Contractual Obligations	Payments Due by Period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
	(in billions of Won)				
Unsecured bank borrowings	W 8,486	W 1,907	W5,299	W1,218	—
Secured bank borrowings	3,715	709	1,333	1,280	W 456
Unsecured bond issues	2,787	879	1,688	128	92
Trade accounts and notes payable	3,779	3,779	—	—	—
Other accounts payable	1,704	1,704	—	—	—
Other accounts payable (enterprise procurement cards)(1)	1,078	1,078	—	—	—
Long-term other accounts payable	0	—	0	—	—
Securities deposits received	13	1	12	—	—
Lease Liabilities	90	39	37	5	9
Derivatives	153	49	80	24	—
Total	W21,806	W 10,146	W8,449	W2,655	W 557

(1) Represents the amount of utility expenses and other expenses paid using the enterprise procurement cards. For further information, please see Note 26 of the notes to our financial statements.

In addition to the above, we have continuing obligations to make cash royalty payments under our technology license agreements, the amount of which are generally determined based on a percentage of sales of our display products.

Expenses relating to our license fees and royalty payments under existing license agreements were W117 billion in 2018, W122 billion in 2019 and W136 billion (US$125 million) in 2020, representing 6.7%, 6.9% and 7.8% of our research and development related expenditures in 2018, 2019 and 2020, respectively, in each case based on our current method of recognizing our research and development related expenditures, which was revised in 2019. We expect to make additional license fee payments as we enter into new technology license agreements from time to time with third parties.

Taxation

In 2020, the statutory corporate income tax rate applicable to us was 11.0% (including local income surtax) for the first W200 million of our taxable income, 22.0% (including local income surtax) for our taxable income between W200 million and W20 billion, 24.2% (including local income surtax) for our taxable income between W20 billion and W300 billion, and 27.5% (including local income surtax) for our taxable income in excess of W300 billion.

Tax Credits

We are entitled to a number of tax credits relating to certain investments in productivity enhancement and technology. For example, in 2020, under the Restriction of Special Taxation Act, we were entitled to a tax credit of 2% of our capital investments in facilities for enhancing productivity through process improvement, automation and advanced technology. Under the same law, we are also entitled to a tax credit on a percentage of our research and development expenses incurred for procuring certain “new growth engine and source technologies,” which include OLED display technology. The applicable amount of such tax credit is calculated by multiplying the applicable research and development expenses by the sum of (x) 20% and (y) three times the proportion of such research and development expenses as a percentage of revenue.

Tax credits not utilized in the fiscal year during which the relevant investment was made may be carried forward over the next ten years. As of December 31, 2020, we had recognized deferred tax assets related to these credits of W392 billion (US$361 million), which may be utilized against future income tax liabilities through 2030. In addition, we also had unused tax credit carryforwards of W231 billion (US$213 million) as of December 31, 2020 for which no deferred tax asset was recognized.

Item 5.C. *Research and Development, Patents and Licenses, etc.*

Research and Development

The display panel industry is subject to rapid technological changes. We believe that effective research and development is essential to maintaining our position as one of the industry’s leading technology innovators.

To meet the demands of the future trends, we have formulated a long-term research and development strategy aimed at enhancing the process, device and design aspects of the existing products and diversifying the use of display panels as new opportunities arise with the development of communication systems and information technology. The following are examples of products and technologies that have been developed through our research and development activities in recent years:

- In 2018, we developed and introduced display panels for 65-inch rollable OLED TV and ultra-large 88-inch 8K OLED TV products, which was the world's largest product of such type. For TFT-LCD monitors, we introduced a four-sided borderless curved monitor with a 1900R curvature radius. With respect to TFT-LCD smartphones, we developed our first 5.8-inch Ultra HD Mobile product by applying WRGB sub-pixel structure to achieve high luminance, low power consumption and HDR support. We also developed a full-screen TFT-LCD panel for smartphones with a camera notch concept. In addition, we released a TFT-LCD video-wall product with very thin bezels. For automotive displays, we introduced a 12.3-inch FHD glassless 3D TFT-LCD product.
- In 2019, we commenced mass production of display panels for 88-inch 8K OLED TV products. We also produced 55-inch FHD transparent commercial OLED display panels and 55-inch UHD OLED gaming monitor display panels. In addition, we developed OLED panels for automotive products with a 7.2-inch control pad, 14.2-inch cluster and 16.9-inch infotainment screen. For TFT-LCD commercial products, we produced a 50-inch Ultra HD in-TOUCH panel (equipped with touch sensors inside the LCD cells for a thinner and lighter design), which is the first in-TOUCH panel that is 50-inches or larger.
- In 2020, we commenced mass production of the first OLED products at our new CO fabrication facility in Guangzhou, China, including 48-inch and 77-inch UHD display panels. In addition, we developed the world's first "2K" zone mini-LED and ultra-slim UHD desktop monitor product.

As the product life cycle of display panels using certain of the existing TFT-LCD technology is approaching maturity, we plan to further focus on OLED and other newer display technologies, while also exploring new growth opportunities in the application of display panels, such as in smartphones, commercial displays and automotive displays.

In order to maintain our position as one of the industry's technology leaders, we believe it is important not only to increase direct spending on research and development, but also to manage our research and development capability effectively in order to successfully implement our long-term strategy. In connection with our efforts to enhance our research and development capability with respect to next-generation display technologies, we opened the R&D Center in Paju, Korea in April 2012. In addition, we have further expanded our research and development resources by allocating some of our research and development personnel to the newly-opened LG Science Park, which is located in western Seoul and commenced its operations in December 2017. LG Science Park accommodates researchers from various LG Group-affiliated companies with expertise in a broad range of disciplines, including electronics, chemistry, nanotechnology, display, fabrication, life sciences and new materials, to focus on developing and testing innovative new technologies.

We complement our in-house research and development capability with collaborations with universities and other third parties. For example, we provide project-based funding to both domestic and overseas universities as a means to recruit promising engineering students and to research and develop new technologies. In April 2016, we entered into an agreement with Pohang University of Science and Technology, or POSTECH, to establish the LGD-POSTECH Cooperation Center within the university's Research Institute of Electrical Circuit, Algorithm and Advanced Materials to conduct research into display panel technologies, including OLED technology. We also enter into joint research and development agreements from time to time with third parties for the development of technologies in specific fields. In addition, we belong to several display industry consortia, and we receive annual government funding to support our research and development efforts. As of December 31, 2020, we employed more than 4,500 engineers, researchers, designers, technicians and support personnel in connection with our research and development activities.

While we primarily rely on our own capacity for the development of new technologies in the display panel design and manufacturing process, we rely on third parties for certain key technologies to enhance our technology leadership, as further described in "—Intellectual Property" below.

Intellectual Property

Overview

Our business has benefited from our patent portfolio, which includes patents for display technologies, manufacturing processes, products and applications related to the production of TFT-LCD and OLED panels. We hold a large number of patents in Korea and in other countries, including in the United States, China, Japan, Germany, France, Great Britain, Taiwan, India and Vietnam. These patents will expire at various dates upon the expiration of their respective terms ranging from 2021 to 2040. In March 2014, we formed Unified Innovative Technology, LLC in the United States, a limited liability company solely owned by us for the purpose of patent portfolio management.