from 2013 to 2015, the number of years based on which the average R&D spend is computed (initially 4 years) was reduced by one year each year. This resulted in a step-wise decrease of the R&D tax subsidy rate estimated for large firms.

For SMEs, marginal tax subsidy rates increased in 2009 when the volume-based tax credit rate for SMEs was raised from 15% to 25%. For large firms, the volume-based tax credit rate was reduced from 3% to 2%.

Changes in the R&D investment tax credit rate further led to some smaller variations in implied tax subsidy rates over the 2000-20 period.

**Figure 2. Implied tax subsidy rates on R&D expenditures: Korea, 2000-20**

1-B-Index, by firm size and profit scenario



Note: Implied marginal tax subsidy rates, presented for different firm size and profitability scenarios, are calculated based on headline tax credit/allowance rates (see [methodology](#) and [country-specific notes](#)), providing an upper bound value of the generosity of R&D tax support, not reflecting the effect of thresholds and ceilings that may limit the amount of qualifying R&D expenditure or value of tax relief.

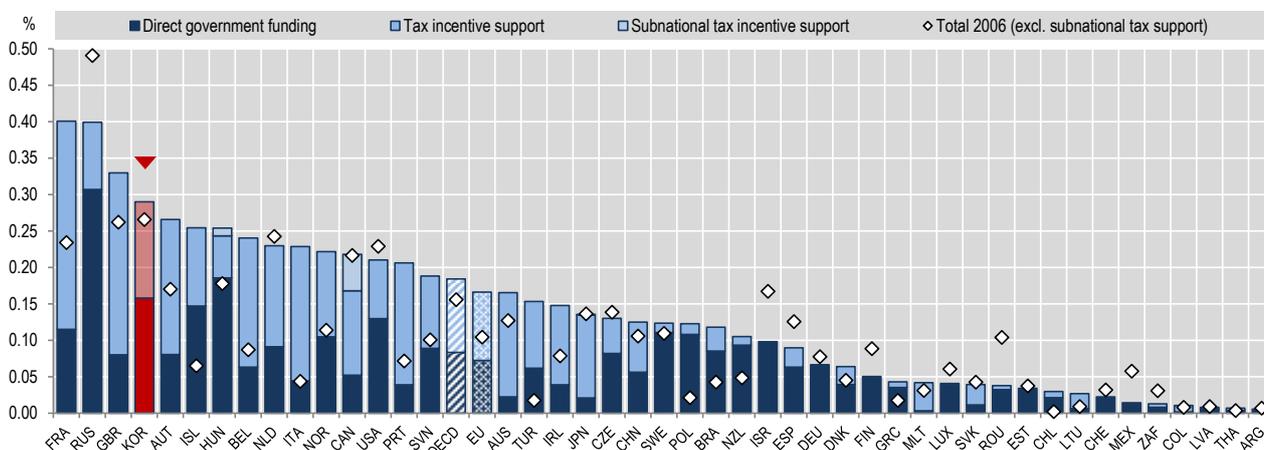
Source: OECD, R&D Tax Incentives Database, <http://oe.cd/rdtax>, March 2021.

### Policy support for business R&D: the policy mix

In 2018, **Korea** is placed among the OECD countries that provide the largest level of total government support to business R&D as a percentage of GDP, at a rate equivalent to 0.29% of GDP.

**Figure 3. Direct government funding of business R&D and tax incentives for R&D, 2018 (nearest year)**

As a percentage of GDP



Note: Data on subnational tax support are only available for a group of countries.

Source: OECD, R&D Tax Incentives Database, <http://oe.cd/rdtax>, March 2021.

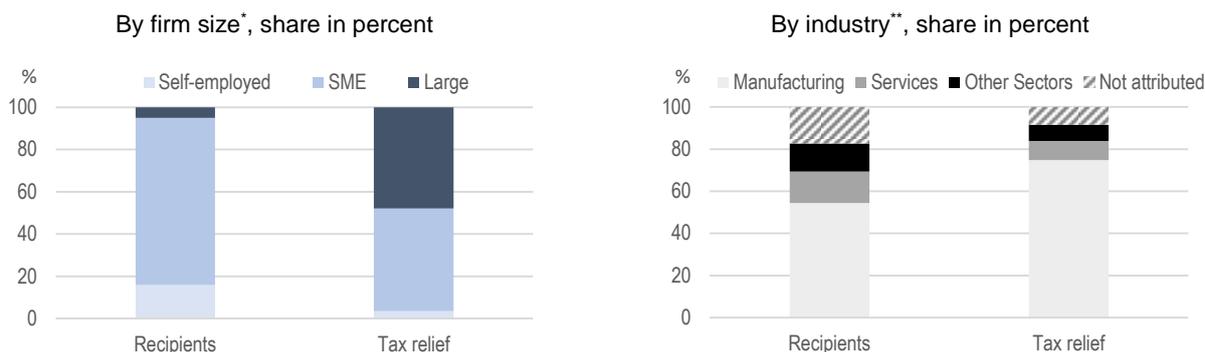
**Key points:**

- From 2007 to 2018, total government support for BERD as a percentage of GDP increased in **Korea** by 0.02 percentage point (pp), while the OECD average (2006-18) increased by 0.03 pp.
- During this period, business R&D intensity in **Korea** increased from 2.19% to 3.63%.
- In 2018, R&D tax incentives accounted for 46% of total government support for BERD in **Korea**.

### Distribution of R&D tax relief recipients and government tax relief for R&D

The distribution of R&D tax relief recipients and government tax relief for R&D expenditures (GTARD) provide insights into what types of firms claim and benefit from tax relief.

**Figure 4. Number of R&D tax relief recipients and value of government tax relief for R&D, 2018**



Note: Figures refer to the R&D investment credit and R&D tax credit. \*SMEs are defined as firms with 1-249 employees and that have total asset amount less than 500 trillion KRW, total sales less than 40-150 trillion KRW (the threshold varies by business sector), are not related to other large firms and do not run a lodging business or bar management. \*\*Economic activity is defined as follows: Manufacturing (Steel, automobiles, food, etc. all kinds of products made in a factory), Services (Legal, consulting, advertisement, education, etc.), Other sectors (Agriculture, mining, fishing, construction, wholesale, retail, finance, healthcare, etc.)

Source: OECD, R&D Tax Incentives Database, <http://oe.cd/rdtax>, March 2021.

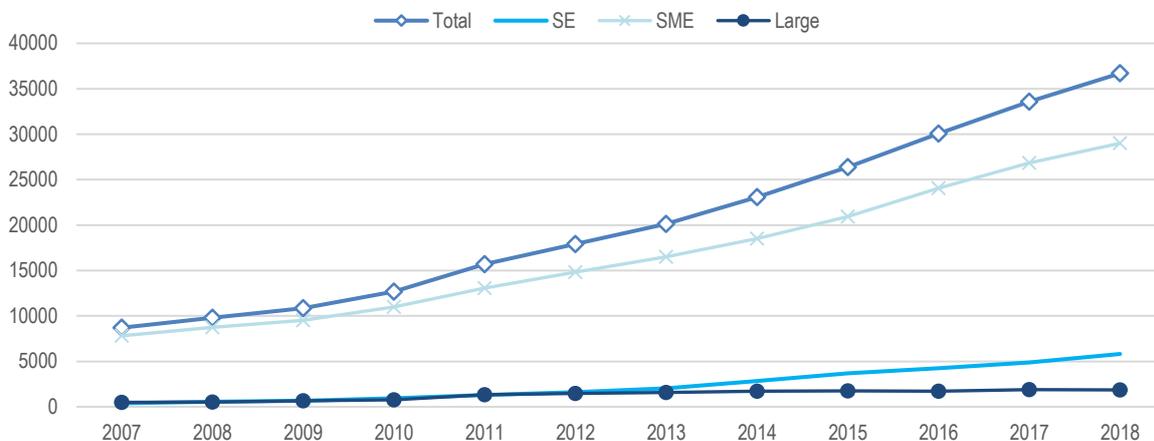
**Key points:**

- In **Korea**, SMEs accounted for 79% of R&D tax relief recipients in 2018, while the share of R&D tax support accounted for by SMEs amounted to around 40% in this year. 48% of R&D tax benefits were allocated to large firms, comprising 5% of the population of R&D tax relief recipients in 2018.
- In 2018, firms in manufacturing represented around 54% of R&D tax relief recipients in **Korea**, followed by firms in services with a share of 15%. The share of R&D tax benefits accounted for by the latter amounted to 9% in that year, while this share amounted to 75% in the case of firms in manufacturing.

## Trends in the uptake of R&D tax incentives

Over the period 2007-2018, the number of R&D tax relief recipients increased more than fourfold in **Korea**, from around 8 700 to close to 36 700 recipients in 2018. Most of this increase is attributable to SMEs. Throughout these years, SMEs accounted for 80-90% of R&D tax relief recipients in **Korea**.

**Figure 5. Number of R&D tax relief recipients, Korea, 2007-2018**



Note: Figures refer to the R&D investment credit and R&D tax credit.

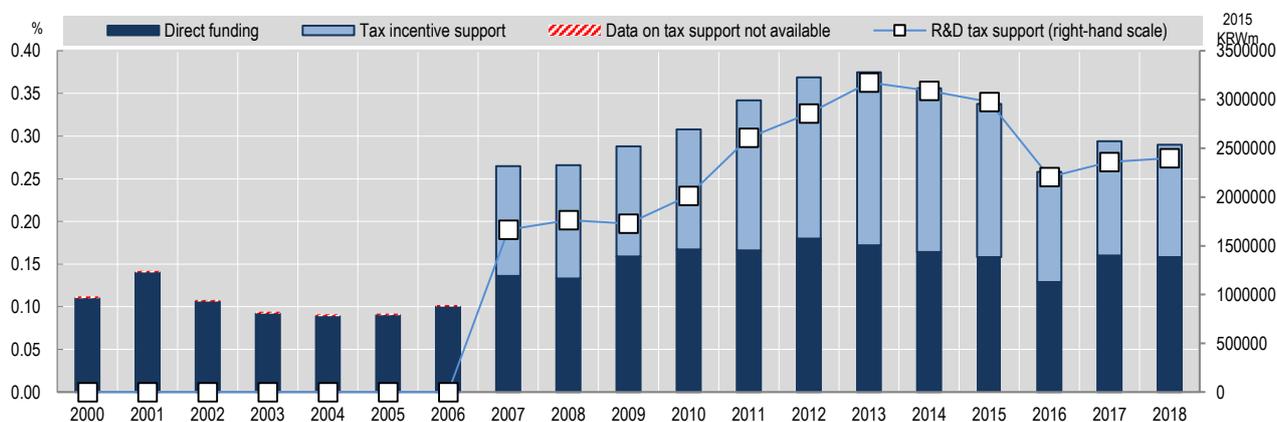
Source: OECD, R&D Tax Incentives Database, <http://oe.cd/rdtax>, March 2021.

## Trends in government support for business R&D

Between 2007 and 2018, the importance of tax incentives has increased in **Korea** in absolute terms, whereas the relative magnitude of tax compared to direct support has remained fairly stable over this period.

**Figure 6. Direct funding of business R&D and tax incentives for R&D, Korea, 2000-18**

As a percentage of GDP, 2015 prices (right-hand scale)



Source: OECD, R&D Tax Incentives Database, <http://oe.cd/rdtax>, March 2021.

- The cost of government tax relief for R&D rose (in 2015 prices) from KRW 1.7 trillion (100 KRW = 0.072 EUR, Q3 2020) in 2007 to KRW 3.2 trillion in 2013, and declined thereafter, reaching KRW 2.4 trillion in 2018.
- As percentage of GDP, tax support reached a peak of 0.20% in 2013 and amounted to 0.13% in 2018.
- Direct funding of BERD rose from 0.11% of GDP in 2000 to 0.16% in 2018.
- The share of R&D tax incentives in total government remained fairly stable over the 2007-18 period, varying between 45% and 54% and reaching 46% in 2018.

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