ASE Technology Holding Co., Ltd.
and Subsidiaries

Consolidated Financial Statements as of December 31, 2019 and 2020 and for the Years Ended December 31, 2018, 2019 and 2020 and Reports of Independent Registered Public Accounting Firms

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of
ASE Technology Holding Co., Ltd.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of ASE Technology Holding Co., Ltd. (a corporation incorporated under the laws of the Republic of China) and its subsidiaries (collectively, the “Group”) as of December 31, 2019 and 2020, the related consolidated statements of comprehensive income, changes in equity and cash flows for each of the three years in the period ended December 31, 2020, and the related notes (collectively referred to as the “Consolidated Financial Statements”) (all expressed in New Taiwan Dollars). In our opinion, based on our audits and the report of other auditors, the Consolidated Financial Statements present fairly, in all material respects, the financial position of the Group as of December 31, 2019 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

We did not audit the consolidated financial statements of Siliconware Precision Industries Co., Ltd. and its subsidiaries (collectively, “SPIL”), in which the Group’s investment was accounted for (1) as an investment accounted for using the equity method for the period from January 1, 2018 through April 29, 2018 (2) as a consolidated subsidiary as of December 31, 2019 and 2020, and for the period from April 30, 2018 through December 31, 2018 and for the years ended December 31, 2019 and 2020. The accompanying Consolidated Financial Statements included its share of profit in SPIL of NT$127,266 thousand for the period from January 1, 2018 through April 29, 2018. The total assets of SPIL constituted 23% and 22% of the Group’s total assets as of December 31, 2019 and 2020, respectively, and the revenues of SPIL for the period from April 30, 2018 through December 31, 2018 and for the years ended December 31, 2019 and 2020 constituted 17%, 22% and 21% of the Group’s revenues. The consolidated financial statements of SPIL were audited by other auditors whose report has been furnished to us, and our opinion, insofar as it relates to the amounts included for SPIL, is based solely on the report of other auditors.

Our audits also comprehended the translation of New Taiwan dollar amounts into U.S. dollar amounts and, in our opinion, such translation has been made in conformity with the basis stated in Note 4 to the Consolidated Financial Statements. Such U.S. dollar amounts are presented solely for the convenience of the readers outside the Republic of China.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Group’s internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated April 1, 2021, expressed an unqualified opinion on the Group’s internal control over financial reporting based on our audit and the report of other auditors.

Basis for Opinion

These Consolidated Financial Statements are the responsibility of the Group's management. Our responsibility is to express an opinion on the Group's Consolidated Financial Statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Group in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the Consolidated Financial Statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the Consolidated Financial Statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the Consolidated Financial Statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the Consolidated Financial Statements. We believe that our audits and the report of other auditors provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the Consolidated Financial Statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the Consolidated Financial Statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Goodwill - Packaging, Testing and Electronics Manufacturing Services (EMS) Segments - Refer to Notes 4, 5, 18 and 29 to the Consolidated Financial Statements

Critical Audit Matter Description

The Group's evaluation of goodwill for impairment involves the comparison of the value in use of each segment to its carrying value. The Group used the discounted cash flow model to estimate value in use, which requires management to make significant estimates and assumptions related to discount rates and forecasts of future revenues. Changes in these assumptions could have a significant impact on either the value in use, the amount of any goodwill impairment charge, or both. The goodwill balance was NT$54,777,439 thousand (US$1,950,764 thousand) as of December 31, 2020, of which NT$35,703,625 thousand (US$1,271,496 thousand), NT$13,365,068 thousand (US$475,964 thousand) and NT$5,560,645 thousand (US$198,029 thousand) were allocated to the packaging, testing and EMS segments, respectively. The value in use of the packaging, testing and EMS segments exceeded their carrying values as of the measurement date and, therefore, no impairment was recognized.

We identified the valuation of goodwill for the Group's packaging, testing and EMS segments as a critical audit matter due to the significant estimates and assumptions management makes to estimate the value in use of the packaging, testing and EMS segments and the sensitivity of their operations to changes in demand. Auditing management's judgments related to the selection of the discount rates and forecasts of future revenues for the packaging, testing and EMS segments required a high degree of auditor judgment and an increased extent of effort, including the need to involve our fair value specialists.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the discount rates and forecasts of future revenues used by management to estimate the value in use of the packaging, testing and EMS segments included the following, among others:

- We tested the design and operating effectiveness of controls over management's goodwill impairment evaluation, including those over the determination of the value in use of the packaging, testing and EMS segments, such as controls related to management's selection of the discount rate and assessment on the reasonableness of forecasts of future revenue.
- We evaluated management's ability to accurately forecast future revenues by comparing actual results to management's historical forecasts.
- We performed sensitivity analyses to evaluate the risk of impairment if key assumptions are changed.
- With the assistance of our fair value specialists, we evaluated the reasonableness of the discount rate selected by performing certain procedures, including:
    - Testing the source information underlying the determination of the discount rate and the mathematical accuracy of the calculation.
    - Developing a range of independent estimates and comparing those to the discount rate selected by management.

/s/Deloitte & Touche
Taipei, Taiwan
Republic of China
April 1, 2021

We have served as the Group's auditor since 1984.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholder of
Siliconware Precision Industries Co., Ltd.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Siliconware Precision Industries Co., Ltd. and its subsidiaries (the "Company") as of December 31, 2020 and 2019, and the related consolidated statements of comprehensive income, of changes in equity and of cash flows for each of the three years in the period ended December 31, 2020, including the related notes (collectively referred to as the "consolidated financial statements") (not presented herein). We also have audited the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020 in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 13 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Annual Report on Internal Control over Financial Reporting (not presented herein). Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the Board of Directors and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Impairment assessment of property, plant and equipment (PPE)

As described in Note 12 to the consolidated financial statements, the Company's consolidated PPE balance was NT$65,623,776 thousand (US$2,337,029 thousand) at December 31, 2020. Management assesses whether there is indication for PPE impairment at each reporting date or whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Because of changes in demand of the Company's packaging and testing services, it raised the uncertainty of the recoverability of the Company's PPE. Recoverable amounts are estimated for individual assets or, where an individual asset cannot generate cash inflows independently, the recoverable amount is determined for the larger cash generating unit to which it belongs. Management judgment is applied in identifying cash-generating units. The recoverable amount of the assets is determined based on the higher of the fair value less costs to sell or value-in-use calculated using discounted cash flows (DCF) model. Future cash flow assumptions relating to this valuation, are estimated based on financial forecast which reflects the long-term plans for the Company. The determination of future cash flows includes significant management's judgement and assumptions, including forecast of future revenue, gross profit rates and weighted average cost of capital (WACC) rate.

The principal considerations for our determination that performing procedures relating to the impairment assessment of PPE is a critical audit matter because there was significant judgment by management when identifying cash generating units, as well as developing management's assessment of the recoverable amount for all cash generating units where impairment indicators were identified. This in turn led to a high degree of auditor judgment, subjectivity and effort in evaluating management's identification of cash generating units and significant assumptions, including forecast of future revenue, gross profit rates and WACC rate. In addition, the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's identification of cash generating units and impairment calculations, including controls relating to the significant assumptions used in these calculations. These procedures also included, among others, an assessment of the appropriateness of the cash generating units identified by management, testing management's process for determining the recoverable amount of the cash generating units where impairment indicators were identified, evaluating the appropriateness of the methodology used in the DCF model, testing the completeness and accuracy of underlying data used in the DCF model and evaluating reasonableness of significant assumptions used by management, including forecast of future revenue, gross profit rates and WACC rate and performing a retrospective comparison of forecasted cash flows to actual past performance and previous forecasts. Professionals with specialized skill and knowledge were used to assist in evaluating the DCF model and WACC rate.

/s/PricewaterhouseCoopers, Taiwan

Taipei, Taiwan
March 18, 2021

We have served as the Company's auditor since 1994.

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS
(Amounts in Thousands)

	December 31, 2019	December 31, 2020	
ASSETS	**NT$**	**NT$**	**US$ (Note 4)**
CURRENT ASSETS			
Cash and cash equivalents (Note 6)	$ 60,130,875	$ 51,538,071	$ 1,835,401
Financial assets at fair value through profit or loss - current (Note 7)	4,127,566	4,342,605	154,651
Contract assets - current (Note 41)	5,897,316	4,782,904	170,331
Trade receivables, net (Note 10)	78,948,473	91,833,989	3,270,441
Other receivables (Note 10)	1,293,819	3,693,936	131,551
Current tax assets (Note 26)	553,092	702,820	25,029
Inventories (Note 11)	33,883,750	48,516,459	1,727,794
Inventories related to real estate business (Notes 12 and 36)	11,416,726	13,471,645	479,760
Other financial assets - current (Notes 13 and 36)	765,834	551,655	19,646
Other current assets	4,983,667	4,578,783	163,062
Total current assets	202,001,118	224,012,867	7,977,666
NON-CURRENT ASSETS			
Financial assets at fair value through profit or loss - non-current (Note 7)	1,161,430	1,793,188	63,860
Financial assets at fair value through other comprehensive income - non-current (Note 8)	1,770,775	1,741,134	62,006
Investments accounted for using the equity method (Note 14)	12,085,207	12,806,673	456,078
Property, plant and equipment (Notes 15, 25, 36 and 37)	232,093,327	233,207,324	8,305,104
Right-of-use assets (Note 16)	9,792,221	8,620,612	307,002
Investment properties (Notes 17, 25 and 36)	12,854,071	12,538,083	446,513
Goodwill (Notes 18 and 29)	50,198,436	54,777,439	1,950,764
Other intangible assets (Notes 19, 25 and 29)	29,024,392	26,808,668	954,725
Deferred tax assets (Note 26)	4,707,704	5,477,373	195,063
Other financial assets - non-current (Notes 13 and 36)	559,493	530,345	18,887
Other non-current assets	975,532	1,263,188	44,985
Total non-current assets	355,222,588	359,564,027	12,804,987
TOTAL	$ 557,223,706	$ 583,576,894	$ 20,782,653

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ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS
(Amounts in Thousands)

LIABILITIES AND EQUITY	December 31, 2019 NT$	December 31, 2020 NT$	December 31, 2020 US$ (Note 4)
CURRENT LIABILITIES			
Short-term borrowings (Note 20)	$ 37,339,028	$ 31,290,839	$ 1,114,346
Financial liabilities at fair value through profit or loss - current (Note 7)	973,571	1,537,208	54,744
Financial liabilities for hedging - current (Notes 20 and 34)	3,233,301	5,277,325	187,939
Trade payables	56,065,639	73,268,234	2,609,268
Other payables (Note 22)	39,181,690	39,415,623	1,403,690
Current tax liabilities (Note 26)	4,858,578	6,514,502	231,998
Lease liabilities - current (Note 16)	632,802	774,444	27,580
Current portion of bonds payable (Note 21)	250,000	6,999,951	249,286
Current portion of long-term borrowings (Notes 20 and 36)	5,112,768	2,250,121	80,133
Other current liabilities	6,652,925	7,264,084	258,692
Total current liabilities	154,300,302	174,592,331	6,217,676
NON-CURRENT LIABILITIES			
Financial liabilities for hedging - non-current (Notes 20 and 34)	-	5,910,919	210,503
Bonds payable (Note 21)	36,272,155	49,253,603	1,754,046
Long-term borrowings (Notes 20 and 36)	135,965,830	102,259,378	3,641,716
Deferred tax liabilities (Note 26)	5,772,237	6,551,233	233,306
Lease liabilities - non-current (Note 16)	5,176,123	5,101,386	181,673
Net defined benefit liabilities (Note 23)	5,254,401	6,466,794	230,299
Other non-current liabilities	1,680,346	1,710,090	60,900
Total non-current liabilities	190,121,092	177,253,403	6,312,443
Total liabilities	344,421,394	351,845,734	12,530,119
EQUITY ATTRIBUTABLE TO OWNERS OF THE COMPANY (Note 24)			
Share capital			
Ordinary shares	43,254,026	43,385,311	1,545,061
Shares subscribed in advance	51,261	130,609	4,651
Total share capital	43,305,287	43,515,920	1,549,712
Capital surplus	138,910,363	139,767,550	4,977,477
Retained earnings			
Legal reserve	2,203,895	3,901,384	138,938
Special reserve	6,902,782	10,847,697	386,314
Unappropriated earnings	21,029,962	30,084,965	1,071,402
Total retained earnings	30,136,639	44,834,046	1,596,654
Other equity	(10,965,782)	(10,043,302)	(357,667)
Treasury shares	(1,959,107)	(1,959,107)	(69,769)
Equity attributable to owners of the Company	199,427,400	216,115,107	7,696,407
NON-CONTROLLING INTERESTS (Note 24)	13,374,912	15,616,053	556,127
Total equity	212,802,312	231,731,160	8,252,534
TOTAL	$ 557,223,706	$ 583,576,894	$ 20,782,653

The accompanying notes are an integral part of the consolidated financial statements. (Concluded)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Amounts in Thousands Except Earnings Per Share)

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
OPERATING REVENUES (Note 41)	$ 371,092,421	$ 413,182,184	$ 476,978,710	$ 16,986,421
OPERATING COSTS (Notes 11 and 25)	309,929,371	348,871,391	398,994,442	14,209,204
GROSS PROFIT	61,163,050	64,310,793	77,984,268	2,777,217
OPERATING EXPENSES (Note 25)				
Selling and marketing expenses	4,933,602	5,751,168	5,605,464	199,625
General and administrative expenses	14,618,900	16,637,887	18,200,304	648,159
Research and development expenses	14,962,799	18,395,334	19,302,418	687,408
Total operating expenses	34,515,301	40,784,389	43,108,186	1,535,192
OTHER OPERATING INCOME AND EXPENSES, NET (Note 25)	371,583	(268,555)	502,492	17,895
PROFIT FROM OPERATIONS	27,019,332	23,257,849	35,378,574	1,259,920
NON-OPERATING INCOME AND EXPENSES				
Other income (Note 25)	1,092,558	1,359,093	1,474,547	52,512
Other gains and losses (Note 25)	7,874,273	2,683,989	1,827,576	65,085
Finance costs (Note 25)	(3,568,241)	(4,203,395)	(3,459,511)	(123,202)
Share of the profit or loss of associates and joint ventures	(480,244)	182,275	547,612	19,502
Total non-operating income and expenses	4,918,346	21,962	390,224	13,897
PROFIT BEFORE INCOME TAX	31,937,678	23,279,811	35,768,798	1,273,817
INCOME TAX EXPENSE (Note 26)	4,513,369	5,011,246	7,116,898	253,451
PROFIT FOR THE YEAR	27,424,309	18,268,565	28,651,900	1,020,366
OTHER COMPREHENSIVE INCOME (LOSS)				
Items that will not be reclassified subsequently to profit or loss:				
Remeasurement of defined benefit obligation	(308,180)	(365,262)	(594,778)	(21,181)
Unrealized loss on equity instruments at fair value through other comprehensive income	(422,441)	(216,121)	(166,239)	(5,920)
Share of other comprehensive income (loss) of associates and joint ventures	(558,217)	1,504,760	2,656,966	94,621
Income tax relating to items that will not be reclassified subsequently to profit or loss	134,853	(3,816)	(122,901)	(4,377)
	(1,153,985)	919,561	1,773,048	63,143

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ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Amounts in Thousands Except Earnings Per Share)

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Items that may be reclassified subsequently to profit or loss:				
Exchange differences on translating foreign operations	$ 227,821	$ (5,202,145)	$ (831,784)	$ (29,622)
Unrealized loss on investments in debt instruments at fair value through other comprehensive income	(63,076)	(2,052)	(2,136)	(76)
Loss on hedging instruments	-	-	(574,824)	(20,471)
Share of other comprehensive income (loss) of associates and joint ventures	136,608	(85,975)	131,009	4,666
	301,353	(5,290,172)	(1,277,735)	(45,503)
Other comprehensive income (loss) for the year, net of income tax	(852,632)	(4,370,611)	495,313	17,640
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	$ 26,571,677	$ 13,897,954	$ 29,147,213	$ 1,038,006
PROFIT FOR THE YEAR ATTRIBUTABLE TO:				
Owners of the Company	$ 26,220,721	$ 17,060,591	$ 26,970,580	$ 960,490
Non-controlling interests	1,203,588	1,207,974	1,681,320	59,876
	$ 27,424,309	$ 18,268,565	$ 28,651,900	$ 1,020,366
TOTAL COMPREHENSIVE INCOME FOR THE YEAR ATTRIBUTABLE TO:				
Owners of the Company	$ 25,620,461	$ 13,122,185	$ 27,440,726	$ 977,234
Non-controlling interests	951,216	775,769	1,706,487	60,772
	$ 26,571,677	$ 13,897,954	$ 29,147,213	$ 1,038,006
EARNINGS PER SHARE (Note 27)				
Basic	$ 6.18	$ 4.01	$ 6.32	$ 0.23
Diluted	$ 6.07	$ 3.91	$ 6.17	$ 0.22
EARNINGS PER AMERICAN DEPOSITARY SHARE ("ADS") (Note 27)				
Basic	$ 12.35	$ 8.02	$ 12.65	$ 0.45
Diluted	$ 12.14	$ 7.82	$ 12.33	$ 0.44

The accompanying notes are an integral part of the consolidated financial statements. (Concluded)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(Amounts in Thousands)

	Equity Attributable to Owners of the Company														
	Share Capital			Retained Earnings				Other Equity							
	Shares (In Thousands)	Amounts	Capital Surplus	Legal Reserve	Special Reserve	Unappropriated Earnings	Total	Exchange Differences on Translating Foreign Operations	Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income	Gain (Loss) on Hedging Instruments	Total	Treasury Shares	Total	Non-controlling Interests	Total Equity
BALANCE AT JANUARY 1, 2018	8,738,079	$ 87,380,787	$ 40,624,328	$ 16,765,066	$ 3,353,938	$ 54,485,857	$ 74,604,861	$ (6,733,659)	$ 135,517	$ -	$ (6,598,142)	$ (7,292,513)	$ 188,719,321	$ 13,195,312	$ 201,914,633
Change from investments in associates accounted for using the equity method	-	-	1,411,899	-	-	88,201	88,201	-	-	-	-	-	1,500,100	-	1,500,100
Cash dividends paid from capital surplus	-	-	(10,795,980)	-	-	-	-	-	-	-	-	-	(10,795,980)	-	(10,795,980)
Other changes in the capital surplus	-	-	872	-	-	-	-	-	-	-	-	-	872	-	872
Net profit for the year ended December 31, 2018	-	-	-	-	-	26,220,721	26,220,721	-	-	-	-	-	26,220,721	1,203,588	27,424,309
Other comprehensive income (loss) for the year ended December 31, 2018, net of income tax	-	-	-	-	-	(146,194)	(146,194)	562,794	(1,016,860)	-	(454,066)	-	(600,260)	(252,372)	(852,632)
Total comprehensive income (loss) for the year ended December 31, 2018	-	-	-	-	-	26,074,527	26,074,527	562,794	(1,016,860)	-	(454,066)	-	25,620,461	951,216	26,571,677
Effect of the joint share exchange (Note 24)	(4,318,392)	(43,183,919)	117,693,658	(16,765,066)	-	(57,744,673)	(74,509,739)	-	-	-	-	-	-	-	-
Buy-back of ordinary shares	-	-	-	-	-	-	-	-	-	-	-	(71,302)	(71,302)	-	(71,302)
Cancellation of treasury shares	(121,852)	(1,218,520)	(1,480,903)	-	-	(2,705,285)	(2,705,285)	-	-	-	-	5,404,708	-	-	-
Cash dividends received by subsidiaries from the Company	-	-	182,354	-	-	-	-	-	-	-	-	-	182,354	-	182,354
Disposal of interest in associates and joint ventures accounted for using the equity method (Note 14)	-	-	(1,408,495)	-	-	204,450	204,450	282,291	(133,364)	-	148,927	-	(1,055,118)	-	(1,055,118)
Differences between consideration and carrying amount arising from acquisition or disposal of subsidiaries (Note 31)	-	-	(1,142,856)	-	-	-	-	-	-	-	-	-	(1,142,856)	2,783,015	1,640,159
Changes in percentage of ownership interest in subsidiaries (Note 31)	-	-	(1,118,102)	-	-	-	-	-	-	-	-	-	(1,118,102)	(801,884)	(1,919,986)
Issue of ordinary shares under employee share options (Note 28)	23,879	238,796	549,345	-	-	-	-	-	-	-	-	-	788,141	-	788,141
Cash dividends distributed by subsidiaries	-	-	-	-	-	-	-	-	-	-	-	-	-	(424,815)	(424,815)
Additional non-controlling interest arising on issue of employee share options by subsidiaries (Note 28)	-	-	(1,239,456)	-	-	-	-	-	-	-	-	-	(1,239,456)	1,936,643	697,187
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	400	400	-	(400)	-	(400)	-	-	-	-
BALANCE AT DECEMBER 31, 2018	4,321,714	43,217,144	143,276,664	-	3,353,938	20,403,477	23,757,415	(5,888,574)	(1,015,107)	-	(6,903,681)	(1,959,107)	201,388,435	17,639,487	219,027,922
BALANCE AT JANUARY 1, 2019	4,321,714	43,217,144	143,276,664	-	3,353,938	20,403,477	23,757,415	(5,888,574)	(1,015,107)	-	(6,903,681)	(1,959,107)	201,388,435	17,639,487	219,027,922
Appropriation of 2018 earnings															
Legal reserve	-	-	-	2,203,895	-	(2,203,895)	-	-	-	-	-	-	-	-	-
Special reserve	-	-	-	-	3,548,844	(3,548,844)	-	-	-	-	-	-	-	-	-
Cash dividends distributed by the Company	-	-	-	-	-	(10,806,454)	(10,806,454)	-	-	-	-	-	(10,806,454)	-	(10,806,454)
	-	-	-	2,203,895	3,548,844	(16,559,193)	(10,806,454)	-	-	-	-	-	(10,806,454)	-	(10,806,454)
Change from investments in associates accounted for using the equity method	-	-	3,604	-	-	-	-	-	-	-	-	-	3,604	-	3,604
Other changes in the capital surplus	-	-	1,070	-	-	-	-	-	-	-	-	-	1,070	-	1,070
Net profit for the year ended December 31, 2019	-	-	-	-	-	17,060,591	17,060,591	-	-	-	-	-	17,060,591	1,207,974	18,268,565
Other comprehensive income (loss) for the year ended December 31, 2019, net of income tax	-	-	-	-	-	(280,461)	(280,461)	(4,874,110)	1,216,165	-	(3,657,945)	-	(3,938,406)	(432,205)	(4,370,611)
Total comprehensive income (loss) for the year ended December 31, 2019	-	-	-	-	-	16,780,130	16,780,130	(4,874,110)	1,216,165	-	(3,657,945)	-	13,122,185	775,769	13,897,954
Cash dividends received by subsidiaries from the Company	-	-	182,354	-	-	-	-	-	-	-	-	-	182,354	-	182,354
Disposal of interest in investments accounted for using the equity method (Note 14)	-	-	(75,276)	-	-	1,392	1,392	-	-	-	-	-	(73,884)	-	(73,884)

(Continued)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(Amounts in Thousands)

	Equity Attributable to Owners of the Company														
	Share Capital			Retained Earnings				Other Equity							
	Shares (In Thousands)	Amounts	Capital Surplus	Legal Reserve	Special Reserve	Unappropriated Earnings	Total	Exchange Differences on Translating Foreign Operations	Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income	Gain (Loss) on Hedging Instruments	Total	Treasury Shares	Total	Non-controlling Interests	Total Equity
Differences between consideration and carrying amount arising from acquisition or disposal of subsidiaries (Notes 31)	-	$ -	$ (2,779,613)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (2,779,613)	$ (4,335,090)	$ (7,114,703)
Changes in percentage of ownership interest in subsidiaries (Note 31)	-	-	(1,960,167)	-	-	-	-	-	-	-	-	-	(1,960,167)	(2,017,319)	(3,977,486)
Issue of ordinary shares under employee share options (Note 28)	8,814	88,143	1,137,020	-	-	-	-	-	-	-	-	-	1,225,163	-	1,225,163
Cash dividends distributed by subsidiaries	-	-	-	-	-	-	-	-	-	-	-	-	-	(360,245)	(360,245)
Additional non-controlling interest arising on issue of employee share options by subsidiaries (Note 28)	-	-	(875,293)	-	-	-	-	-	-	-	-	-	(875,293)	1,672,310	797,017
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	404,156	404,156	-	(404,156)	-	(404,156)	-	-	-	-
BALANCE AT DECEMBER 31, 2019	4,330,528	43,305,287	138,910,363	2,203,895	6,902,782	21,029,962	30,136,639	(10,762,684)	(203,098)	-	(10,965,782)	(1,959,107)	199,427,400	13,374,912	212,802,312
BALANCE AT JANUARY 1, 2020	4,330,528	43,305,287	138,910,363	2,203,895	6,902,782	21,029,962	30,136,639	(10,762,684)	(203,098)	-	(10,965,782)	(1,959,107)	199,427,400	13,374,912	212,802,312
Appropriation of 2019 earnings															
Legal reserve	-	-	-	1,697,489	-	(1,697,489)	-	-	-	-	-	-	-	-	-
Special reserve	-	-	-	-	3,944,915	(3,944,915)	-	-	-	-	-	-	-	-	-
Cash dividends distributed by the Company	-	-	-	-	-	(8,668,331)	(8,668,331)	-	-	-	-	-	(8,668,331)	-	(8,668,331)
	-	-	-	1,697,489	3,944,915	(14,310,735)	(8,668,331)	-	-	-	-	-	(8,668,331)	-	(8,668,331)
Change from investments in associates accounted for using the equity method	-	-	22,774	-	-	-	-	-	-	-	-	-	22,774	-	22,774
Other changes in the capital surplus	-	-	1,608	-	-	-	-	-	-	-	-	-	1,608	-	1,608
Net profit for the year ended December 31, 2020	-	-	-	-	-	26,970,580	26,970,580	-	-	-	-	-	26,970,580	1,681,320	28,651,900
Other comprehensive income (loss) for the year ended December 31, 2020, net of income tax	-	-	-	-	-	(469,748)	(469,748)	(879,255)	2,248,414	(429,265)	939,894	-	470,146	25,167	495,313
Total comprehensive income (loss) for the year ended December 31, 2020	-	-	-	-	-	26,500,832	26,500,832	(879,255)	2,248,414	(429,265)	939,894	-	27,440,726	1,706,487	29,147,213
Cash dividends received by subsidiaries from the Company	-	-	145,741	-	-	-	-	-	-	-	-	-	145,741	-	145,741
Disposal of interest in investments accounted for using the equity method (Note 14)	-	-	2,199	-	-	(980)	(980)	-	1,094	-	1,094	-	2,313	-	2,313
Differences between consideration and carrying amount arising from acquisition or disposal of subsidiaries (Notes 31)	-	-	(13,502)	-	-	-	-	-	-	-	-	-	(13,502)	(122,396)	(135,898)
Changes in percentage of ownership interest in subsidiaries (Note 31)	-	-	(780,533)	-	-	(2,760,175)	(2,760,175)	-	-	-	-	-	(3,540,708)	(588,080)	(4,128,788)
Issue of ordinary shares under employee share options (Note 28)	21,064	210,633	1,588,792	-	-	-	-	-	-	-	-	-	1,799,425	-	1,799,425
Cash dividends distributed by subsidiaries	-	-	-	-	-	-	-	-	-	-	-	-	-	(346,774)	(346,774)
Additional non-controlling interest arising on issue of employee share options by subsidiaries (Note 28)	-	-	(109,892)	-	-	(392,447)	(392,447)	-	-	-	-	-	(502,339)	1,591,904	1,089,565
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	18,508	18,508	-	(18,508)	-	(18,508)	-	-	-	-
BALANCE AT DECEMBER 31, 2020	4,351,592	$ 43,515,920	$ 139,767,550	$ 3,901,384	$ 10,847,697	$ 30,084,965	$ 44,834,046	$ (11,641,939)	$ 2,027,902	$ (429,265)	$ (10,043,302)	$ (1,959,107)	$ 216,115,107	$ 15,616,053	$ 231,731,160
US DOLLARS (Note 4) BALANCE AT DECEMBER 31, 2020	4,351,592	$ 1,549,712	$ 4,977,477	$ 138,938	$ 386,314	$ 1,071,402	$ 1,596,654	$ (414,599)	$ 72,219	$ (15,287)	$ (357,667)	$ (69,769)	$ 7,696,407	$ 556,127	$ 8,252,534

The accompanying notes are an integral part of the consolidated financial statements.

(Concluded)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in Thousands)

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
CASH FLOWS FROM OPERATING ACTIVITIES				
Profit before income tax	$ 31,937,678	$ 23,279,811	$ 35,768,798	$ 1,273,817
Adjustments for:				
Depreciation expense	40,286,453	46,890,235	47,525,688	1,692,510
Amortization expense	2,402,450	3,576,606	3,733,377	132,955
Net loss (gain) on fair value change of financial assets and liabilities at fair value through profit or loss	(1,989,490)	(1,646,822)	71,848	2,559
Finance costs	3,568,241	4,203,395	3,459,511	123,202
Interest income	(466,211)	(549,681)	(520,783)	(18,546)
Dividend income	(190,397)	(185,061)	(150,715)	(5,367)
Share based compensations	215,648	871,699	955,575	34,030
Share of loss (profit) of associates and joint ventures	480,244	(182,275)	(547,612)	(19,502)
Loss (gain) on disposal of property, plant and equipment	56,902	164,467	(460,868)	(16,413)
Gain on disposal of investments accounted for the equity method	-	-	(91,297)	(3,251)
Impairment loss recognized on financial assets	675,624	400,201	-	-
Reversal of impairment loss recognized on financial assets	-	(35,727)	(56,950)	(2,028)
Impairment loss recognized on non-financial assets	1,113,998	653,140	2,486,066	88,535
Gain on disposal of subsidiaries	-	-	(802,753)	(28,588)
Reversal of impairment loss recognized on non-financial assets	(100,000)	-	-	-
Gain on remeasurement of investments accounted for using the equity method	(7,421,408)	(319,712)	-	-
Net loss (gain) on foreign currency exchange	1,360,380	(1,498,107)	(2,543,821)	(90,592)
Others	1,142,735	8,687	(295,859)	(10,536)
Changes in operating assets and liabilities				
Financial assets mandatorily at fair value through profit or loss	345,540	6,102,421	2,188,285	77,930
Contract assets	(508,166)	(1,408,816)	1,113,950	39,671
Trade receivables	(9,313,539)	995,839	(9,396,304)	(334,626)
Other receivables	443,517	(10,755)	(773,411)	(27,543)
Inventories	(9,249,714)	1,407,099	(13,559,192)	(482,877)
Other current assets	(385,172)	(1,206,456)	366,237	13,043
Other operating activities assets	-	-	(14,396)	(513)
Financial liabilities held for trading	(2,039,771)	(1,053,535)	(2,763,864)	(98,428)
Trade payables	6,989,198	(1,024,250)	14,032,779	499,743
Other payables	1,016,338	1,515,776	3,601,102	128,244
Other current liabilities	228,190	655,694	23,520	838
Other operating activities liabilities	(281,736)	267,965	(301,838)	(10,749)
Cash generated from operations	60,317,532	81,871,838	83,047,073	2,957,518
Interest received	523,679	549,846	479,900	17,090
Dividend received	297,882	518,115	512,287	18,244
Interest paid	(3,239,159)	(4,015,673)	(3,442,545)	(122,598)
Income tax paid	(6,825,243)	(6,620,876)	(5,536,077)	(197,154)
Net cash generated from operating activities	51,074,691	72,303,250	75,060,638	2,673,100

(Continued)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in Thousands)

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
CASH FLOWS FROM INVESTING ACTIVITIES				
Purchase of financial assets at fair value through other comprehensive income	$ (105,000)	$ (409,985)	$ (259,168)	$ (9,230)
Proceeds from sale of financial assets at fair value through other comprehensive income	94,217	-	20,686	737
Return of capital from financial assets at fair value through other comprehensive income	116,278	12,664	84,186	2,998
Purchase of financial assets at fair value through profit or loss	-	(26,852)	-	-
Acquisition of associates and joint ventures	(451,563)	(2,107,844)	(186,071)	(6,626)
Proceeds from disposal of investments accounted using the equity method	-	-	2,271,618	80,898
Net cash outflow on acquisition of subsidiaries	(95,241,855)	(81,646)	(8,745,638)	(311,454)
Proceeds from disposal of subsidiaries	-	-	3,717,039	132,373
Return of capital by investee accounted for using the equity method	262,941	-	125,005	4,452
Payments for property, plant and equipment	(41,386,443)	(56,810,153)	(62,077,446)	(2,210,735)
Proceeds from disposal of property, plant and equipment	1,127,644	448,939	4,449,113	158,444
Payments for intangible assets	(577,765)	(1,411,068)	(982,655)	(34,995)
Proceeds from disposal of intangible assets	-	6,929	8,353	297
Payments for right-of-use assets	-	(288,052)	(118,354)	(4,215)
Payments for investment properties	(125,764)	(2,532)	(6,352)	(226)
Proceeds from disposal of investment properties	-	5	-	-
Increase in other financial assets	(10,977,004)	(2,275,354)	(822,959)	(29,308)
Decrease in other financial assets	17,185,531	8,561,929	1,083,934	38,602
Increase in other non-current assets	(2,081,459)	(216,158)	(1,338,269)	(47,659)
Decrease in other non-current assets	110,687	20,032	1,244,650	44,325
Increase in financial liabilities for hedging	2,507,233	-	-	-
Proceeds from disposal of right-of-use assets	-	-	585,902	20,865
Other investing activities items	-	89	123	4
Net cash used in investing activities	(129,542,322)	(54,579,057)	(60,946,303)	(2,170,453)
CASH FLOWS FROM FINANCING ACTIVITIES				
Proceeds from short-term borrowings	22,327,813	-	-	-
Repayment of short-term borrowings	-	(4,683,142)	(1,502,323)	(53,502)
Proceeds from bonds offering	-	19,279,033	19,967,149	711,081
Repayment of bonds payable	(6,185,600)	-	(250,000)	(8,903)
Proceeds from long-term borrowings	199,743,582	165,757,252	180,020,420	6,410,984
Repayment of long-term borrowings	(114,232,623)	(164,612,521)	(206,520,559)	(7,354,721)
Repayment of the principle portion of lease liabilities	-	(636,556)	(844,357)	(30,070)
Dividends paid	(10,613,626)	(10,623,030)	(8,520,982)	(303,454)
Proceeds from exercise of employee share options	1,269,680	1,149,227	1,934,530	68,894
Payments for buy-back of ordinary shares	(71,302)	-	-	-
Proceeds from disposal of interests in subsidiaries	2,807,568	-	-	-

(Continued)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in Thousands)

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Decrease in non-controlling interests	$ (11,820,227)	$ (12,117,251)	$ (6,291,089)	$ (224,042)
Other financing activities items	(113,859)	(11,820)	11,867	423
Net cash generated from (used in) financing activities	83,111,406	(6,498,808)	(21,995,344)	(783,310)
EFFECTS OF EXCHANGE RATE CHANGES ON THE BALANCE OF CASH AND CASH EQUIVALENTS HELD IN FOREIGN CURRENCY	796,595	(2,612,946)	(711,795)	(25,349)
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	5,440,370	8,612,439	(8,592,804)	(306,012)
CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE YEAR	46,078,066	51,518,436	60,130,875	2,141,413
CASH AND CASH EQUIVALENTS AT THE END OF THE YEAR	$ 51,518,436	$ 60,130,875	$ 51,538,071	$ 1,835,401

The accompanying notes are an integral part of the consolidated financial statements. (Concluded)

(Amounts in Thousands, Unless Stated Otherwise)

1. GENERAL INFORMATION

ASE Technology Holding Co., Ltd. (the "Company") is a corporation incorporated in Nanzih Technology Industrial Park (formerly known as Nantze Export Processing Zone) under the laws of Republic of China ("R.O.C.") starting from April 30, 2018 (date of incorporation). The Company and its subsidiaries (collectively referred to as the "Group") offer a comprehensive range of semiconductors packaging, testing, and electronic manufacturing services ("EMS").

The Company's subsidiaries, Advanced Semiconductor Engineering, Inc. (symbol "2311", "ASE") and Siliconware Precision Industries Co., Ltd. (symbol "2325", "SPIL"), entered into and executed a joint share exchange agreement to establish the Company and the Company acquired all issued and outstanding ordinary shares of ASE and SPIL on April 30, 2018. Both of ASE's and SPIL's ordinary shares have been delisted while the ordinary shares of the Company were listed starting from the same date under the symbol "3711". In addition, ASE's ordinary shares that have been traded on the New York Stock Exchange (the "NYSE") under the symbol "ASX" in the form of American Depositary Shares ("ADS") starting from September 2000 were exchanged as the Company's ADSs under the same symbol "ASX" starting from April 30, 2018.

The ordinary shares of the Company's subsidiary, Universal Scientific Industrial (Shanghai) Co., Ltd. ("USISH"), have been listed on the Shanghai Stock Exchange under the symbol "601231" since February 2012.

The consolidated financial statements are presented in the Company's functional currency, New Taiwan dollar (NT$).

2. APPROVAL OF FINANCIAL STATEMENTS

The consolidated financial statements were authorized for issue by the management on March 18, 2021.

3. APPLICATION OF NEW AND REVISED INTERNATIONAL FINANCIAL REPORTING STANDARDS AS ISSUED BY THE INTERNATIONAL ACCOUNTING STANDARDS BOARD ("IASB") (collectively, "IFRSs")

a. Amendments to IFRSs that are mandatorily effective for the current year

In the current year, the Group has applied the following new, revised or amended standards and interpretations that have been issued and effective:

New, Revised or Amended Standards and Interpretations	Effective Date Issued by IASB
Amendments to IFRS 3 "Definition of a Business"	January 1, 2020
Amendments to IFRS 9, IAS 39 and IFRS 7 "Interest Rate Benchmark Reform"	January 1, 2020
Amendments to IAS 1 and IAS 8 "Definition of Material"	January 1, 2020

(Continued)

New, Revised or Amended Standards and Interpretations	Effective Date Issued by IASB
Amendments to References to the Conceptual Framework in IFRS Standards	January 1, 2020
Amendment to IFRS 16 “COVID-19-Related Rent Concessions”	June 1, 2020

(Concluded)

Except for the following, the initial application of the aforementioned new, revised or amended standards and interpretations did not have effect on the Group’s accounting policies:

1) Amendments to IFRS 3 “Definition of a Business”

The Group applies the amendments to IFRS 3 to transactions that occur on or after January 1, 2020. The amendments clarify that to be considered a business, an acquired set of activities and assets must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs. To determine whether an acquired process is substantive, different criteria apply, depending on whether there are outputs at the acquisition date. In addition, the amendments introduce an optional concentration test that permits a simplified assessment of whether or not an acquired set of activities and assets is a business.

2) Amendments to IFRS 9, IAS 39 and IFRS 7 “Interest Rate Benchmark Reform”

Upon retrospective application of the amendments, the Group complied with the hedge accounting requirements under the assumption that the interest rate benchmark (such as the London Interbank Offered Rate or LIBOR) on which the hedged cash flows and cash flows from the hedging instrument are based will not be altered as a result of interest rate benchmark reform.

3) Amendments to IAS 1 and IAS 8 “Definition of Material”

The Group adopted the amendments starting from January 1, 2020. The threshold of materiality that could influence users has been changed to “could reasonably be expected to influence”. Accordingly, disclosures in the consolidated financial statements do not include immaterial information that may obscure material information.

4) Amendment to IFRS 16 “COVID-19-Related Rent Concessions”

The Group elected to apply the practical expedient provided in the amendment to IFRS 16 with respect to rent concessions negotiated with the lessor as a direct consequence of the COVID-19. The related accounting policies are stated in Note 4. Prior to the application of the amendment, the Group shall determine whether or not the abovementioned rent concessions need to be accounted for as lease modifications.

The Group applied the amendment from January 1, 2020. Because the abovementioned rent concessions affected only in 2020, retrospective application of the amendment had no impact on the retained earnings as of January 1, 2020.

b. New, revised or amended standards and interpretations in issue but not yet effective

The Group has not applied the following new, revised or amended standards and interpretations that have been issued but are not yet effective:

New, Revised or Amended Standards and Interpretations	Effective Date Announced by IASB (Note 1)
"Annual Improvements to IFRS Standards 2018–2020"	January 1, 2022 (Note 2)
Amendments to IFRS 3 "Reference to the Conceptual Framework"	January 1, 2022 (Note 3)
Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 "Interest Rate Benchmark Reform - Phase 2"	January 1, 2021
Amendments to IFRS 10 and IAS 28 "Sale or Contribution of Assets between an Investor and its Associate or Joint Venture"	To be determined by IASB
Amendments to IAS 1 "Classification of Liabilities as Current or Non-current"	January 1, 2023
Amendments to IAS 1 "Disclosure of Accounting Policies"	January 1, 2023 (Note 6)
Amendments to IAS 8 "Definition of Accounting Estimates"	January 1, 2023 (Note 7)
Amendments to IAS 16 "Property, Plant and Equipment - Proceeds before Intended Use"	January 1, 2022 (Note 4)
Amendments to IAS 37 "Onerous Contracts–Cost of Fulfilling a Contract"	January 1, 2022 (Note 5)

Note 1: Unless stated otherwise, the above New IFRSs are effective for annual reporting periods beginning on or after their respective effective dates.

Note 2: The amendments to IFRS 9 will be applied prospectively to modifications and exchanges of financial liabilities that occur on or after the annual reporting periods beginning on or after January 1, 2022. The amendments to IFRS 1 "First-time Adoptions of IFRSs" will be applied retrospectively for annual reporting periods beginning on or after January 1, 2022.

Note 3: The amendments are applicable to business combinations for which the acquisition date is on or after the beginning of the annual reporting period beginning on or after January 1, 2022.

Note 4: The amendments are applicable to property, plant and equipment that are brought to the location and condition necessary for them to be capable of operating in the manner intended by management on or after January 1, 2021.

Note 5: The amendments are applicable to contracts for which the entity has not yet fulfilled all its obligations on January 1, 2022.

Note 6: The amendments will be applied prospectively for annual reporting periods beginning on or after January 1, 2023.

Note 7: The amendments are applicable to changes in accounting estimates and changes in accounting policies that occur on or after the beginning of the annual reporting period beginning on or after January 1, 2023.

c. Significant changes in accounting policy resulted from new, revised and amended standards and interpretations in issue but not yet effective

Except for the following, as of the date that the accompanying consolidated financial statements were authorized for issue, the Group continues evaluating the impact on its financial position and financial performance as a result of the initial application of the aforementioned new, revised or amended standards and interpretations. The related impact will be disclosed when the Group completes the evaluation.

1) Amendments to IAS 1 “Classification of Liabilities as Current or Non-current”

The amendments clarify that for a liability to be classified as non-current, the Group shall assess whether it has the right at the end of the reporting period to defer settlement of the liability for at least twelve months after the reporting period. If such rights are in existence at the end of the reporting period, the liability is classified as non-current regardless of whether the Group will exercise that right. The amendments also clarify that, if the right to defer settlement is subject to compliance with specified conditions, the Group must comply with those conditions at the end of the reporting period even if the lender does not test compliance until a later date.

The amendments stipulate that, for the purpose of liability classification, the aforementioned settlement refers to a transfer of cash, other economic resources or the Group’s own equity instruments to the counterparty that results in the extinguishment of the liability. However, if the terms of a liability that could, at the option of the counterparty, result in its settlement by a transfer of the Group’s own equity instruments, and if such option is recognized separately as equity in accordance with IAS 32 “Financial Instruments: Presentation”, the aforementioned terms would not affect the classification of the liability.

2) Amendments to IAS 16 “Property, Plant and Equipment: Proceeds before Intended Use”

The amendments prohibit an entity from deducting from the cost of an item of property, plant and equipment any proceeds from selling items produced while bringing that asset to the location and condition necessary for it to be capable of operating in the manner intended by management. The cost of those items is measured in accordance with IAS 2 “Inventories”. Any proceeds from selling those items and the cost of those items are recognized in profit or loss in accordance with applicable standards.

The amendments are applicable only to items of property, plant and equipment that are brought to the location and condition necessary for them to be capable of operating in the manner intended by management on or after January 1, 2021.

3) Amendments to IAS 37 “Onerous Contracts - Cost of Fulfilling a Contract”

The amendments specify that when assessing whether a contract is onerous, the “cost of fulfilling a contract” includes both the incremental costs of fulfilling that contract (for example, direct labor and materials) and an allocation of other costs that relate directly to fulfilling contracts (for example, an allocation of depreciation for an item of property, plant and equipment used in fulfilling the contract).

The Group will recognize the cumulative effect of the initial application of the amendments in the retained earnings at the date of the initial application.

4) Amendments to IAS 1 “Disclosure of Accounting Policies”

The amendments specify that the Group should refer to the definition of material to determine its material accounting policy information to be disclosed. Accounting policy information is material if it can reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements. The amendments also clarify that:

- accounting policy information that relates to immaterial transactions, other events or conditions is immaterial and need not be disclosed;
- the Group may consider the accounting policy information as material because of the nature of the related transactions, other events or conditions, even if the amounts are immaterial; and
- not all accounting policy information relating to material transactions, other events or conditions is itself material.

The amendments also illustrate that accounting policy information is likely to be considered as material to the financial statements if that information relates to material transactions, other events or conditions and:

(1) the Group changed its accounting policy during the reporting period and this change resulted in a material change to the information in the financial statements;
(2) the Group chose the accounting policy from options permitted by the standards;
(3) the accounting policy was developed in accordance with IAS 8 "Accounting Policies, Changes in Accounting Estimates and Errors" in the absence of an IFRS that specifically applies;
(4) the accounting policy relates to an area for which the Group is required to make significant judgments or assumptions in applying an accounting policy, and the Group discloses those judgments or assumptions; or
(5) the accounting is complex and users of the financial statements would otherwise not understand those material transactions, other events or conditions.

5) Amendments to IAS 8 "Definition of Accounting Estimates"

The amendments define that accounting estimates are monetary amounts in financial statements that are subject to measurement uncertainty. In applying accounting policies, the Group may be required to measure items at monetary amounts that cannot be observed directly and must instead be estimated. In such a case, the Group uses measurement techniques and inputs to develop accounting estimates to achieve the objective. The effects on an accounting estimate of a change in a measurement technique or a change in an input are changes in accounting estimates unless they result from the correction of prior period errors.

4. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

a. Statement of compliance

The consolidated financial statements have been prepared in accordance with IFRSs as issued by the IASB.

b. Basis of preparation

The consolidated financial statements have been prepared on the historical cost basis except for financial instruments measured at fair value and net defined benefit liabilities which are measured at the present value of the defined benefit obligation less the fair value of plan assets.

The fair value measurements, which are grouped into Levels 1 to 3 based on the degree to which the fair value measurement inputs are observable and based on the significance of the inputs to the fair value measurement in its entirety, are described as follows:

1) Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities;

2) Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for an asset or a liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and

3) Level 3 inputs are unobservable inputs for an asset or a liability.

c. Classification of current and non-current assets and liabilities

Current assets include cash and cash equivalents and those assets held primarily for trading purposes or expected to be realized within twelve months after the balance sheet date, unless the asset is to be used for an exchange or to settle a liability, or otherwise remains restricted, at more than twelve months after the balance sheet date. Current liabilities are obligations incurred for trading purposes or to be settled within twelve months after the balance sheet date (even if an agreement to refinance, or to reschedule payments, on a long-term basis is completed after the balance sheet date and before the consolidated financial statements are authorized for issue) and liabilities that do not have an unconditional right to defer settlement for at least 12 months after the balance sheet date (terms of a liability that could, at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification). Assets and liabilities that are not classified as current are classified as non-current.

The Group engages in the construction business which has an operating cycle of over one year. The normal operating cycle applies when considering the classification of the Group's construction-related assets and liabilities.

d. Basis of consolidation

1) Principles for preparing consolidated financial statements

The consolidated financial statements incorporate the financial statements of the Company and the entities controlled by the Company (i.e. its subsidiaries).

Income and expenses of subsidiaries acquired or disposed of during the period are included in the consolidated statement of profit or loss and other comprehensive income from the effective dates of acquisitions up to the effective dates of disposals, as appropriate.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with those used by the Company.

All intra-group transactions, balances, income and expenses are eliminated in full upon consolidation. Total comprehensive income of subsidiaries is attributed to the owners of the Company and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

Changes in the Group's ownership interests in subsidiaries that do not result in the Group losing control over the subsidiaries are accounted for as equity transactions. The carrying amounts of the interests of the Group and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognized directly in equity and attributed to the owners of the Company.

When the Group loses control of a subsidiary, a gain or loss is recognized in profit or loss and is calculated as the difference between (i) the aggregate of the fair value of the consideration received and any investment retained in the former subsidiary at its fair value at the date when control is lost and (ii) the assets (including any goodwill) and liabilities and any non-controlling interests of the former subsidiary at their carrying amounts at the date when control is lost. The Group accounts for all amounts recognized in other comprehensive income in relation to that subsidiary on the same basis as would be required had the Group directly disposed of the related assets or liabilities.

2) Subsidiaries included in consolidated financial statements were as follows:

Name of Investor	Name of Investee	Main Businesses	Establishment and Operating Location	Percentage of Ownership (%) December 31, 2019	Percentage of Ownership (%) December 31, 2020
The Company	ASE	Engaged in the packaging and testing of semiconductors	R.O.C.	100.0	100.0
	USI Inc. ("USIINC")	Holding company	R.O.C.	100.0	100.0
	SPIL	Engaged in the assembly, testing and turnkey services of integrated circuit	R.O.C.	100.0	100.0
ASE	A.S.E. Holding Limited	Holding company	Bermuda	100.0	100.0
	J & R Holding Limited ("J&R Holding")	Holding company	Bermuda	100.0	100.0
	Innosource Limited	Holding company	British Virgin Islands	100.0	100.0
	Omniquest Industrial Limited	Holding company	British Virgin Islands	71.0	71.0
	ASE Marketing & Service Japan Co., Ltd.	Engaged in marketing and sales services	Japan	100.0	100.0
	ASE Test, Inc.	Engaged in the testing of semiconductors	R.O.C.	100.0	100.0
	Luchu Development Corporation	Engaged in the development of real estate properties	R.O.C.	67.1	67.1
	ASE Embedded Electronics Inc. ("ASEEE")	Merged into ASE in February 2020	R.O.C.	100.0	-
	Advanced Microelectronic Products Inc. ("AMPI")	Engaged in the manufacturing of integrated circuit	R.O.C.	7.6	7.6
ASE Test, Inc.	Alto Enterprises Limited	Holding company	British Virgin Islands	100.0	100.0
	Super Zone Holdings Limited	Holding company	Hong Kong	100.0	100.0
	Luchu Development Corporation	Engaged in the development of real estate properties	R.O.C.	19.0	19.0
	TLJ Intertech Inc.	Engaged in information software services	R.O.C.	60.0	60.0
	MingFeng Information Service Corp., Ltd.	Engaged in information software services	R.O.C.	100.0	100.0
	AMPI	Engaged in the manufacturing of integrated circuit	R.O.C.	43.4	43.4
A.S.E. Holding Limited	ASE Investment (Labuan) Inc.	Holding company	Malaysia	70.1	70.1
	ASE Test Limited ("ASE Test")	Holding company	Singapore	10.2	10.2
J&R Holding	ASE Test	Holding company	Singapore	89.8	89.8
	Omniquest Industrial Limited	Holding company	British Virgin Islands	8.4	8.4
	J&R Industrial Inc.	Engaged in leasing equipment and investing activity	R.O.C.	100.0	100.0
	ASE Japan Co., Ltd. ("ASE Japan")	Engaged in the packaging and testing of semiconductors	Japan	100.0	100.0
	ASE (U.S.) Inc.	After-sales service and sales support	U.S.A.	100.0	100.0
	Global Advanced Packaging Technology Limited	Holding company	British Cayman Islands	100.0	100.0
	Anstock Limited	Engaged in financing activity	British Cayman Islands	100.0	100.0
	Anstock II Limited	Engaged in financing activity	British Cayman Islands	100.0	100.0
	Suzhou ASEN Semiconductors Co., Ltd. ("ASEN")	Engaged in the packaging and testing of semiconductors	Suzhou, China	100.0	100.0
Innosource Limited	Omniquest Industrial Limited	Holding company	British Virgin Islands	20.6	20.6
	ASE (Shanghai) Inc.	Engaged in the production of substrates	Shanghai, China	8.5	8.5
Omniquest Industrial Limited	ASE Corporation	Holding company	British Cayman Islands	100.0	100.0
Alto Enterprises Limited	ASE (Kunshan) Inc.	Engaged in the packaging and testing of semiconductors	Kun Shan, China	22.9	22.9
	ASE Investment (Kun Shan) Limited	Holding company	Kun Shan, China	85.9	85.9
Super Zone Holdings Limited	Advanced Semiconductor Engineering (China) Ltd.	Engaged in the packaging and testing of semiconductors	Shanghai, China	100.0	100.0
ASE Investment (Labuan) Inc.	ASE (Korea) Inc. ("ASE Korea")	Engaged in the packaging and testing of semiconductors	Korea	100.0	100.0
ASE Korea	ASE WeiHai Inc.	Engaged in the packaging and testing of semiconductors	Shandong, China	100.0	100.0
ASE Test	ASE Test Holdings, Ltd.	Holding company	British Cayman Islands	100.0	100.0
	ASE Holdings (Singapore) Pte Ltd	Holding company	Singapore	100.0	100.0
	ASE Investment (Labuan) Inc.	Holding company	Malaysia	29.9	29.9
	ASE Singapore Pte. Ltd.	Engaged in the packaging and testing of semiconductors	Singapore	100.0	100.0
ASE Test Holdings, Ltd.	ISE Labs, Inc.	Engaged in the testing of semiconductors	U.S.A.	100.0	100.0

(Continued)

Name of Investor	Name of Investee	Main Businesses	Establishment and Operating Location	Percentage of Ownership (%) December 31, 2019	December 31, 2020
ISE Labs, Inc.	ISE Services, Inc.	Engaged in wafer procurement and customer product management services and commenced operations in February 2020	U.S.A.	-	100.0
ASE Holdings (Singapore) Pte Ltd	ASE Electronics (M) Sdn. Bhd.	Engaged in the packaging and testing of semiconductors	Malaysia	100.0	100.0
Global Advanced Packaging Technology Limited	ASE Assembly & Test (Shanghai) Limited ("ASESH")	Engaged in the packaging and testing of semiconductors	Shanghai, China	100.0	100.0
	ASE Advanced Semiconductor (Shanghai) Limited	Engaged in the packaging and testing of semiconductors and was established and spun off from ASESH in November 2020	Shanghai, China	-	100.0
ASESH	ASE Investment (Kun Shan) Limited	Holding company	Kun Shan, China	14.1	14.1
	Wuxi Tongzhi Microelectronics Co., Ltd.	Engaged in the packaging and testing of semiconductors	Wuxi, China	100.0	100.0
	ISE Labs, China, Ltd.	Engaged in the testing of semiconductor	Shanghai, China	100.0	100.0
	Shanghai Ding Hui Real Estate Development Co., Ltd. ("DH")	Engaged in the development, construction and sale of real estate properties	Shanghai, China	60.0	60.0
DH	Shanghai Ding Qi Property Management Co., Ltd.	Engaged in the management of real estate properties	Shanghai, China	100.0	100.0
	Shanghai Ding Wei Real Estate Development Co., Ltd. ("DW")	Engaged in the development, construction and leasing of real estate properties	Shanghai, China	100.0	100.0
	Shanghai Ding Yu Real Estate Development Co., Ltd.	Engaged in the development, construction and leasing of real estate properties	Shanghai, China	100.0	100.0
	Kun Shan Ding Hong Real Estate Development Co., Ltd	Engaged in the development, construction and leasing of real estate properties	Kun Shan, China	100.0	100.0
	Shanghai Ding Xu Property Management Co., Ltd.	Engaged in the management of real estate properties	Shanghai, China	100.0	100.0
	Shanghai Dingyao Estate Development Co., Ltd.	Engaged in property management and was invested in April 2020	Shanghai, China	-	100.0
	Shanghai Ding Fan Business Management Co., Ltd. (The name was changed on June 2020 and the former name was Shanghai Ding Fan Department Store Co., Ltd.)	Engaged in the management of real estate properties (acquired from DW in November 2020)	Shanghai, China	-	100.0
DW	Shanghai Ding Fan Business Management Co., Ltd. (The name was changed on June 2020 and the former name was Shanghai Ding Fan Department Store Co., Ltd.)	Engaged in leasing and management of real estate properties (disposed to DH in November 2020)	Shanghai, China	100.0	-
ASE Investment (Kun Shan) Limited	ASE (Kunshan) Inc.	Engaged in the packaging and testing of semiconductors	Kun Shan, China	49.3	49.3
ASE Corporation	ASE Mauritius Inc.	Holding company	Mauritius	100.0	100.0
	ASE Labuan Inc.	Holding company	Malaysia	100.0	100.0
ASE Mauritius Inc.	ASE (Kunshan) Inc.	Engaged in the packaging and testing of semiconductors	Kun Shan, China	27.8	27.8
	ASE (Shanghai) Inc.	Engaged in the production of substrates	Shanghai, China	91.5	91.5
ASE Labuan Inc.	ASE Electronics Inc.	Engaged in the production of substrates	R.O.C.	100.0	100.0
ASE (Shanghai) Inc.	Advanced Semiconductor Engineering (HK) Limited	Engaged in the trading of substrates	Hong Kong	100.0	100.0
	Shanghai Ding Hui Real Estate Development Co., Ltd.	Engaged in the development, construction and sale of real estate properties	Shanghai, China	40.0	40.0
	Universal Scientific Industrial (Shanghai) Co., Ltd. ("USISH")	Engaged in the designing, manufacturing and sales of electronic components	Shanghai, China	0.8	0.8
USIINC	Huntington Holdings International Co., Ltd.	Holding company	British Virgin Islands	100.0	100.0
Huntington Holdings International Co., Ltd.	Unitech Holdings International Co., Ltd.	Holding company	British Virgin Islands	100.0	100.0
	Real Tech Holdings Limited	Holding company	British Virgin Islands	100.0	100.0
	Universal ABIT Holding Co., Ltd.	In the process of liquidation	British Cayman Islands	100.0	100.0
Real Tech Holdings Limited	Universal Scientific Industrial (Kunshan) Co., Ltd.	Liquidated in June 2020	Kun Shan, China	100.0	-
	USI Enterprise Limited ("USIE")	Engaged in the service of investment advisory and warehousing management	Hong Kong	95.8	95.9
USIE	USISH	Engaged in the designing, manufacturing and sales of electronic components	Shanghai, China	77.7	76.6
USISH	Universal Global Technology Co., Limited	Holding company	Hong Kong	100.0	100.0

(Continued)

Name of Investor	Name of Investee	Main Businesses	Establishment and Operating Location	Percentage of Ownership (%) December 31, 2019	Percentage of Ownership (%) December 31, 2020
	Universal Global Technology (Kunshan) Co., Ltd. ("UGKS")	Engaged in the designing and manufacturing of electronic components	Kun Shan, China	100.0	100.0
	Universal Global Technology (Shanghai) Co., Ltd.	Engaged in the processing and sales of computer and communication peripherals as well as business in import and export of goods and technology	Shanghai, China	100.0	100.0
	Universal Global Electronics (Shanghai) Co., Ltd.	Engaged in the sales of electronic components and telecommunications equipment	Shanghai, China	100.0	100.0
	USI Electronics (Shenzhen) Co., Ltd.	Engaged in the design, manufacturing and sales of motherboards and computer peripherals	Shenzhen, China	50.0	50.0
	Huanrong Electronics (Huizhou) Co., Ltd.	Engaged in the research and manufacturing of new electronic applications, communications, computers and other electronics products and also provided auxiliary technical services as well as import and export services (acquired from Universal Global Electronics (Shanghai) Co., Ltd. in November 2020)	Huizhou, China	-	100.0
	FINANCIERE AFG ("FAFG")	Holding company	France	-	10.4
Universal Global Technology Co., Limited	Universal Global Industrial Co., Limited	Engaged in manufacturing, trading and investing activity	Hong Kong	100.0	100.0
	Universal Global Scientific Industrial Co., Ltd. ("UGTW")	Engaged in the manufacturing of components of telecomm and cars and provision of related R&D services	R.O.C.	100.0	100.0
	USI America Inc.	Engaged in the manufacturing and processing of motherboards and wireless network communication and provision of related technical service	U.S.A.	100.0	100.0
	Universal Scientific Industrial De Mexico S.A. De C.V.	Engaged in the assembling of motherboards and computer components	Mexico	100.0	100.0
	USI Japan Co., Ltd.	Engaged in the manufacturing and sales of computer peripherals, integrated chip and other related accessories	Japan	100.0	100.0
	USI Electronics (Shenzhen) Co., Ltd.	Engaged in the design, manufacturing and sales of motherboards and computer peripherals	Shenzhen, China	50.0	50.0
	Universal Global Electronics Co., Ltd.	Engaged in accepting and outsourcing orders as well as sales of electronic components and service of technical advisory	Hong Kong	100.0	100.0
	Universal Scientific Industrial (France) ("USIFR")	Engaged in investing activities and was established in August 2019	France	100.0	100.0
	Universal Scientific Industrial Vietnam Company Limited	Engaged in IC assembly for wearable devices and was established in July 2020.	Vietnam	-	100.0
Universal Global Industrial Co., Limited	Universal Scientific Industrial De Mexico S.A. De C.V.	Engaged in the assembling of motherboards and computer components	Mexico	(Note)	(Note)
UGTW	Universal Scientific Industrial Co., Ltd. ("USI")	Engaged in the manufacturing, processing and sales of computers, computer peripherals and related accessories	R.O.C.	100.0	100.0
USI Electronics (Shenzhen) Co., Ltd.	Huanrong Electronics (Huizhou) Co., Ltd.	Engaged in the research and manufacturing of new electronic applications, communications, computers and other electronics products and also provided auxiliary technical services as well as import and export services (disposed to USISH in November 2020)	Huizhou, China	100.0	-
Universal Global Electronics Co., Ltd.	Semicondutores Avancados do Brasil S.A.	Liquidated in December 2020	Brasil	75.0	-
	Universal Scientific Industrial Poland Sp. z o.o. ("USIPL") (The name was changed on June 2020 and the former name was Chung Hong Electronics Poland Sp. z o.o.)	Engaged in the design and manufacturing of electronic components and new electronic applications	Poland	60.0	100.0
Universal Global Electronics (Shanghai) Co., Ltd.	USI Science and Technology (Shenzhen) Co., Ltd.	Engaged in the design of electronic components, service of technical advisory; wholesale of electronic components and communication peripherals as well as business in import and export of goods and management of properties and was established in November 2020.	Shenzhen, China	-	100.0
USIFR	FAFG	Holding company	France	-	89.6
	ASTEELFLASH GROUP	Holding company	France	-	(Note)

(Continued)

Name of Investor	Name of Investee	Main Businesses	Establishment and Operating Location	Percentage of Ownership (%) December 31, 2019	December 31, 2020
FAFG	ASTEELFLASH GROUP	Holding company	France	-	100.0
	MANUFACTURING POWER TUNISIA	Engaged in the design and manufacturing of electronic components	Tunisia	-	0.1
	ASTEELFLASH MEXICO S.A. de C.V.	Engaged in the design and manufacturing of electronic components	Mexico	-	0.1
ASTEELFLASH GROUP	ASTEELFLASH (BEDFORD) LIMITED	Engaged in the design and manufacturing of electronic components	United Kingdom	-	100.0
	ASTEELFLASH FRANCE	Engaged in the design and manufacturing of electronic components	France	-	99.9
	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	-	100.0
	ASTEELFLASH HONG KONG LIMITED	Holding company	Hong Kong	-	100.0
	ASTEELFLASH MEXICO S.A. de C.V.	Engaged in the design and manufacturing of electronic components	Mexico	-	99.9
	ASTEELFLASH GERMANY GmbH	Engaged in the design and manufacturing of electronic components	Germany	-	100.0
	MANUFACTURING POWER TUNISIA	Engaged in the design and manufacturing of electronic components	Tunisia	-	99.9
	ASTEELFLASH US HOLDING CORP.	Holding company	U.S.A.	-	100.0
	ASTEEL ELECTRONIQUE FOUCHANA	Engaged in the design and manufacturing of electronic components	Tunisia	-	(Note)
	AFERH TUNISIE	Engaged in the management, training and consulting of human resources	Tunisia	-	0.5
	ASTEEL ELECTRONICS MANUFACTURING SERVICES	Engaged in the design and manufacturing of electronic components	Tunisia	-	0.1
ASTEELFLASH (BEDFORD) LIMITED	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	-	(Note)
ASTEELFLASH TECHNOLOGIE	ASTEELFLASH FRANCE	Engaged in the design and manufacturing of electronic components	France	-	(Note)
ASTEELFLASH FRANCE	SCI CHASSET	Engaged in the management and operation of real estate properties and holding the ownership of real estate properties	France	-	100.0
	AFERH	Engaged in the management, training and consulting of human resources	France	-	100.0
	ASTEEL ELECTRONICS MANUFACTURING SERVICES	Engaged in the design and manufacturing of electronic components	Tunisia	-	99.9
	ASTEEL ELECTRONIQUE FOUCHANA	Engaged in the design and manufacturing of electronic components	Tunisia	-	94.2
	ASTEELFLASH TECHNOLOGIE	Engaged in projection of plastic and the design and manufacturing of industrial components	France	-	100.0
	ASTEELFLASH BRETAGNE	Engaged in the design and manufacturing of electronic components	France	-	100.0
	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	-	(Note)
ASTEELFLASH TUNISIE S.A.	ASTEEL ELECTRONIQUE TUNISIE	Engaged in the design and manufacturing of electronic components	Tunisia	-	100.0
	ASTEEL ELECTRONIQUE FOUCHANA	Engaged in the design and manufacturing of electronic components	Tunisia	-	(Note)
AFERH	AFERH TUNISIE	Engaged in the management, training and consulting of human resources	Tunisia	-	99.5
ASTEELFLASH HONG KONG LIMITED	ASTEELFLASH SUZHOU CO., LTD.	Engaged in the design and manufacturing of electronic components	Suzhou, China	-	100.0
ASTEELFLASH SUZHOU CO., LTD.	ASTEEL ELECTRONIQUE FOUCHANA	Engaged in the design and manufacturing of electronic components	Tunisia	-	(Note)
	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	-	(Note)
ASTEELFLASH GERMANY GmbH	ASTEELFLASH HERSFELD GmbH	Engaged in the design and manufacturing of electronic components	Germany	-	100.0
	ASTEELFLASH EBERBACH GmbH	Engaged in the design and manufacturing of electronic components	Germany	-	100.0
	ASTEELFLASH BONN GmbH	Engaged in the design and manufacturing of electronic components	Germany	-	100.0
	ASTEELFLASH SCHWANDORF GmbH	Engaged in the design and manufacturing of electronic components	Germany	-	100.0
	ASTEELFLASH PLZEN S.R.O.	Engaged in the design and manufacturing of electronic components	Czech Republic	-	100.0
	ASTEELFLASH DESIGN SOLUTIONS HAMBOURG GmbH	Engaged in the design and manufacturing of electronic components	Germany	-	100.0
	EN ELECTRONICNETWORK SRL	Engaged in the design and manufacturing of electronic components	Romania	-	100.0

(Continued)

Name of Investor	Name of Investee	Main Businesses	Establishment and Operating Location	Percentage of Ownership (%) December 31, 2019	December 31, 2020
	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	-	(Note)
ASTEELFLASH MEXICO S.A. de C.V.	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	-	(Note)
ASTEELFLASH US HOLDING CORP.	ASTEELFLASH USA CORP.	Engaged in the design and manufacturing of electronic components	U.S.A.	-	100.0
ASTEELFLASH USA CORP.	ASTEEL ELECTRONIQUE FOUCHANA	Engaged in the design and manufacturing of electronic components	Tunisia	-	(Note)
	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	-	(Note)
SPIL	SPIL (B.V.I.) Holding Limited	Engaged in investing activities	British Virgin Islands	100.0	100.0
	Siliconware Investment Co., Ltd.	Engaged in investing activities	R.O.C.	100.0	100.0
SPIL (B.V.I.) Holding Limited	Siliconware USA, Inc.	Engaged in marketing activities	U.S.A.	100.0	100.0
	SPIL (Cayman) Holding Limited	Engaged in investing activities	British Cayman Islands	100.0	100.0
SPIL (Cayman) Holding Limited	Siliconware Technology (Suzhou) Limited (“SZ”)	Engaged in the packaging and testing of semiconductors	Suzhou, China	100.0	100.0
	Siliconware Electronics (Fujian) Co., Limited (“SF”)	Engaged in the packaging and testing of semiconductors and was disposed in October 2020 (Note 30)	Fujian, China	100.0	-

(Concluded)

Note: The number of shares held is 1 share or 3 shares and representing less than 0.1% of total shares.

e. Business combinations

Acquisitions of businesses are accounted for using the acquisition method. Acquisition-related costs are generally recognized in profit or loss as they are incurred.

Goodwill is measured as the excess of the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree, and the fair value of the acquirer’s previously held equity interest in the acquiree (if any) over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed. If, after re-assessment, the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed exceeds the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree and the fair value of the acquirer’s previously held interest in the acquiree (if any), the excess is recognized immediately in profit or loss as a bargain purchase gain.

Non-controlling interests that are present ownership interests and entitle their holders to a proportionate share of the entity’s net assets in the event of liquidation may be initially measured either at fair value or at the non-controlling interests’ proportionate share of the recognized amounts of the acquiree’s identifiable net assets. The choice of measurement is made on a transaction-by-transaction basis. Other types of non-controlling interests are measured at fair value.

Where the consideration the Group transfers in a business combination includes assets or liabilities resulting from a contingent consideration arrangement, the contingent consideration is measured at its acquisition-date fair value and considered as part of the consideration transferred in a business combination. Changes in the fair value of the contingent consideration that qualify as measurement period adjustments are adjusted retrospectively, with the corresponding adjustments being made against goodwill or gains on bargain purchases. Measurement period adjustments are adjustments that arise from additional information obtained during the measurement period about facts and circumstances that existed as of the acquisition date. The measurement period does not exceed 1 year from the acquisition date.

The subsequent accounting for changes in the fair value of the contingent consideration that do not qualify as measurement period adjustments depends on how the contingent consideration is classified.

Contingent consideration not classified as equity is remeasured at fair value at the end of subsequent reporting period with any gain or loss recognized in profit or loss.

When a business combination is achieved in stages, the Group's previously held equity interest in an acquiree is remeasured to fair value at acquisition date, and the resulting gain or loss, if any, is recognized in profit or loss or other comprehensive income. Amounts arising from interests in the acquiree prior to the acquisition date that have previously been recognized in other comprehensive income are recognized on the same basis as would be required had those interest been directly disposed of by the Group.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted retrospectively during the measurement period, or additional assets or liabilities are recognized, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognized at that date.

Business combination involving entities under common control is not accounted for using the acquisition method but is accounted for at the carrying amounts of the entities. The Group elected not to restate comparative information of the prior period in the financial statements as the business combination was an organization restructure under common control.

f. Foreign currencies

In preparing the financial statements of each individual entity, transactions in currencies other than the entity's functional currency (i.e. foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions.

At each balance sheet date, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Exchange differences on monetary items arising from settlement or translation are recognized in profit or loss in the period in which they arise except for exchange differences on transactions entered into in order to hedge certain foreign currency risks.

Non-monetary items denominated in foreign currencies that are measured at fair value are retranslated at the rates prevailing at the date when the fair value was determined. Exchange differences arising from the retranslation of non-monetary items are included in profit or loss for the period except for exchange differences arising from the retranslation of non-monetary items in respect of which gains and losses are recognized directly in other comprehensive income, in which cases, the exchange differences are also recognized directly in other comprehensive income.

Non-monetary items denominated in a foreign currency and measured at historical cost are translated using the exchange rate at the date of the transaction, and are not retranslated.

For the purposes of presenting the consolidated financial statements, the assets and liabilities of the Group's foreign operations (including subsidiaries, associates and joint ventures in other countries that use currencies which are different from the currency of the Company) are translated into the New Taiwan dollars using exchange rates prevailing at each balance sheet date. Income and expense items are translated at the average exchange rates for the period. The resulting currency translation differences are recognized in other comprehensive income and accumulated in equity attributed to the owners of the Company and non-controlling interests as appropriate.

On the disposal of the Group's entire interest in a foreign operation, or a disposal involving the loss of control over a subsidiary that includes a foreign operation, or a partial disposal of an interest in a joint arrangement or an associate that includes a foreign operation of which the retained interest becomes a financial asset, all of the exchange differences accumulated in equity in respect of that operation attributable to the owners of the Company are reclassified to profit or loss.

In relation to a partial disposal of a subsidiary that does not result in the Group losing control over the subsidiary, the proportionate share of accumulated exchange differences is re-attributed to the non-controlling interests of the subsidiary and is not recognized in profit or loss. For all other partial disposals, the proportionate share of the accumulated exchange differences recognized in other comprehensive income is reclassified to profit or loss.

Goodwill and fair value adjustments recognized on identifiable assets and liabilities of acquired foreign operation are treated as assets and liabilities of the foreign operation and translated at the rates of exchange prevailing at the end of each reporting period. Exchange differences are recognized in other comprehensive income.

g. Inventories and inventories related to real estate business

Inventories, including raw materials (materials received from customers for processing, mainly semiconductor wafers, are excluded from inventories as title and risk of loss remain with the customers), supplies, work in process, finished goods, and materials and supplies in transit are stated at the lower of cost or net realizable value. Inventory write-downs are made by item, except for those that may be appropriate to group items of similar or related inventories. Net realizable value is the estimated selling prices of inventories less all estimated costs of completion and estimated costs necessary to make the sale. Raw materials and supplies are recorded at moving average cost while work in process and finished goods are recorded at standard cost.

Inventories related to real estate business include land and buildings held for sale, land held for construction and construction in progress. Land held for development is recorded as land held for construction upon obtaining the title of ownership. Prior to the completion, the borrowing costs directly attributable to construction in progress are capitalized as part of the cost of the asset. Construction in progress is transferred to land and buildings held for sale upon completion. Land and buildings held for sale, construction in progress and land held for construction are stated at the lower of cost or net realizable value and related write-downs are made by item. The amounts received in advance for real estate properties are first recorded as advance receipts and then recognized as revenue when the construction is completed and the title and significant risk of the real estate properties are transferred to customers. Cost of sales of land and buildings held for sale are recognized based on the ratio of property sold to the total property developed.

h. Investments in associates and joint ventures

An associate is an entity over which the Group has significant influence and that is neither a subsidiary nor an interest in a joint venture. Joint venture is a joint arrangement whereby the Group and other parties that have joint control of the arrangement have rights to the net assets of the arrangement.

The Group applies the equity method to investments in an associate and joint venture.

Under the equity method, investments in an associate and a joint venture are initially recognized at cost and adjusted thereafter to recognize the Group’s share of the profit or loss and other comprehensive income of the associate and joint venture. The Group also recognizes the changes in the Group’s share of equity of associates and joint venture.

Any excess of the cost of acquisition over the Group’s share of the net fair value of the identifiable assets and liabilities of an associate or a joint venture at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment and is not amortized. Any excess of the Group’s share of the net fair value of the identifiable assets and liabilities over the cost of acquisition after reassessment is recognized immediately in profit or loss.

When the Group subscribes for additional new shares of an associate and joint venture at a percentage different from its existing ownership percentage, the resulting carrying amount of the investment differs from the amount of the Group's proportionate interest in the associate and joint venture. The Group records such a difference as an adjustment to investments with the corresponding amount charged or credited to capital surplus - changes in capital surplus from investments in associates and joint ventures accounted for using the equity method. If the Group's ownership interest is reduced due to its additional subscription of the new shares of the associate and joint venture, the proportionate amount of the gains or losses previously recognized in other comprehensive income in relation to that associate and joint venture is reclassified to profit or loss on the same basis as would be required had the investee directly disposed of the related assets or liabilities. When the adjustment should be debited to capital surplus, but the capital surplus recognized from investments accounted for using the equity method is insufficient, the shortage is debited to retained earnings.

When the Group's share of losses of an associate and a joint venture equals or exceeds its interest in that associate and joint venture (which includes any carrying amount of the investment accounted for using the equity method and long-term interests that, in substance, form part of the Group's net investment in the associate and joint venture), the Group discontinues recognizing its share of further losses. Additional losses and liabilities are recognized only to the extent that the Group has incurred legal obligations or constructive obligations, or made payments on behalf of that associate and joint venture.

The entire carrying amount of an investment (including goodwill) is tested for impairment as a single asset by comparing its recoverable amount with its carrying amount. Any impairment loss recognized is not allocated to any asset, including goodwill, that forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized to the extent that the recoverable amount of the investment subsequently increases.

The Group discontinues the use of the equity method from the date on which its investment ceases to be an associate and a joint venture. Any retained investment is measured at fair value at that date, and the fair value is regarded as the investment's fair value on initial recognition as a financial asset. The difference between the previous carrying amount of the associate and the joint venture attributable to the retained interest and its fair value is included in the determination of the gain or loss on disposal of the associate and the joint venture. The Group accounts for all amounts previously recognized in other comprehensive income in relation to that associate and joint venture on the same basis as would be required had that associate directly disposed of the related assets or liabilities. If an investment in an associate becomes an investment in a joint venture or an investment in a joint venture becomes an investment in an associate, the Group continues to apply the equity method and does not remeasure the retained interest.

When a group entity transacts with its associate and joint venture, profits and losses resulting from the transactions with the associate and joint venture are recognized in the Group' consolidated financial statements only to the extent that interests in the associate and the joint venture are not related to the Group.

i. Property, plant and equipment

Except for land which is stated at cost, property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment.

Properties in the course of construction are carried at cost, less any recognized impairment loss. Cost includes professional fees and borrowing costs eligible for capitalization. Such assets are depreciated and classified to the appropriate categories of property, plant and equipment when completed and ready for their intended use.

Freehold land is not depreciated.

Depreciation of property, plant and equipment is recognized using the straight-line method. Each significant part is depreciated separately. The estimated useful lives, residual values and depreciation method are reviewed at each balance sheet date, with the effect of any changes in estimate accounted for on a prospective basis.

On derecognition of an item of property, plant and equipment, the difference between the sales proceeds and the carrying amount of the asset is recognized in profit or loss.

j. Investment properties

Investment properties are properties held to earn rental and/or for capital appreciation. Investment properties include right-of-use assets and properties under construction that meet the definition of investment properties.

Freehold investment properties are initially measured at cost, including transaction costs. Subsequent to initial recognition, investment properties are measured at cost less accumulated depreciation and accumulated impairment loss.

Investment properties acquired through leases are initially measured at cost, which comprises the initial measurement of lease liabilities adjusted for lease payments made on or before the commencement date, plus initial direct costs incurred and an estimate of costs needed to restore the underlying assets, less any lease incentives received. These investment properties are subsequently measured at cost less accumulated depreciation and accumulated impairment loss and adjusted for any remeasurement of the lease liabilities.

Depreciation is recognized using the straight-line method.

Investment properties under construction are measured at cost less accumulated impairment loss. Cost includes professional fees and borrowing costs eligible for capitalization. Depreciation of these assets commences when the assets are ready for their intended use.

For a transfer of classification from investment properties to property, plant and equipment and to right-of-use assets, the deemed cost of the property for subsequent accounting is its carrying amount at the commencement of owner-occupation.

For a transfer of classification from investment properties to inventories, the deemed cost of an item of property for subsequent accounting is its carrying amount at the commencement of development with a view to future sale.

For a transfer of classification from property, plant and equipment and right-of-use assets to investment properties, the deemed cost of an item of property for subsequent accounting is its carrying amount at the end of owner-occupation.

For a transfer of classification from inventories to investment properties, the deemed cost of an item of property for subsequent accounting is its carrying amount at the inception of an operating lease.

On derecognition of an investment property, the difference between the net disposal proceeds and the carrying amount of the asset is included in profit or loss.

k. Goodwill

Goodwill arising from an acquisition of a business is carried at cost as established at the date of acquisition of the business less accumulated impairment loss.

For the purposes of impairment testing, goodwill is allocated to each of the Group’s cash-generating units or groups of cash-generating units (referred to as “cash-generating unit”) that is expected to benefit from the synergies of the combination.

A cash-generating unit to which goodwill has been allocated is tested for impairment annually, or more frequently when there is an indication that the unit may be impaired, by comparing its carrying amount, including the attributed goodwill, with its recoverable amount. However, if the goodwill allocated to a cash-generating unit was acquired in a business combination during the current annual period, that unit shall be tested for impairment before the end of the current annual period. If the recoverable amount of the cash-generating unit is less than its carrying amount, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then pro rata to the other assets of the unit based on the carrying amount of each asset in the unit. Any impairment loss is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

l. Other intangible assets

1) Separate acquisition

Other intangible assets with finite useful lives acquired separately are initially measured at cost and subsequently measured at cost less accumulated amortization and accumulated impairment loss. Other intangible assets are amortized using the straight-line method over their estimated useful lives. The estimated useful lives, residual values, and amortization methods are reviewed at each balance sheet date, with the effect of any changes in estimate being accounted for on a prospective basis.

2) Acquired through business combinations

Other intangible assets acquired in a business combination and recognized separately from goodwill are initially recognized at their fair value at the acquisition date which is regarded as their cost. Subsequent to initial recognition, they are measured on the same basis as intangible assets that are acquired separately.

3) Derecognition

On derecognition of an intangible asset, the difference between the net disposal proceeds and the carrying amount of the asset are recognized in profit or loss.

m. Impairment of property, plant and equipment, right-of-use asset and intangible assets other than goodwill

At each balance sheet date or whenever events or changes in circumstances indicate that the carrying value may not be recoverable, the Group reviews the carrying amounts of its property, plant and equipment, right-of-use asset and intangible assets, excluding goodwill, to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss. When it is not possible to estimate the recoverable amount of an individual asset, the Group estimates the recoverable amount of the cash-generating unit to which the asset belongs. Corporate assets are allocated to the individual cash-generating units on a reasonable and consistent basis of allocation. The recoverable amount is the higher of fair value less costs to sell and value in use. If the recoverable amount of an asset or cash-generating unit is estimated to be less than its carrying amount, the carrying amount of the asset or cash-generating unit is reduced to its recoverable amount, with the resulting impairment loss recognized in profit or loss.

When an impairment loss is subsequently reversed, the carrying amount of the asset or cash-generating unit is increased to the revised estimate of its recoverable amount, but only to the extent of the carrying amount that would have been determined had no impairment loss been recognized for the asset or cash-generating unit in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

n. Financial instruments

Financial assets and financial liabilities are recognized when a group entity becomes a party to the contractual provisions of the instruments.

Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at FVTPL) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognized immediately in profit or loss.

1) Financial assets

All regular way purchases or sales of financial assets are recognized and derecognized on a settlement date basis.

a) Measurement categories

Financial assets held by the Group are classified into the following categories: financial assets at FVTPL, financial assets at amortized cost and investments in debt instruments and equity instruments at FVTOCI.

i. Financial asset at FVTPL

Financial asset is classified as at FVTPL when the financial asset is mandatorily classified or it is designated as at FVTPL. The Group's financial assets mandatorily classified as at FVTPL include investments in equity instruments which are not designated as at FVTOCI and debt instruments that do not meet the amortized cost criteria or the FVTOCI criteria.

Financial assets at FVTPL are subsequently measured at fair value, and any dividends or interest earned on such financial assets are recognized in other income; any remeasurement gains or losses on such financial assets are recognized in other gains or losses.

Fair value is determined in the manner described in Note 34.

ii. Financial assets at amortized cost

Financial assets that meet the following conditions are subsequently measured at amortized cost:

i) The financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows; and

ii) The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Subsequent to initial recognition, financial assets at amortized cost, including cash and cash equivalents, trade receivables at amortized cost, other receivables and other financial assets, are measured at amortized cost, which equals to gross carrying amount determined using the effective interest method less any impairment loss. Exchange differences are recognized in profit or loss.

Interest income is calculated by applying the effective interest rate to the gross carrying amount of a financial asset, except for:

i) Purchased or originated credit-impaired financial assets, for which interest income is calculated by applying the credit-adjusted effective interest rate to the amortized cost of the financial asset; and

ii) Financial assets that are not credit-impaired on purchase or origination but have subsequently become credit-impaired, for which interest income is calculated by applying the effective interest rate to the amortized cost of such financial assets in subsequent reporting periods.

A financial asset is credit impaired when one or more of the following events have occurred:

i) Significant financial difficulty of the issuer or the borrower;

ii) Breach of contract, such as a default;

iii) It is becoming probable that the borrower will enter bankruptcy or undergo a financial reorganization; or

iv) The disappearance of an active market for that financial asset because of financial difficulties.

Cash equivalents include time deposits with original maturities within 3 months from the date of acquisition, which are highly liquid, readily convertible to a known amount of cash and are subject to an insignificant risk of changes in value. These cash equivalents are held for the purpose of meeting short-term cash commitments.

iii. Investments in debt instruments at FVTOCI

For the Group's debt instruments that meet the following conditions are subsequently measured at FVTOCI:

i) the debt instrument is held within a business model whose objective is achieved by both the collecting of contractual cash flows and the selling of the financial assets; and

ii) the contractual terms of the debt instrument give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Investments in debt instruments at FVTOCI are subsequently measured at fair value. Changes in the carrying amounts of these debt instruments relating to changes in foreign currency exchange rates, interest income calculated using the effective interest method and impairment losses or reversals are recognized in profit or loss. Other changes in the carrying amount of these debt instruments are recognized in other comprehensive income and will be reclassified to profit or loss when the investment is disposed of.

iv. Investments in equity instruments at FVTOCI

On initial recognition, the Group make an irrevocable election to designate investments in equity instruments as at FVTOCI. Designation at FVTOCI is not permitted if the equity investment is held for trading or if it is contingent consideration recognized by an acquirer in a business combination.

Investments in equity instruments at FVTOCI are subsequently measured at fair value with gains and losses arising from changes in fair value recognized in other comprehensive income and accumulated in other equity. The cumulative gain or loss will not be reclassified to profit or loss on disposal of the equity investments, instead, they will be transferred to retained earnings.

Dividends on these investments in equity instruments are recognized in profit or loss when the Group's right to receive the dividends is established, unless the dividends clearly represent a recovery of part of the cost of the investment.

b) Impairment of financial assets and contract assets

At each balance sheet date, the Group recognizes a loss allowance for expected credit losses on financial assets at amortized cost (including trade receivables and contract assets) and investments in debt instruments that are measured at FVTOCI as well as contract assets.

The Group always recognizes lifetime Expected Credit Loss ("ECL") for trade receivables and contract assets. For all other financial instruments, the Group recognizes lifetime ECL when there has been a significant increase in credit risk since initial recognition. If, on the other hand, the credit risk on the financial instrument has not increased significantly since initial recognition, the Group measures the loss allowance for that financial instrument at an amount equal to 12-month ECL.

Expected credit losses reflect the weighted average of credit losses with the respective risks of a default occurring as the weights. Lifetime ECL represents the expected credit losses that will result from all possible default events over the expected life of a financial instrument. In contrast, 12-month ECL represents the portion of lifetime ECL that is expected to result from default events on a financial instrument that are possible within 12 months after the reporting date.

The Group recognizes an impairment gain or loss in profit or loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account, except for investments in debt instruments that are measured at FVTOCI, for which the loss allowance is recognized in other comprehensive income and does not reduce the carrying amount of the financial asset.

c) Derecognition of financial assets

The Group derecognizes a financial asset only when the contractual rights to the cash flows from the asset expire or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity.

On derecognition of a financial asset at amortized cost in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable is recognized in profit or loss. On derecognition of an investment in a debt instrument at FVTOCI, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss which had been recognized in other comprehensive income is recognized in profit or loss. However, on derecognition of an investment in an equity instrument at FVTOCI, the difference between the asset's carrying amount and the sum of the consideration received and receivable is recognized in profit or loss, and the cumulative gain or loss which had been recognized in other comprehensive income is transferred directly to retained earnings, without recycling through profit or loss.

2) Equity instruments

Debt and equity instruments issued by a group entity are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument.

Equity instruments issued by a group entity are recognized at the proceeds received, net of direct issue costs.

Repurchase of the Company's own equity instruments is recognized in and deducted directly from equity. No gain or loss is recognized in profit or loss on the purchase, sale, issue or cancellation of the Company's own equity instruments.

3) Financial liabilities

a) Subsequent measurement

Except the following situations, all financial liabilities are measured at amortized cost using the effective interest method:

Financial liabilities are classified as at FVTPL when such financial liabilities are held for trading.

Financial liabilities held for trading are stated at fair value, and any gains or losses on such financial liabilities are recognized in other gains or losses.

b) Derecognition of financial liabilities

The difference between the carrying amount of a financial liability derecognized and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognized in profit or loss.

4) Derivative financial instruments

The Group enters into a variety of derivative financial instruments to manage its exposure to interest rate and foreign exchange rate risks, including forward exchange contracts and swap contracts.

Derivatives are initially recognized at fair value at the date on which the derivative contracts are entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately unless the derivative is designated and effective as a hedging instrument; in which event, the timing of the recognition in profit or loss depends on the nature of the hedging relationship. When the fair value of a derivative financial instrument is positive, the derivative is recognized as a financial asset; when the fair value of a derivative financial instrument is negative, the derivative is recognized as a financial liability.

Derivatives embedded in hybrid contracts that contain financial asset hosts that is within the scope of IFRS 9 are not separated; instead, the classification is determined in accordance with the entire hybrid contract. Derivatives embedded in non-derivative host contracts that are not financial assets that is within the scope of IFRS 9 (e.g. financial liabilities) are treated as separate derivatives when they meet the definition of a derivative, their risks and characteristics are not closely related to those of the host contracts and the host contracts are not measured at FVTPL.

o. Hedge accounting

The Group designates certain hedging instruments, which include derivatives, embedded derivatives and non-derivatives in respect of foreign currency risk, as either fair value hedges or cash flow hedges or hedges of net investment in foreign operations.

1) Fair value hedges

Gains or losses on hedging instruments that are designated and qualify as fair value hedges are recognized in profit or loss immediately, together with any changes in the fair value of the hedged asset or liability that are attributable to the hedged risk. The change in the fair value of the hedging instrument and the change in the hedged item attributable to the hedged risk are recognized in profit or loss in the line item relating to the hedged item.

The Group discontinues hedge accounting only when the hedging relationship ceases to meet the qualifying criteria; for instance, when the hedging instrument expires or is sold, terminated or exercised.

2) Cash flow hedges

The effective portion of gains or losses on hedging instruments that are designated and qualify as cash flow hedges is recognized in other comprehensive income. The gains or losses relating to the ineffective portion are recognized immediately in profit or loss.

The associated gains or losses that were recognized in other comprehensive income are reclassified from equity to profit or loss as a reclassification adjustment in the line item relating to the hedged item in the same period when the hedged item affects profit or loss. If a hedge of a forecasted transaction subsequently results in the recognition of a non-financial asset or a non-financial liability, the associated gains and losses that were recognized in other comprehensive income are removed from equity and included in the initial cost of the non-financial asset or non-financial liability.

The Group discontinues hedge accounting only when the hedging relationship cease to meet the qualifying criteria; for instance, when the hedging instrument expires or is sold, terminated, or exercised. The cumulative gain or loss on the hedging instrument that has been previously recognized in other comprehensive income from the period when the hedge was effective remains separately in equity until the forecast transaction occurs. When a forecast transaction is no longer expected to occur, the gain or loss accumulated in equity is recognized immediately in profit or loss.

3) Hedges of net investments in foreign operations

Hedges of net investments in foreign operations are accounted for similarly to cash flow hedges. Any gains or losses on the hedging instrument relating to the effective portion of the hedge are recognized in other comprehensive income and accumulated under the heading of foreign currency translation reserve. The gains or losses relating to the ineffective portion are recognized immediately in profit or loss.

The gains and losses on the hedging instrument relating to the effective portion of the hedge, which were accumulated in the foreign currency translation reserve, are reclassified to profit or loss on the disposal or partial disposal of a foreign operation.

p. Revenue recognition

The Group identifies the contracts with customers, allocates transaction prices to performance obligations and, when performance obligations are satisfied, recognizes revenues at fixed amounts as agreed in the contracts with taking estimated volume discounts into consideration.

For contracts where the period between the date on which the Group transfers a promised good or service to a customer and the date on which the customer pays for that good or service is one year or less, the Group does not adjust the promised amount of consideration for the effects of a significant financing component.

The Group's duration of contracts with customers is expected to be one year or less, and the consideration from contracts with customers is included in transaction price and, therefore, can apply the practical expedient that not to disclose the performance obligations including (i) the aggregate amount of the transaction price allocated to the performance obligations that are not fully satisfied or have partially completed at the end of the reporting period, and (ii) the expected timing for recognition of revenue.

The Group's operating revenues include revenues from sale of goods and services as well as sale and leasing of real estate properties.

When customers control goods while they are manufactured in progress, the Group measures the progress on the basis of costs incurred relative to the total expected costs as there is a direct relationship between the costs incurred and the progress of satisfying the performance obligations. Revenue and contract assets are recognized during manufacture and contract assets are reclassified to trade receivables when the manufacture is completed or when the goods are shipped upon customer's request.

The Group recognizes revenues and trade receivables when the goods are shipped or when the goods are delivered to the customer's specific location because it is the time when the customer has full discretion over the manner of distribution and price to sell the goods, has the primary responsibility for sales to future customers and bears the risks of obsolescence.

Revenues from sale of real estate properties are recognized when customers purchase real estate properties and complete the transfer procedures. Revenues from leasing real estate properties are recognized during leasing periods on the straight-line basis.

q. Leases

At the inception of a contract, the Group assesses whether the contract is, or contains, a lease.

For a contract that contains a lease component and non-lease components, the Group elects to account for the lease and non-lease components as a single lease component.

1) The Group as lessor

Leases are classified as finance leases whenever the terms of a lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases.

When the Group subleases a right-of-use asset, the sublease is classified by reference to the right-of-use asset arising from the head lease, not with reference to the underlying asset. However, if the head lease is a short-term lease that the Group, as a lessee, has accounted for applying recognition exemption, the sublease is classified as an operating lease.

Lease payments (less any lease incentives payable) from operating leases are recognized as income on a straight-line basis over the terms of the relevant leases. Initial direct costs incurred in obtaining operating leases are added to the carrying amounts of the underlying assets and recognized as expenses on a straight-line basis over the lease terms.

2) The Group as lessee

The Group recognizes right-of-use assets and lease liabilities for all leases at the commencement date of a lease, except for short-term leases and low-value asset leases accounted for applying a recognition exemption where lease payments are recognized as expenses on a straight-line basis over the lease terms.

Right-of-use assets are initially measured at cost, which comprises the initial measurement of lease liabilities adjusted for lease payments made on or before the commencement date, plus any initial direct costs incurred and an estimate of costs needed to restore the underlying assets, and less any lease incentives received. Right-of-use assets are subsequently measured at cost less accumulated depreciation and impairment losses and adjusted for any remeasurement of the lease liabilities. Right-of-use assets are presented on a separate line in the consolidated balance sheets. With respect to the recognition and measurement of right-of-use assets that meet the definition of investment properties, refer to the aforementioned accounting policies for investment properties.

Right-of-use assets are depreciated using the straight-line method from the commencement dates to the earlier of the end of the useful lives of the right-of-use assets or the end of the lease terms. However, if leases transfer ownership of the underlying assets to the Group by the end of the lease terms or if the costs of right-of-use assets reflect that the Group will exercise a purchase option, the Group depreciates the right-of-use assets from the commencement dates to the end of the useful lives of the underlying assets.

Lease liabilities are initially measured at the present value of the lease payments, which comprise fixed payments, in-substance fixed payments, variable lease payments which depend on an index or a rate, residual value guarantees, the exercise price of a purchase option if the Group is reasonably certain to exercise that option, and payments of penalties for terminating a lease if the lease term reflects such termination, less any lease incentives receivable. The lease payments are discounted using the interest rate implicit in a lease, if that rate can be readily determined. If that rate cannot be readily determined, the Group uses the lessee’s incremental borrowing rate.

Subsequently, lease liabilities are measured at amortized cost using the effective interest method, with interest expense recognized over the lease terms. When there is a change in a lease term, a change in the amounts expected to be payable under a residual value guarantee, a change in the assessment of an option to purchase an underlying asset, or a change in future lease payments resulting from a change in an index or a rate used to determine those payments, the Group remeasures the lease liabilities with a corresponding adjustment to the right-of-use assets. However, if the carrying amount of the right-of-use assets is reduced to zero, any remaining amount of the remeasurement is recognized in profit or loss. For a lease modification that is not accounted for as a separate lease, the Group accounts for the remeasurement of the lease liability by (a) decreasing the carrying amount of the right-of-use asset of lease modifications that decreased the scope of the lease, and recognizing in profit or loss any gain or loss on the partial or full termination of the lease; (b) making a corresponding adjustment to the right-of-use asset of all other lease modifications. Lease liabilities are presented on a separate line in the consolidated balance sheets.

The Group negotiates with the lessor for rent concessions as a direct consequence of the COVID-19 to change the lease payments originally due by June 30, 2021, that results in the revised consideration for the lease substantially less than the consideration for the lease immediately preceding the change. There is no substantive change to other terms and conditions. The Group elects to apply the practical expedient to all of these rent concessions, and therefore, does not assess whether the rent concessions are lease modifications. Instead, the Group recognizes the reduction in lease payment in profit or loss as a deduction of expenses of variable lease payments, in the period in which the events or conditions that trigger the concession occurs, and makes a corresponding adjustment to the lease liability.

Variable lease payments that do not depend on an index or a rate are recognized as expenses in the periods in which they are incurred.

r. Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale.

Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization.

Other than stated above, all other borrowing costs are recognized in profit or loss in the period in which they are incurred.

s. Government grants

Government grants related to income are not recognized until there is reasonable assurance that the Group will comply with the conditions attaching to them and that the grants will be received.

Government grants are recognized in other income on a systematic basis over the periods in which the Group recognizes as expenses the related costs for which the grants are intended to compensate. Specifically, government grants whose primary condition is that the Group should purchase, construct or otherwise acquire non-current assets are recognized as deferred revenue in the consolidated financial statements and transferred to profit or loss on a systematic and rational basis over the useful lives of the related assets.

Government grants that are receivable as compensation for expenses or losses already incurred or for the purpose of giving immediate financial support to the Group with no future related costs are recognized in profit or loss in the period in which they become receivable.

The loan with interest subsidy provided by government, bearing a below-market rate of interest is treated as a government grant measured as the difference between the proceeds received and the fair value of the loan based on prevailing market interest rates.

t. Employee benefits

1) Short-term employee benefits

Liabilities recognized in respect of short-term employee benefits are measured at the undiscounted amount of the benefits expected to be paid in exchange for the related services.

2) Retirement benefits

Payments to defined contribution retirement benefit plans are recognized as expenses when employees have rendered services entitling them to the contributions.

Defined benefit costs (including service cost, net interest and remeasurement) under the defined benefit retirement benefit plans are determined using the projected unit credit method. Service cost (including current service cost and past service cost) and net interest on the net defined benefit liability (asset) are recognized as employee benefits expense in the period they occur. Remeasurement, comprising actuarial gains and losses and the return on plan assets (excluding interest), is recognized in other comprehensive income in the period in which they occur. Remeasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss.

Net defined benefit liability (asset) represents the actual deficit (surplus) in the Group's defined benefit plan. Any surplus resulting from this calculation is limited to the present value of any refunds from the plans or reductions in future contributions to the plans.

u. Share-based payment arrangements

The fair value at the grant date of the employee share options and restricted shares for employees is expensed on a straight-line basis over the vesting period, based on the Group's best estimate of the number of options or shares that are expected to ultimately vest, with a corresponding increase in capital surplus - employee share options and non-controlling interests. It is recognized as an expense in full at the grant date if vesting immediately. The grant date of issued ordinary shares for cash which are reserved for employees is the date on which the number of shares that the employees purchase is confirmed.
At each balance sheet date, the Group reviews its estimate of the number of employee share options and

restricted shares for employees expected to vest. The impact of the revision of the original estimates is recognized in profit or loss such that the cumulative expense reflects the revised estimate, with a corresponding adjustment to the capital surplus - employee share options and non-controlling interests.

v. Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax.

1) Current tax

Income tax payable (recoverable) is based on taxable profit (loss) for the year determined according to the applicable tax laws of each tax jurisdiction.

According to the Income Tax Law of the R.O.C., an additional tax of unappropriated earnings is provided for in the year the shareholders approve to retain earnings.

Adjustments of prior years' tax liabilities are added to or deducted from the current year's tax provision.

2) Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the consolidated financial statements and the corresponding tax bases used in the computation of taxable profit. If a temporary difference arises from the initial recognition (other than in a business combination) of assets and liabilities in a transaction that affects neither the taxable profit nor the accounting profit, the resulting deferred tax asset or liability is not recognized. In addition, a deferred tax liability is not recognized on taxable temporary differences arising from the initial recognition of goodwill.

Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences, unused loss carryforwards and unused tax credits for purchases of machinery and equipment to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates, except where the Group is able to control the reversal of the temporary differences and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary difference associated with such investments and interests are only recognized to the extent that it is probable that there will be sufficient taxable profits against which to utilize the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at each balance sheet date and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the assets to be recovered. A previously unrecognized deferred tax asset is also reviewed at each balance sheet date and recognized to the extent that it has become probable that future taxable profit will allow the deferred tax asset to be recovered.

Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the period in which the liabilities are settled or assets are realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the balance sheet date. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Group expects, at the balance sheet date, to recover or settle the carrying amount of its assets and liabilities.

3) Current and deferred tax for the year

Current and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case, the current and deferred tax are also recognized in other comprehensive income or directly in equity, respectively.

Where current tax or deferred tax arises from the initial accounting for a business combination, the tax effect is included in the accounting for the business combination.

w. U.S. Dollar Amounts

A translation of the consolidated financial statements into U.S. dollars is included solely for the convenience of the readers, and has been translated from New Taiwan dollar (NT$) at the exchange rate as set forth in the statistical release by the U.S. Federal Reserve Board of the United States, which was NT$28.08 to US$1.00 as of December 31, 2020. The translation should not be construed as a representation that the NT$ amounts have been, could have been, or could in the future be, converted into U.S. dollars at this or any other rate of exchange.

5. CRITICAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY

In the application of the Group's accounting policies, management is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and underlying assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Impairment of goodwill

Determining whether goodwill is impaired requires an estimation of the value in use of the cash-generating units to which goodwill has been allocated. The calculation of the value in use requires management to estimate the future cash flows expected to be generated from the cash-generating units and a suitable discount rate in order to calculate the present value. Where the actual future cash flows are less than expected, a material impairment loss may arise.

6. CASH AND CASH EQUIVALENTS

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Cash on hand	$ 6,567	$ 6,073	$ 216
Checking accounts and demand deposits	44,565,936	48,734,866	1,735,572
Cash equivalents (time deposits with original maturity of less than three months)	15,558,372	2,797,132	99,613
	$ 60,130,875	$ 51,538,071	$ 1,835,401

7. FINANCIAL INSTRUMENTS AT FAIR VALUE THROUGH PROFIT OR LOSS

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Financial assets mandatorily classified as at FVTPL			
Derivative instruments (non-designated hedges)			
Forward exchange contracts	$ 104,308	$ 122,511	$ 4,363
Swap contracts	56,561	99,312	3,537
Call option (Note 29)	24,556	-	-
Non-derivative financial assets			
Quoted ordinary shares	$ 3,460,123	$ 4,064,438	$ 144,745
Private-placement funds	603,718	1,124,754	40,055
Unquoted preferred shares	377,440	385,440	13,726
Open-end mutual funds	662,290	339,338	12,085
	5,288,996	6,135,793	218,511
Current	4,127,566	4,342,605	154,651
Non-current	$ 1,161,430	$ 1,793,188	$ 63,860
Financial liabilities held for trading - current			
Derivative instruments (non-designated hedging)			
Swap contracts	$ 862,581	$ 1,448,972	$ 51,602
Target redemption forward contracts	-	79,216	2,821
Forward exchange contracts	110,990	9,020	321
	$ 973,571	$ 1,537,208	$ 54,744

At each balance sheet date, outstanding swap contracts not accounted for hedge accounting were as follows:

Currency	Maturity Period	Notional Amount (In Thousands)
December 31, 2019		
Sell NT$/Buy US$	2020.01-2020.12	NT$50,241,799/US$1,660,000
Sell US$/Buy RMB	2020.02	US$49,666/RMB349,800
Sell US$/Buy JPY	2020.02-2020.03	US$45,878/JPY5,000,000
Sell US$/Buy KRW	2020.01	US$28,000/KRW32,454,800
Sell US$/Buy MYR	2020.01	US$11,000/MYR45,507
Sell US$/Buy NT$	2020.01	US$189,960/NT$5,719,478
December 31, 2020		
Sell NT$/Buy US$	2021.01-2021.12	NT$51,140,082/US$1,755,000
Sell US$/Buy RMB	2021.01-2021.02	US$59,793/RMB395,742
Sell US$/Buy HKD	2021.02	US$13,804/HKD107,000
Sell US$/Buy JPY	2021.01	US$41,630/JPY4,300,000
Sell US$/Buy KRW	2021.01	US$30,000/KRW33,066,000
Sell US$/Buy NT$	2021.01-2021.02	US$675,240/NT$19,073,846

At each balance sheet date, outstanding forward exchange contracts not accounted for hedge accounting were as follow:

Currency	Maturity Period	Notional Amount (In Thousands)
December 31, 2019		
Sell RMB/Buy US$	2020.01-2020.02	RMB2,224,491/US$316,896
Sell HKD/Buy US$	2020.01	HKD1,705,281/US$218,297
Sell NT$/Buy US$	2020.01	NT$2,275,860/US$75,000
Sell US$/Buy RMB	2020.01-2020.03	US$109,000/RMB767,277
Sell US$/Buy JPY	2020.01-2020.04	US$87,398/JPY9,509,491
Sell US$/Buy MYR	2020.01-2020.05	US$26,000/MYR108,330
Sell US$/Buy NT$	2020.01-2020.02	US$170,000/NT$5,142,441
Sell US$/Buy SGD	2020.01-2020.02	US$8,600/SGD11,691
December 31, 2020		
Sell RMB/Buy US$	2021.01	RMB756,946/US$116,093
Sell HKD/Buy US$	2021.01	HKD4,100/US$529
Sell NT$/Buy US$	2021.01-2021.02	NT$2,667,230/US$95,000
Sell US$/Buy RMB	2021.01-2021.04	US$363,000/RMB2,385,500
Sell US$/Buy EUR	2021.01	US$1,607/EUR1,320
Sell US$/Buy JPY	2021.01-2021.04	US$100,076/JPY10,405,845
Sell US$/Buy KRW	2021.01	US$16,000/KRW17,575,300
Sell US$/Buy MYR	2021.01-2021.04	US$24,000/MYR98,737
Sell US$/Buy NT$	2021.01-2021.02	US$27,470/NT$776,867
Sell US$/Buy SGD	2021.01-2021.04	US$18,500/SGD24,868

As of December 31, 2020, outstanding target redemption forward contracts not accounted for hedge accounting were as follows:

Currency	Maturity Period	Notional Amount (In Thousands)
Sell EUR/Buy US$	2022.04-2022.06	EUR23,279/US$27,475

The target redeemable forward contracts held by subsidiaries are settled weekly. If the market exchange rate is lower than the execution rate at the time of settlement, the contract will be settled on the nominal amount, whereas if the market exchange rate is higher than the execution rate, the contract will be settled on a leveraged nominal amount (twice the nominal amount). The contracts last until all the nominal amount of US$ position is fully settled. However, when the accumulated excess of the execution rates over the market exchange rates reach the agreed threshold after the weekly settlement, the contracts will be automatic early terminated.

8. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME (FVTOCI)

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Investments in equity instruments at FVTOCI	$ 755,903	$ 728,398	$ 25,940
Investments in debt instruments at FVTOCI	1,014,872	1,012,736	36,066
	$ 1,770,775	$ 1,741,134	$ 62,006

a. Investments in equity instruments at FVTOCI

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Unquoted ordinary shares	$ 565,028	$ 567,377	$ 20,206
Unquoted preferred shares	158,718	151,329	5,389
Limited partnership	32,157	9,692	345
	$ 755,903	$ 728,398	$ 25,940

b. Investments in debt instruments at FVTOCI

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Unsecured subordinate corporate bonds	$ 1,014,872	$ 1,012,736	$ 36,066

The Group purchased 1,000 units of perpetual unsecured subordinate corporate bonds in the amount of NT$1,000,000 thousand. The corporate bonds are in denomination of NT$1,000 thousand (US$36 thousand) with annual interest rate at 3.5% as well as effective interest rate at 3.2% both as of December 31, 2019 and 2020.

9. CREDIT RISK MANAGEMENT FOR INVESTMENTS IN DEBT INSTRUMENTS

The Group's investment in unsecured subordinate corporate bonds is rated the equivalent of investment grade or higher and has low credit risk for impairment assessment.

There was no significant increase in credit risk of such debt instrument since initial recognition leading to changes in interest rates and terms, and there was also no significant change in bond issuer's operation affecting the ability performing debt obligation. Therefore, no expected credit losses existed. The Group reviews changes in bond yields and other public information periodically and makes an assessment whether there has been a significant increase in lifetime Expected Credit Loss ("ECL") since initial recognition.

10. TRADE RECEIVABLES, NET

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
At amortized cost			
Gross carrying amount	$ 77,055,280	$ 91,304,934	$ 3,251,600
Less: Allowance for impairment loss	136,497	97,358	3,467
	76,918,783	91,207,576	3,248,133
At FVTOCI	2,029,690	626,413	22,308
	$ 78,948,473	$ 91,833,989	$ 3,270,441

a. Trade receivables

1) At amortized cost

The Group's average credit terms granted to the customers were 30 to 90 days. The Group evaluates the risk and probability of credit loss of trade receivables by reference to the Group's past experiences, financial condition of each customer, impact of COVID-19, as well as competitive advantage and future development of the industry in which the customer operates. The Group then reviews the recoverable amount of each individual trade receivable at each balance sheet date to ensure that adequate allowance is made for possible irrecoverable amounts. In this regard, management believes the Group's credit risk was significantly reduced.

The Group measures the loss allowance for trade receivables at an amount equal to lifetime ECLs. The expected credit losses on trade receivables are estimated using a provision matrix by reference to past default experience of the debtor and an analysis of the debtor's current financial position, adjusted for general economic conditions of the industry in which the debtors operate and an assessment of both the current as well as the forecast direction of economic conditions at each balance sheet date. As the Group's historical credit loss experience shows significantly different loss patterns for different customer segments, the provision matrix for expected credit loss allowance based on trade receivables due status is further distinguished according to the Group's different customer base.

The Group writes off a trade receivable when there is information indicating that the debtor is in severe financial difficulty and there is no realistic prospect of recovery. For trade receivables that have been written off, the Group continues to engage in enforcement activity to attempt to recover the receivables due. Where recoveries are made, these are recognized in profit or loss.

The following table details the loss allowance of trade receivables based on the Group's provision matrix.

December 31, 2019

	Not Past Due	Overdue 1 to 30 days	Overdue 31 to 90 Days	Overdue Over 91 Days	Individually Impaired	Total
	NT$	NT$	NT$	NT$	NT$	NT$
Expected credit loss rate	0%	0%-10%	0%-70%	1%-100%	50%-100%	
Gross carrying amount	$ 70,042,018	$ 6,111,309	$ 695,384	$ 153,458	$ 53,111	$ 77,055,280
Loss allowance (Lifetime ECLs)	(12,379)	(841)	(26,587)	(53,629)	(43,061)	(136,497)
	$ 70,029,639	$ 6,110,468	$ 668,797	$ 99,829	$ 10,050	$ 76,918,783

December 31, 2020

	Not Past Due	Overdue 1 to 30 days	Overdue 31 to 90 Days	Overdue Over 91 Days	Individually Impaired	Total
	NT$	NT$	NT$	NT$	NT$	NT$
Expected credit loss rate	0%	0%-10%	0%-70%	1%-100%	50%-100%	
Gross carrying amount	$ 86,820,792	$ 3,823,249	$ 557,487	$ 92,873	$ 10,533	$ 91,304,934
Loss allowance (Lifetime ECLs)	(18,911)	(2,053)	(20,629)	(45,232)	(10,533)	(97,358)
	$ 86,801,881	$ 3,821,196	$ 536,858	$ 47,641	$ -	$ 91,207,576

	Not Past Due	Overdue 1 to 30 days	Overdue 31 to 90 Days	Overdue Over 91 Days	Individually Impaired	Total
	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)
Expected credit loss rate	0%	0%-10%	0%-70%	1%-100%	50%-100%	
Gross carrying amount	$ 3,091,908	$ 136,156	$ 19,854	$ 3,307	$ 375	$ 3,251,600
Loss allowance (Lifetime ECLs)	(673)	(73)	(735)	(1,611)	(375)	(3,467)
	$ 3,091,235	$ 136,083	$ 19,119	$ 1,696	$ -	$ 3,248,133

The movements of the loss allowance of trade receivables for the years ended were as follows:

	December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Balance at January 1	$ 64,901	$ 155,389	$ 136,497	$ 4,861
Net remeasurement of loss allowance	150,128	(38,277)	(55,742)	(1,985)
Reclassification	-	(5,877)	(6,970)	(248)
Acquisition through business combinations	3,482	25,553	32,460	1,156
Amounts written off	(60,109)	-	(3,944)	(141)
Effects of foreign currency exchange differences	(3,013)	(291)	(4,943)	(176)
Balance at December 31	$ 155,389	$ 136,497	$ 97,358	$ 3,467

2) At FVTOCI

For the trade receivables due from certain customers, the Group decides whether or not to factor these trade receivables to banks without recourse based on the Group’s demand of working capital. These trade receivables are classified as at FVTOCI because they are held within a business model whose objective is achieved by both the collecting of contractual cash flows and the selling of financial assets.

The following table details the loss allowance of trade receivables at FVTOCI based on the Group’s provision matrix.

December 31, 2019

	Not Past Due	Overdue 1 to 30 days	Overdue 31 to 90 Days	Overdue Over 91 Days	Individually Impaired	Total
	NT$	NT$	NT$	NT$	NT$	NT$
Expected credit loss rate	0%	-	0%	1%	-	
Gross carrying amount	$ 2,029,324	$ -	$ 207	$ 160	$ -	$ 2,029,691
Loss allowance (Lifetime ECLs)	-	-	-	(1)	-	(1)
	$ 2,029,324	$ -	$ 207	$ 159	$ -	$ 2,029,690

December 31, 2020

	Not Past Due	Overdue 1 to 30 days	Overdue 31 to 90 Days	Overdue Over 91 Days	Individually Impaired	Total
	NT$	NT$	NT$	NT$	NT$	NT$
Expected credit loss rate	0%	0%	0%	-	-	
Gross carrying amount	$ 613,968	$ 9,874	$ 2,571	$ -	$ -	$ 626,413
Loss allowance (Lifetime ECLs)	-	-	-	-	-	-
	$ 613,968	$ 9,874	$ 2,571	$ -	$ -	$ 626,413

	Not Past Due	Overdue 1 to 30 days	Overdue 31 to 90 Days	Overdue Over 91 Days	Individually Impaired	Total
	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)
Expected credit loss rate	0%	0%	0%	-	-	
Gross carrying amount	$ 21,864	$ 352	$ 92	$ -	$ -	$ 22,308
Loss allowance (Lifetime ECLs)	-	-	-	-	-	-
	$ 21,864	$ 352	$ 92	$ -	$ -	$ 22,308

3) At FVTPL

Some of the Group's subsidiaries sell all of their trade receivables to banks without recourse. The sale will result in the derecognition of these trade receivables because the Group's subsidiaries will transfer substantially all risks and rewards to banks. These trade receivables are measured at FVTPL because the objective of the subsidiary' business model is neither the collecting of contractual cash flows nor the collecting of contractual cash flows and the selling of financial assets. As of December 31, 2020, the trade receivables at FVTPL were all factored to banks without recourse.

b. Transfers of financial assets

The followings were the Group's outstanding trade receivables transferred but not yet due were as follows:

Counterparties	Receivables Factoring Proceeds		Reclassified to Other Receivables		Advances Received-Unused		Advances Received-Used		Interest Rates on Advances Received
December 31, 2019									
First Commercial Bank	NT$	7,567	NT$	-	NT$	-	NT$	7,567	2.2%
December 31, 2020									
BNP Paribas	EUR	16,691	EUR	15,315	EUR	14,481	EUR	1,376	0.80%
HSBC	EUR	6,773	EUR	6,456	EUR	5,779	EUR	317	1.45%
Citibank Taiwan Ltd.	US$	94,471	US$	-	US$	-	US$	94,471	0.84%-0.95%
Standard Chartered Bank	US$	53,800	US$	-	US$	-	US$	53,800	0.91%
First Commercial Bank	NT$	6,879	NT$	-	NT$	-	NT$	6,879	1.95%

Pursuant to the factoring agreements, losses from commercial disputes (such as sales returns and discounts) are borne by the Group, while losses from credit risk are borne by banks. As of December 31, 2020, the Group issued promissory notes with aggregate amounts of US$2,000 thousand to Citibank Taiwan Ltd. to compensate losses from commercial disputes. In 2020, the Group did not have material commercial dispute in the past and expected to have no material commercial dispute in the foreseeable future.

11. INVENTORIES

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Finished goods	$ 7,174,716	$ 8,788,460	$ 312,979
Work in process	2,952,182	6,816,602	242,757
Raw materials	20,996,346	29,428,008	1,048,006
Supplies	2,229,576	2,691,779	95,861
Raw materials and supplies in transit	530,930	791,610	28,191
	$ 33,883,750	$ 48,516,459	$ 1,727,794

The cost of inventories recognized as operating costs for the years ended December 31, 2018, 2019 and 2020 were NT$309,020,850 thousand, NT$347,877,603 thousand and NT$398,068,260 thousand (US$14,176,220 thousand), respectively, which included write-downs of inventories at NT$980,927 thousand, NT$452,134 thousand and NT$1,493,793 thousand (US$53,198 thousand), respectively.

12. INVENTORIES RELATED TO REAL ESTATE BUSINESS

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Land and buildings held for sale	$ 9,983	$ 625,791	$ 22,286
Construction in progress	9,619,217	11,058,328	393,815
Land held for construction	1,787,526	1,787,526	63,659
	$ 11,416,726	$ 13,471,645	$ 479,760

Construction in progress is mainly located on Hutai Road in Shanghai, China and Lidu Road in Kun Shan, China. The capitalized borrowing costs for the years ended December 31, 2018, 2019 and 2020 are disclosed in Note 25.

As of December 31, 2019 and 2020, inventories related to real estate business of NT$11,416,726 thousand and NT$13,471,645 thousand (US$479,759 thousand), respectively, are expected to be recovered longer than twelve months.

Refer to Note 36 for the carrying amount of inventories related to real estate business that had been pledged by the Group to secure bank borrowings.

13. OTHER FINANCIAL ASSETS

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Guarantee deposits	$ 661,667	$ 516,505	$ 18,394
Pledged time deposits (Note 36)	620,817	367,550	13,089
Time deposits with original maturity of over three months	25,885	35,988	1,282

(Continued)

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Others (Note 36)	$ 16,958	$ 161,957	$ 5,768
	1,325,327	1,082,000	38,533
Current	765,834	551,655	19,646
Non-current	$ 559,493	$ 530,345	$ 18,887

(Concluded)

14. INVESTMENTS ACCOUNTED FOR USING THE EQUITY METHOD

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Investments in associates	$ 11,805,505	$ 12,335,239	$ 439,289
Investments in joint ventures	279,702	471,434	16,789
	$ 12,085,207	$ 12,806,673	$ 456,078

a. Investments in associates

1) Investments in associates accounted for using the equity method that was not individually material consisted of the following:

			Carrying Amount as of December 31		
		Operating	2019	2020	
Name of Associate	Main Business	Location	NT$	NT$	US$ (Note 4)
Yann Yuan Investment Co., Ltd. (“Yann Yuan”)	Engaged in investing activities	R.O.C.	$ 3,934,190	$ 6,670,035	$ 237,537
ChipMOS Technologies Inc. (“ChipMOS”)	Engaged in the packaging and testing of semiconductors	R.O.C.	4,370,075	2,406,843	85,714
M-Universe Investments Pte. Ltd. (“MU”)	Investment company	Singapore	1,814,699	1,848,588	65,833
Hung Ching Development & Construction Co. (“HC”)	Engaged in the development, construction and leasing of real estate properties	R.O.C.	1,380,162	1,352,760	48,175
Hung Ching Kwan Co. (“HCK”)	Engaged in the leasing of real estate properties	R.O.C.	283,105	270,087	9,618
Deca Technologies Inc. (”DECA”)	Holding company and the group engaged in manufacturing, development and marketing of wafer level packaging and interconnect technology	British Cayman Islands	323,423	87,075	3,101
			12,105,654	12,635,388	449,978
	Less: Deferred gain on transfer of land		300,149	300,149	10,689
			$ 11,805,505	$ 12,335,239	$ 439,289

2) At each balance sheet date, the percentages of ownership held by the Group's subsidiary were as follows:

	December 31	
	2019	2020
Yann Yuan	32.21%	32.21%
ChipMOS	20.48%	10.85%
MU	42.23%	42.23%
HC	26.22%	26.22%
HCK	27.31%	27.31%
DECA	22.02%	17.85%

3) The Group evaluated the recoverable amount of its investment in DECA's preferred shares using the fair value less costs of disposal in 2019. The recoverable amount was lower than the carrying amount and, therefore, the Group recognized an impairment loss of NT$400,201 thousand under the line item of other gains and losses (Note 25). The fair value was the estimated transaction price of DECA's preferred shares, of which the fair value hierarchy was Level 3. In the first quarter of 2020, the Group's percentage of ownership in DECA decreased to 17.85% due to the partial disposal of ownership in DECA and the issuance of preferred shares by DECA, and a gain on disposal of NT$17,180 thousand (US$612 thousand) was recognized under the line item of other gains and losses (Note 25). The Group considered it still has significant influence over DECA since the Group continuously involves in making significant decisions by participating in DECA's board meeting.

4) In June 2020, the Group's subsidiary, SPIL, disposed 70,000 thousand ordinary shares of ChipMOS at NT$32 per share, which resulted in the Group's percentage of ownership in ChipMOS decreasing to 10.85% and a gain on disposal of NT$74,117 thousand (US$2,639 thousand) was recognized under the line item of other gains and losses (Note 25). The Group considered it still has significant influence over ChipMOS since the Group continuously involves in making significant decisions by participating in ChipMOS's board meeting.

5) Fair values (Level 1) of investments in associates with available published price quotation are summarized as follows:

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
ChipMOS	$ 5,100,181	$ 2,710,572	$ 96,530
HC	$ 1,551,033	$ 1,317,692	$ 46,926

6) Aggregate information of associates that are not individually material

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
The Group's share of:				
Net profit	$ 147,535	$ 321,413	$ 545,833	$ 19,438
Other comprehensive income (loss)	(613,471)	1,401,453	2,784,094	99,149
Total comprehensive income (loss)	$ (465,936)	$ 1,722,866	$ 3,329,927	$ 118,587

b. Investments in joint ventures

1) Investments in joint ventures that were not individually material and accounted for using the equity method consisted of the following:

			Carrying Amount as of December 31		
			2019	2020	
Name of Joint Venture	Main Business	Operating Location	NT$	NT$	US$ (Note 4)
SUMA-USI Electronics Co., Ltd. ("SUMA-USI")	Engaged in the design and production of electronic products	China	$ 279,702	$ 471,434	$ 16,789

2) At each balance sheet date, the percentages of ownership held by the Group's subsidiary were as follows:

	December 31	
	2019	2020
SUMA-USI	49.00%	49.00%

3) In March 2019, UGKS entered into a joint venture agreement with Cancon Information Industry Co., Ltd. to establish SUMA-USI and obtained 49.00% ownership of SUMA-USI. As of December 31, 2020, the Group has invested RMB107,800 thousand (equivalent to NT$469,307 thousand (US$16,713 thousand)) in SUMA-USI. Based on the joint venture agreement, both investors jointly lead the relevant operation activities of SUMA-USI, which resulted the Group's investment in SUMA-USI was accounted for using the equity method.

4) As disclosed in Note 29, the Group obtained control over ASEEE in April 2019.

5) Aggregate information of joint ventures that were not individually material

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
The Group's share of:				
Net profit (loss)	$ (306,156)	$ (139,137)	$ 1,780	$ 63
Other comprehensive income (loss)	-	(3,169)	3,881	138
Total comprehensive income (loss)	$ (306,156)	$ (142,306)	$ 5,661	$ 201

15. PROPERTY, PLANT AND EQUIPMENT

The carrying amounts of each class of property, plant and equipment were as follows:

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Land	$ 10,333,822	$ 10,336,568	$ 368,112
Buildings and improvements	85,409,580	82,273,186	2,929,957

(Continued)

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Machinery and equipment	$ 112,996,670	$ 122,063,883	$ 4,347,004
Other equipment	6,715,694	4,680,222	166,674
Construction in progress and machinery in transit	16,637,561	13,853,465	493,357
	$ 232,093,327	$ 233,207,324	$ 8,305,104

(Concluded)

For the year ended December 31, 2018

	Land	Buildings and Improvements	Machinery and Equipment	Other Equipment	Construction in Progress and Machinery in Transit	Total
	NT$	NT$	NT$	NT$	NT$	NT$
Cost						
Balance at January 1, 2018	$ 3,258,518	$ 100,187,928	$ 253,198,003	$ 7,812,080	$ 5,863,713	$ 370,320,242
Additions	-	144,898	192,673	84,860	38,669,807	39,092,238
Disposals	-	(677,206)	(26,493,282)	(2,251,060)	(34,902)	(29,456,450)
Reclassification	-	5,388,709	32,060,513	2,148,211	(39,612,324)	(14,891)
Acquisition through business combinations (Note 29)	6,880,400	37,127,957	95,810,062	11,122,171	5,781,189	156,721,779
Effect of foreign currency exchange differences	27,051	(464,275)	(929,579)	(78,095)	244,069	(1,200,829)
Balance at December 31, 2018	$ 10,165,969	$ 141,708,011	$ 353,838,390	$ 18,838,167	$ 10,911,552	$ 535,462,089
Accumulated depreciation and impairment						
Balance at January 1, 2018	$ -	$ 41,915,064	$ 187,012,805	$ 6,223,967	$ -	$ 235,151,836
Depreciation expenses	-	6,325,948	31,751,251	1,816,587	-	39,893,786
Impairment losses recognized	-	29,531	97,680	5,860	-	133,071
Disposals	-	(491,033)	(25,704,778)	(2,070,302)	-	(28,266,113)
Reclassification	-	(265)	-	-	-	(265)
Acquisition through business combinations (Note 29)	-	15,097,920	53,210,063	6,428,174	-	74,736,157
Effect of foreign currency exchange differences	-	(133,091)	(616,601)	(29,279)	-	(778,971)
Balance at December 31, 2018	$ -	$ 62,744,074	$ 245,750,420	$ 12,375,007	$ -	$ 320,869,501

For the year ended December 31, 2019

	Land	Buildings and Improvements	Machinery and Equipment	Other Equipment	Construction in Progress and Machinery in Transit	Total
	NT$	NT$	NT$	NT$	NT$	NT$
Cost						
Balance at January 1, 2019	$ 10,165,969	$ 141,708,011	$ 353,838,390	$ 18,380,122	$ 10,911,552	$ 535,004,044
Additions	-	806,844	413,008	76,671	61,777,364	63,073,887
Disposals	-	(983,690)	(19,139,634)	(2,507,440)	-	(22,630,764)
Reclassification	-	13,601,469	41,302,651	3,062,838	(57,221,627)	745,331
Acquisitions through business combinations (Note 29)	189,111	1,044,383	5,507,315	43,611	250,455	7,034,875
Effect of foreign currency exchange differences	(21,258)	(2,204,057)	(5,176,282)	(300,686)	919,817	(6,782,466)
Balance at December 31, 2019	$ 10,333,822	$ 153,972,960	$ 376,745,448	$ 18,755,116	$ 16,637,561	$ 576,444,907
Accumulated depreciation and impairment						
Balance at January 1, 2019	$ -	$ 62,744,074	$ 245,750,420	$ 12,194,041	$ -	$ 320,688,535
Depreciation expense	-	6,989,392	35,747,308	2,503,967	-	45,240,667
Impairment losses recognized	-	78,562	102,056	20,388	-	201,006
Disposals	-	(881,149)	(18,640,266)	(2,503,438)	-	(22,024,853)
Reclassification	-	210,558	83,777	(103)	-	294,232

(Continued)

	Land	Buildings and Improvements	Machinery and Equipment	Other Equipment	Construction in Progress and Machinery in Transit	Total
	NT$	NT$	NT$	NT$	NT$	NT$
Acquisitions through business combinations (Note 29)	-	$ 445,682	$ 4,000,338	$ 19,028	$ -	$ 4,465,048
Effect of foreign currency exchange differences	-	(1,023,739)	(3,294,855)	(194,461)	-	(4,513,055)
Balance at December 31, 2019	$ -	$ 68,563,380	$ 263,748,778	$ 12,039,422	$ -	$ 344,351,580

(Concluded)

For the year ended December 31, 2020

	Land	Buildings and Improvements	Machinery and Equipment	Other Equipment	Construction in Progress and Machinery in Transit	Total
	NT$	NT$	NT$	NT$	NT$	NT$
Cost						
Balance at January 1, 2020	$ 10,333,822	$ 153,972,960	$ 376,745,448	$ 18,755,116	$ 16,637,561	$ 576,444,907
Additions	-	86,409	695,561	47,137	58,195,094	59,024,201
Disposals	-	(365,758)	(12,818,849)	(2,419,423)	(126,605)	(15,730,635)
Disposal of subsidiaries (Note 30)	-	(3,665,811)	(3,223,448)	(445,506)	(792,543)	(8,127,308)
Reclassification	-	7,367,875	52,980,977	222,066	(60,032,844)	538,074
Acquisitions through business combinations (Note 29)	46,388	1,142,690	3,972,397	702,500	53,828	5,917,803
Effect of foreign currency exchange differences	(43,642)	(266,536)	(2,459,521)	(11,008)	(81,026)	(2,861,733)
Balance at December 31, 2020	$10,336,568	$158,271,829	$415,892,565	$16,850,882	$13,853,465	$615,205,309
Accumulated depreciation and impairment						
Balance at January 1, 2020	$ -	$68,563,380	$263,748,778	$12,039,422	$ -	$344,351,580
Depreciation expense	-	7,401,223	36,373,712	2,241,613	-	46,016,548
Impairment losses recognized	-	-	981,535	10,738	-	992,273
Disposals	-	(300,832)	(8,306,990)	(2,398,756)	-	(11,006,578)
Disposal of subsidiaries (Note 30)	-	(153,002)	(345,834)	(82,059)	-	(580,895)
Reclassification	-	3,462	497,230	(188,844)	-	311,848
Acquisitions through business combinations (Note 29)	-	548,190	3,049,895	588,935	-	4,187,020
Effect of foreign currency exchange differences	-	(63,778)	(2,169,644)	(40,389)	-	(2,273,811)
Balance at December 31, 2020	$ -	$75,998,643	$293,828,682	$12,170,660	$ -	$381,997,985

	Land	Buildings and Improvements	Machinery and Equipment	Other Equipment	Construction in Progress and Machinery in Transit	Total
	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)
Cost						
Balance at January 1, 2020	$ 368,014	$ 5,483,368	$ 13,416,861	$ 667,917	$ 592,506	$ 20,528,666
Additions	-	3,077	24,771	1,678	2,072,475	2,102,001
Disposals	-	(13,026)	(456,512)	(86,162)	(4,509)	(560,209)
Disposal of subsidiaries (Note 30)	-	(130,549)	(114,795)	(15,866)	(28,224)	(289,434)
Reclassification	-	262,389	1,886,787	7,908	(2,137,922)	19,162
Acquisitions through business combinations (Note 29)	1,652	40,694	141,467	25,018	1,917	210,748
Effect of foreign currency exchange differences	(1,554)	(9,492)	(87,590)	(391)	(2,886)	(101,913)
Balance at December 31, 2020	$ 368,112	$ 5,636,461	$ 14,810,989	$ 600,102	$ 493,357	$ 21,909,021
Accumulated depreciation and impairment						
Balance at January 1, 2020	$ -	$ 2,441,716	$ 9,392,763	$ 428,754	$ -	$ 12,263,233
Depreciation expense	-	263,576	1,295,360	79,830	-	1,638,766
Impairment losses recognized	-	-	34,955	382	-	35,337
Disposals	-	(10,713)	(295,833)	(85,426)	-	(391,972)
Disposal of subsidiaries (Note 30)	-	(5,449)	(12,316)	(2,922)	-	(20,687)
Reclassification	-	123	17,708	(6,725)	-	11,106
Acquisitions through business combinations (Note 29)	-	19,522	108,615	20,973	-	149,110
Effect of foreign currency exchange differences	-	(2,271)	(77,267)	(1,438)	-	(80,976)
Balance at December 31, 2020	$ -	$ 2,706,504	$ 10,463,985	$ 433,428	$ -	$ 13,603,917

Based on the future operation plans and the capacity evaluation, the Group assessed that a portion of plant and equipment in the packaging segment and the testing segment were not qualified for the production needs and, therefore, recognized an impairment loss of NT$133,071 thousand, NT$201,006 thousand and NT$992,273 thousand (US$35,337 thousand) under the line item of other operating income and expenses (Note 25) for the years ended December 31, 2018, 2019 and 2020, respectively. The recoverable amounts of a portion of the impaired plant and equipment were determined by their fair value less cost of disposal, of which the fair value was based on the recent quoted prices of assets with similar age and obsolescence provided by vendors in secondary market or the disposal price, and both of which represented Level 3 inputs because the secondary market was not active and the disposal price was negotiated with counter-parties. The recoverable amounts of the remaining impaired plant and equipment were determined by their value in use and the Group expects only short-term or no economic benefits would be generated by these assets and the discount effect was immaterial.

Each class of property, plant and equipment was depreciated on a straight-line basis over the following useful lives:

Buildings and improvements	
Main plant buildings	10-55 years
Cleanrooms	10-20 years
Others	3-20 years
Machinery and equipment	2-10 years
Other equipment	2-20 years

The capitalized borrowing costs for the years ended December 31, 2018, 2019 and 2020 are disclosed in Note 25.

16. LEASE ARRANGEMENTS

a. Right-of-use assets

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Carrying amounts			
Land	$ 7,036,887	$ 5,840,779	$ 208,005
Buildings and improvements	2,121,797	2,548,838	90,771
Machinery and equipment	588,443	181,065	6,448
Other equipment	45,094	49,930	1,778
	$ 9,792,221	$ 8,620,612	$ 307,002

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Additions to right-of-use assets	$ 824,268	$ 702,996	$ 25,035
Depreciation charge for right-of-use assets			
Land	$ 215,301	$ 214,682	$ 7,645
Buildings and improvements	307,708	370,458	13,193

(Continued)

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Machinery and equipment	$ 507,443	$ 335,039	$ 11,932
Other equipment	25,006	26,701	951
	$ 1,055,458	$ 946,880	$ 33,721

(Concluded)

The amounts disclosed above with respect to the right-of-use assets did not include the right-of-use assets that meet the definition of investment properties.

b. Lease liabilities

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Carrying amounts			
Current	$ 632,802	$ 774,444	$ 27,580
Non-current	$ 5,176,123	$ 5,101,386	$ 181,673

The Group's lease liabilities were mainly from land and buildings and improvements. The range of discount rates for lease liabilities was as follows:

	December 31	
	2019	2020
Land (%)	0.54-4.90	0.54-8.00
Buildings and improvements (%)	0.30-8.62	0.54-8.84

c. Material lease-in activities and terms

The Group leases land and buildings for the use of plants and offices with remaining lease terms of 1-54 years and 1-30 years, respectively. For the leasehold land located in the R.O.C., the Group has extension options at the expiry of the lease periods. However, the government has the right to adjust the lease payments on the basis of changes in announced land value prices and also has the right to terminate the lease contract under certain circumstances. The Group does not have bargain purchase options to acquire the leasehold land and buildings at the expiry of the lease periods. In addition, the Group is prohibited from subleasing or transferring all or any portion of the underlying assets without the lessor's consent.

d. Subleases

In addition to the sublease transactions described in Note 17, the Group did not have other sublease transactions.

e. Other lease information

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Expenses relating to short-term leases	$ 421,924	$ 682,142	$ 24,293
Expenses relating to low-value assets leases	$ 4,473	$ 5,433	$ 193
Expenses relating to variable lease payments not included in the measurement of lease liabilities	$ 53,403	$ 43,112	$ 1,535
Total cash outflow for leases	$ (1,511,277)	$ (1,854,456)	$ (66,042)

The Group elected to apply the recognition exemption for qualifying short-term leases and low-value asset leases and, thus, did not recognize right-of-use assets and lease liabilities for these leases.

17. INVESTMENT PROPERTIES

For the year ended December 31, 2018

	Land	Buildings and Improvements	Total
	NT$	NT$	NT$
Cost			
Balance at January 1, 2018	$ 35,965	$ 8,406,785	$ 8,442,750
Additions	-	125,853	125,853
Reclassification	-	14,891	14,891
Effects of foreign currency exchange differences	-	(137,739)	(137,739)
Balance at December 31, 2018	$ 35,965	$ 8,409,790	$ 8,445,755
Accumulated depreciation and impairment			
Balance at January 1, 2018	$ -	$ 323,314	$ 323,314
Depreciation expenses	-	392,667	392,667
Reclassification	-	265	265
Effects of foreign currency exchange differences	-	(8,870)	(8,870)
Balance at December 31, 2018	$ -	$ 707,376	$ 707,376
Carrying amount at December 31, 2018	$ 35,965	$ 7,702,414	$ 7,738,379

For the year ended December 31, 2019

	Land NT$	Buildings and Improvements NT$	Right-of-use Assets NT$	Total NT$
Cost				
Balance at January 1, 2019	$ 35,965	$ 8,409,790	$ 6,891,947	$ 15,337,702
Additions	-	2,532	-	2,532
Disposals	-	(1,843)	-	(1,843)
Reclassification	-	(490,130)	(21,069)	(511,199)
Effects of foreign currency exchange differences	-	(209,980)	(303,086)	(513,066)
Balance at December 31, 2019	$ 35,965	$ 7,710,369	$ 6,567,792	$ 14,314,126
Accumulated depreciation and impairment				
Balance at January 1, 2019	$ -	$ 707,376	$ 292,722	$ 1,000,098
Depreciation expenses	-	377,536	216,574	594,110
Disposals	-	(1,240)	-	(1,240)
Reclassification	-	(210,455)	543	(209,912)
Effects of foreign currency exchange differences	-	99,354	(22,355)	76,999
Balance at December 31, 2019	$ -	$ 972,571	$ 487,484	$ 1,460,055
Carrying amount at December 31, 2019	$ 35,965	$ 6,737,798	$ 6,080,308	$ 12,854,071

For the year ended December 31, 2020

	Land NT$	Buildings and Improvements NT$	Right-of-use Assets NT$	Total NT$
Cost				
Balance at January 1, 2020	$ 35,965	$ 7,710,369	$ 6,567,792	$ 14,314,126
Additions	-	6,352	-	6,352
Disposals	-	(1,902)	-	(1,902)
Reclassification	-	(3,884)	46,201	42,317
Effects of foreign currency exchange differences	-	111,870	124,920	236,790
Balance at December 31, 2020	$ 35,965	$ 7,822,805	$ 6,738,913	$ 14,597,683

(Continued)

	Land	Buildings and Improvements	Right-of-use Assets	Total
	NT$	NT$	NT$	NT$
Accumulated depreciation and impairment				
Balance at January 1, 2020	$ -	$ 972,571	$ 487,484	$ 1,460,055
Depreciation expenses	-	353,048	209,212	562,260
Disposals	-	(1,293)	-	(1,293)
Reclassification	-	(1,498)	10,617	9,119
Effects of foreign currency exchange differences	-	19,639	9,820	29,459
Balance at December 31, 2020	$ -	$ 1,342,467	$ 717,133	$ 2,059,600
Carrying amount at December 31, 2020	$ 35,965	$ 6,480,338	$ 6,021,780	$ 12,538,083

(Concluded)

	Land	Buildings and Improvements	Right-of-use Assets	Total
	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)
Cost				
Balance at January 1, 2020	$ 1,281	$ 274,586	$ 233,896	$ 509,763
Additions	-	226	-	226
Disposals	-	(68)	-	(68)
Reclassification	-	(138)	1,645	1,507
Effects of foreign currency exchange differences	-	3,984	4,449	8,433
Balance at December 31, 2020	$ 1,281	$ 278,590	$ 239,990	$ 519,861
Accumulated depreciation and impairment				
Balance at January 1, 2020	$ -	$ 34,636	$ 17,360	$ 51,996
Depreciation expenses	-	12,573	7,450	20,023
Disposals	-	(46)	-	(46)
Reclassification	-	(53)	378	325
Effects of foreign currency exchange differences	-	699	351	1,050
Balance at December 31, 2020	$ -	$ 47,809	$ 25,539	$ 73,348
Carrying amount at December 31, 2020	$ 1,281	$ 230,781	$ 214,451	$ 446,513

Right-of-use assets included in investment properties were leasehold land located in Shanghai and were subleased under operating leases.

The abovementioned investment properties were leased out for 1 to 15 years, with an option to extend for an additional lease term. The lease contracts contain market review clauses in the event that the lessees exercise their options to extend. The lessees do not have bargain purchase options to acquire the investment properties at the expiry of the lease term.

In addition to fixed lease payments, some of the lease contracts also indicated that the lessees should make variable payments determined at a specific percentage of the excess of respective lessee's monthly revenues over a specific amount.

The maturity analysis of lease payments receivable under operating leases of investment properties was as follows:

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Year 1	$ 921,649	$ 880,929	$ 31,372
Year 2	744,366	688,123	24,506
Year 3	623,326	471,966	16,808
Year 4	408,634	383,307	13,651
Year 5	320,611	335,706	11,955
Year 6 onwards	830,091	664,259	23,656
	$ 3,848,677	$ 3,424,290	$ 121,948

The investment properties were depreciated on a straight-line basis over the following useful lives:

Main buildings	10-40 years
Right-of-use assets	15-50 years

Because of the market conditions severely affected by COVID-19 in 2020, the Group agreed to provide unconditional rent reduction for some lease contracts. The rent concessions were accounted for as adjustments to related income over the remaining lease term. For the year ended December 31, 2020, total amount from the rent concessions was NT$54,139 thousand (US$1,928 thousand).

The fair value of the investment properties was measured using the market approach and the income approach based on level 3 inputs by independent professional appraisers. The significant unobservable inputs were discount rates. The fair value of the investment properties was as follows:

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Fair value	$ 19,586,287	$ 19,799,714	$ 705,118

Refer to Note 36 for the carrying amount of the investment properties that had been pledged by the Group to secure borrowings.

18. GOODWILL

	Cost	Accumulated impairment	Carrying amount
	NT$	NT$	NT$
For the year ended December 31, 2018			
Balance at January 1, 2018	$ 12,348,607	$ 2,414,113	$ 9,934,494

(Continued)

	Cost	Accumulated impairment	Carrying amount
	NT$	NT$	NT$
Acquisition through business combinations (Note 29)	$ 39,990,231	$ -	$ 39,990,231
Effect of foreign currency exchange differences	49,721	-	49,721
Balance at December 31, 2018	$ 52,388,559	$ 2,414,113	$ 49,974,446
For the year ended December 31, 2019			
Balance at January 1, 2019	$ 52,388,559	$ 2,414,113	$ 49,974,446
Acquisition through business combinations (Note 29)	264,977	-	264,977
Effect of foreign currency exchange differences	(40,987)	-	(40,987)
Balance at December 31, 2019	$ 52,612,549	$ 2,414,113	$ 50,198,436
For the year ended December 31, 2020			
Balance at January 1, 2020	$ 52,612,549	$ 2,414,113	$ 50,198,436
Acquisition through business combinations (Note 29)	4,625,269	-	4,625,269
Effect of foreign currency exchange differences	(46,266)	-	(46,266)
Balance at December 31, 2020	$ 57,191,552	$ 2,414,113	$ 54,777,439

(Concluded)

	Cost	Accumulated Impairment	Carrying Amount
	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)
For the year ended December 31, 2020			
Balance at January 1, 2020	$ 1,873,666	$ 85,973	$ 1,787,693
Acquisition through business combinations (Note 29)	164,718	-	164,718
Effect of foreign currency exchange differences	(1,647)	-	(1,647)
Balance at December 31, 2020	$ 2,036,737	$ 85,973	$ 1,950,764

a. Allocating goodwill to cash-generating units

The Group did not monitor goodwill for internal management purpose but for financial reporting purpose and, therefore, the goodwill was allocated to the following cash-generating units for evaluation of impairment: packaging segment, testing segment, EMS segment and other segment. The carrying amounts of goodwill allocated to cash-generating units were as follows:

Cash-generating units	December 31 2019 NT$	2020 NT$	2020 US$ (Note 4)
Packaging segment	$ 35,717,828	$ 35,703,625	$ 1,271,496
Testing segment	13,421,321	13,365,068	475,964
EMS segment (Note 29)	903,346	5,560,645	198,029
Others	155,941	148,101	5,275
	$ 50,198,436	$ 54,777,439	$ 1,950,764

b. Impairment assessment

At the end of each year, the Group performs evaluation of goodwill for impairment by reviewing the recoverable amounts based on value in use which incorporates cash flow projections estimated by management covering a five-year period. The cash flows beyond that five-year period are extrapolated using a steady per annum growth rate. In assessing value in use, the estimated future cash flows are discounted to their present value using annual pre-tax discount rates which were 9.74%-10.22%, 9.59%-14.99% and 10.39%-14.71% as of December 31, 2018, 2019 and 2020, respectively. For the years ended December 31, 2018, 2019 and 2020, no impairment loss was recognized. The key assumption used in calculating each segment's value in use also included the growth rates for operating revenues, which were based on the forecast for the Group and the industry as well as the Group's historical performance.

Management believes that any reasonably possible change in the key assumptions on which the recoverable amount was based would not cause the carrying amount of the cash-generating unit to exceed its recoverable amount.

19. OTHER INTANGIBLE ASSETS

The carrying amounts of each class of other intangible assets were as follows:

	December 31 2019 NT$	2020 NT$	2020 US$ (Note 4)
Customer relationships	$ 9,333,333	$ 8,334,203	$ 296,802
Computer software	1,929,539	2,678,867	95,401
Patents and acquired specific technology	17,718,523	15,720,213	559,837
Others	42,997	75,385	2,685
	$ 29,024,392	$ 26,808,668	$ 954,725

For the year ended December 31, 2018

	Customer Relationships NT$	Computer Software NT$	Patents and Acquired Specific Technology NT$	Others NT$	Total NT$
Cost					
Balance at January 1, 2018	$ 915,636	$ 3,686,452	$ 389,486	$ 198,754	$ 5,190,328
Additions	-	528,883	-	8,776	537,659
Disposals	-	(95,358)	(231)	(4,000)	(99,589)
Acquisition through business combinations (Note 29)	11,000,000	274,868	20,200,000	32,800	31,507,668
Effect of foreign currency exchange differences	-	6,200	(899)	(332)	4,969
Balance at December 31, 2018	$11,915,636	$ 4,401,045	$20,588,356	$ 235,998	$37,141,035
Accumulated amortization					
Balance at January 1, 2018	$ 801,860	$ 2,822,121	$ 70,084	$ 89,398	$ 3,783,463
Amortization expense	746,979	373,536	1,263,309	18,626	2,402,450
Disposals	-	(95,202)	(231)	(4,000)	(99,433)
Acquisition through business combinations (Note 29)	-	137,799	-	15,483	153,282
Effect of foreign currency exchange differences	-	3,109	(475)	939	3,573
Balance at December 31, 2018	$ 1,548,839	$ 3,241,363	$ 1,332,687	$ 120,446	$ 6,243,335

For the year ended December 31, 2019

	Customer Relationships NT$	Computer Software NT$	Patents and Acquired Specific Technology NT$	Others NT$	Total NT$
Cost					
Balance at January 1, 2019	$ 11,915,636	$ 4,401,045	$ 20,588,356	$ 83,657	$ 36,988,694
Additions	-	1,358,533	-	(7,625)	1,350,908
Disposals or derecognization	(915,635)	(1,123,446)	-	(6,315)	(2,045,396)
Acquisition through business combinations (Note 29)	-	19,944	732,604	-	752,548

(Continued)

	Customer Relationships NT$	Computer Software NT$	Patents and Acquired Specific Technology NT$	Others NT$	Total NT$
Effect of foreign currency exchange differences	$ -	$ (49,198)	$ (2,264)	$ (1,417)	$ (52,879)
Balance at December 31, 2019	$11,000,001	$ 4,606,878	$21,318,696	$ 68,300	$ 36,993,875
Accumulated amortization					
Balance at January 1, 2019	$ 1,548,839	$ 3,241,363	$ 1,332,687	$ 27,772	$ 6,150,661
Amortization expense	1,033,464	583,300	1,955,703	4,139	3,576,606
Disposals or derecognization	(915,635)	(1,116,512)	-	(6,315)	(2,038,462)
Acquisition through business combinations (Note 29)	-	7,765	313,422	-	321,187
Effect of foreign currency exchange differences	-	(38,577)	(1,639)	(293)	(40,509)
Balance at December 31, 2019	$ 1,666,668	$ 2,677,339	$ 3,600,173	$ 25,303	$ 7,969,483

(Concluded)

For the year ended December 31, 2020

	Customer Relationships NT$	Computer Software NT$	Patents and Acquired Specific Technology NT$	Others NT$	Total NT$
Cost					
Balance at January 1, 2020	$11,000,001	$ 4,606,878	$21,318,696	$ 68,300	$ 36,993,875
Additions	-	951,439	171	31,045	982,655
Disposals or derecognization	-	(55,413)	-	(14,594)	(70,007)
Disposal of subsidiaries (Note 30)	-	(38,125)	-	-	(38,125)
Acquisition through business combinations (Note 29)	103,633	1,451,123	-	114,269	1,669,025
Effect of foreign currency exchange differences	552	(66,459)	312	(19,160)	(84,755)
Balance at December 31, 2020	$11,104,186	$ 6,849,443	$21,319,179	$ 179,860	$ 39,452,668

(Continued)

	Customer Relationships	Computer Software	Patents and Acquired Specific Technology	Others	Total
	NT$	NT$	NT$	NT$	NT$
Accumulated amortization					
Balance at January 1, 2020	$ 1,666,668	$ 2,677,339	$ 3,600,173	$ 25,303	$ 7,969,483
Amortization expense	1,000,000	729,330	1,998,554	5,493	3,733,377
Disposals or derecognization	-	(47,345)	-	(5,044)	(52,389)
Disposal of subsidiaries (Note 30)	-	(10,688)	-	-	(10,688)
Acquisition through business combinations (Note 29)	102,768	843,746	-	79,673	1,026,187
Effect of foreign currency exchange differences	547	(21,806)	239	(950)	(21,970)
Balance at December 31, 2020	$ 2,769,983	$ 4,170,576	$ 5,598,966	$ 104,475	$12,644,000

(Concluded)

	Customer Relationships	Computer Software	Patents and Acquired Specific Technology	Others	Total
	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)
Cost					
Balance at January 1, 2020	$ 391,738	$ 164,063	$ 759,213	$ 2,432	$ 1,317,446
Additions	-	33,883	6	1,106	34,995
Disposals or derecognization	-	(1,973)	-	(520)	(2,493)
Disposal of subsidiaries (Note 30)	-	(1,358)	-	-	(1,358)
Acquisition through business combinations (Note 29)	3,691	51,678	-	4,069	59,438
Effect of foreign currency exchange differences	20	(2,367)	11	(682)	(3,018)
Balance at December 31, 2020	$ 395,449	$ 243,926	$ 759,230	$ 6,405	$ 1,405,010

(Continued)

	Customer Relationships US$ (Note 4)	Computer Software US$ (Note 4)	Patents and Acquired Specific Technology US$ (Note 4)	Others US$ (Note 4)	Total US$ (Note 4)
Accumulated amortization					
Balance at January 1, 2020	$ 59,354	$ 95,347	$ 128,211	$ 901	$ 283,813
Amortization expense	35,613	25,973	71,173	196	132,955
Disposals or derecognization	-	(1,686)	-	(180)	(1,866)
Disposal of subsidiaries (Note 30)	-	(381)	-	-	(381)
Acquisition through business combinations (Note 29)	3,660	30,048	-	2,837	36,545
Effect of foreign currency exchange differences	19	(776)	9	(33)	(781)
Balance at December 31, 2020	$ 98,646	$ 148,525	$ 199,393	$ 3,721	$ 450,285

(Concluded)

Each class of other intangible assets was amortized on the straight-line basis over the following useful lives:

Customer relationships	11 years
Computer software	2-10 years
Patents and acquired specific technology	5-17 years
Others	5-32 years

20. BORROWINGS

a. Short-term borrowings

Bank loans mainly represented unsecured revolving loans and letters of credit.

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Secured bank loans, annual interest rate was 0.90%-1.87% as of December 31, 2020	$ -	$ 300,495	$ 10,701
Unsecured bank loans, annual interest rates were 0.70%-5.40% and 0.58%-3.83% as of December 31, 2019 and 2020, respectively	40,572,329	34,297,362	1,221,416
	40,572,329	34,597,857	1,232,117
Less: financial liabilities for hedging - current (Note 34)	3,233,301	3,307,018	117,771
	$ 37,339,028	$ 31,290,839	$ 1,114,346

b. Long-term borrowings

1) Bank loans

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Revolving bank loans			
Syndicated bank loans - repayable through April 2021 to October 2022, annual interest rates were 1.80% and 1.15%-1.17% as of December 31, 2019 and 2020 (Note 36)	$ 20,000,000	$ 12,536,424	$ 446,454
Others - repayable through January 2021 to July 2029, annual interest rates were 0.82%-4.13% and 0.56%-4.15% as of December 31, 2019 and 2020, respectively	105,214,824	84,146,125	2,996,657
Mortgage loans			
Repayable through January 2021 to December 2033, annual interest rates were 2.43%-4.90% and 1.90%-4.90% as of December 31, 2019 and 2020, respectively	4,880,822	10,813,997	385,114
	130,095,646	107,496,546	3,828,225
Less: unamortized discounts	10,292	104,323	3,715
	130,085,354	107,392,223	3,824,510
Less: current portion	5,017,970	2,250,121	80,133
financial liabilities for hedging - current (Note 34)	-	1,970,307	70,168
financial liabilities for hedging - non-current (Note 34)	-	5,910,919	210,503
	$ 125,067,384	$ 97,260,876	$ 3,463,706

Pursuant to some of the above revolving bank loans agreements, the Company and its subsidiaries should meet certain financial covenants which are calculated based on each of their annual audited consolidated financial statements or semi-annual reviewed consolidated financial statements. The Company and its subsidiaries were in compliance with all of the financial covenants.

2) Long-term bills payable

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Ta Ching Bills Finance Corporation, repayable in March 2022, annual interest rates were 1.01%-1.03% and 0.91% as of December 31, 2019 and 2020, respectively	$ 3,100,000	$ 1,000,000	$ 35,613

(Continued)

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Mega Bills Finance Corporation, repayable in March 2022, annual interest rates were 1.04% and 0.92%-0.93% as of December 31, 2019 and 2020, respectively	$ 2,000,000	$ 2,000,000	$ 71,225
China Bills Finance Corporation, repayable through March 2022 to December 2022, annual interest rates were 1.02%-1.05% and 0.65%-0.90% as of December 31, 2019 and 2020, respectively	2,800,000	2,000,000	71,225
International Bills Finance Corporation, early repaid through March 2020 to June 2020, annual interest rates were 1.02%-1.05% as of December 31, 2019	3,000,000	-	-
	10,900,000	5,000,000	178,063
Less: unamortized discounts	4,635	1,498	53
	$ 10,895,365	$ 4,998,502	$ 178,010

(Concluded)

3) Long-term notes payable - only as of December 31, 2019

	December 31, 2019
	NT$
Commercial papers	$ 100,016
Less: unamortized discounts	2,137
	97,879
Less: current portion	94,798
	$ 3,081
Annual interest rate (%)	5.02-6.89

The Company's subsidiary funded from leasing companies by after-sales repurchasing its inventories and machinery which was repaid in October 2020.

21. BONDS PAYABLE

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Unsecured domestic bonds			
Repayable at maturity in January 2021 and interest due annually with annual interest rate at 1.30%	$ 7,000,000	$ 7,000,000	$ 249,288

(Continued)

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Repayable at maturity in January 2023 and interest due annually with annual interest rate at 1.50%	$ 2,000,000	$ 2,000,000	$ 71,225
Repayable at maturity in January 2022 and interest due annually with annual interest rate at 1.25%	3,700,000	3,700,000	131,766
Repayable at maturity in January 2024 and interest due annually with annual interest rate at 1.45%	4,300,000	4,300,000	153,134
Repayable at maturity in April 2024 and interest due annually with annual interest rate at 0.90%	6,500,000	6,500,000	231,481
Repayable at maturity in April 2026 and interest due annually with annual interest rate at 1.03%	3,500,000	3,500,000	124,644
Repayable at maturity in April 2025 and interest due annually with annual interest rate at 0.90%	-	10,000,000	356,125
Repayable at maturity in August 2023 and interest due annually with annual interest rate at 0.72%	-	3,000,000	106,838
Repayable at maturity in August 2025 and interest due annually with annual interest rate at 0.85%	-	5,000,000	178,063
Repayable at maturity in August 2027 and interest due annually with annual interest rate at 0.95%	-	2,000,000	71,225
Unsecured international bonds			
US$200,000 thousand (linked to New Taiwan dollar), repayable at maturity in October 2022 and interest due quarterly with annual interest rate at 2.15%	6,204,800	6,204,800	220,969
US$100,000 thousand (linked to New Taiwan dollar), repayable at maturity in October 2024 and interest due quarterly with annual interest rate at 2.50%	3,102,400	3,102,400	110,484
Secured domestic bonds			
Repayable at maturity in December 2020 and interest due annually with nil annual interest rate	250,000	-	-
	36,557,200	56,307,200	2,005,242
Less: discounts on bonds payable	35,045	53,646	1,910
	36,522,155	56,253,554	2,003,332
Less: current portion of bonds payable	250,000	6,999,951	249,286
	$ 36,272,155	$ 49,253,603	$ 1,754,046

(Concluded)

a. In December 2017, AMPI offered the fifth secured domestic convertible bonds in NT$250,000 thousand with nil coupon rate and a maturity of 3 years. Each holder of the bonds has the right to convert the bonds into ordinary shares of AMPI at the conversion price at any time from the 3 months after the offering date to the maturity date. The initial conversion price was NT$4.8 per share at offering date and the conversion price will be subject to adjustment in the event of the conversion provisions due to anti-dilution clause. As of December 31, 2019, the conversion prices was NT$4.8 per share. The bonds may be early redeemed at the option of AMPI, in whole or in part, at any time provided that (1) if the closing price of AMPI's ordinary shares on the Taipei Exchange exceeds the conversion price by 30% or more for 30 consecutive business days in the period starting from 3 months after the offering to 40 days before the maturity or (2) the outstanding amount of the bonds falls below 10% of the originally offered in the period aforementioned. AMPI already redeemed these bonds in December 2020.

b. In October 2019, the Company offered the second unsecured international bonds in the aggregate amount of US$300,000 thousand with par value of US$1,000 thousand. These unsecured international bonds were divided into tranche A, in the amount of US$200,000 thousand with maturity of 3 years, and tranche B, in the amount of US$100,000 thousand with maturity of 5 years. The annual interest rates of tranche A and tranche B were 2.15% and 2.50%, respectively. All the proceeds from bonds offering were used to support ASE's green investments by subscribing for ASE's newly issued ordinary shares from its private placement.

22. OTHER PAYABLES

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Accrued salary and bonus	$ 10,384,089	$ 12,448,548	$ 443,324
Payables for property, plant and equipment	14,282,564	10,013,971	356,623
Accrued employees' compensation and remuneration to directors	3,206,036	4,405,981	156,908
Accrued employee insurance	900,367	1,105,122	39,356
Accrued utilities	504,866	536,491	19,106
Others	9,903,768	10,905,510	388,373
	$ 39,181,690	$ 39,415,623	$ 1,403,690

23. RETIREMENT BENEFIT PLANS

a. Defined contribution plans

1) The pension plan under the R.O.C. Labor Pension Act ("LPA") for the Group's R.O.C. resident employees is a government-managed defined contribution plan. Based on the LPA, the Company and its subsidiaries in Taiwan makes monthly contributions to employees' individual pension accounts at 6% of their monthly salaries.

2) The subsidiaries located in China, U.S.A., Malaysia, Korea, Singapore and Mexico also make contributions at various ranges according to relevant local regulations.

b. Defined benefit plans

1) The Company and its subsidiaries in Taiwan joined the defined benefit pension plan under the R.O.C. Labor Standards Law operated by the government. Pension benefits are calculated on the basis of the length of service and average monthly salaries of the last six months before retirement. The Company and its subsidiaries in Taiwan make contributions based on a certain percentage of their domestic employees' monthly salaries to a pension fund administered by the pension fund monitoring committee. Before the end of each year, the Company and its subsidiaries in Taiwan

assess the balance in the pension fund. If the amount of the balance in the pension fund is inadequate to pay retirement benefits for employees who conform to retirement requirements in the next year, the Company and its subsidiaries in Taiwan are required to fund the difference in one appropriation that should be made by the end of March in the next year. Pension contributions are deposited in the Bank of Taiwan in the committee's name and are managed by the Bureau of Labor Funds, Ministry of Labor ("the Bureau"); the Company and its subsidiaries in Taiwan have no right to influence the investment policy and strategy.

2) ASE Japan has a pension plan under which eligible employees with more than a year of service are entitled to receive pension benefits based on their length of service and salaries at the time of termination of employment. ASE Korea has a pension plan under which eligible employees and directors with more than one year of service are entitled to receive a lump-sum payment upon termination of their service with ASE Korea, based on their length of service and salaries at the time of termination. ASE Korea makes contributions based on a certain percentage of employees' salaries to an external financial institution in the names of employees and were administered by the management. USIPL's pension plan stipulates that employees, who meet retirement criteria and terminate their employments due to retirement, are entitled to receive a pension of a month salary at the time of retirement; ASTEELFLASH GERMANY GmbH's, ASTEELFLASH HERSFELD GmbH's and ASTEELFLASH BONN GmbH 's pension plans stipulate that employees with more than ten years of service are entitled to receive a lump-sum payment based on their length of service and the salaries of the most recent ten years at the time of termination of employment. FINANCIERE AFG's, ASTEELFLASH GROUP's, ASTEELFLASH TECHNOLOGIE's and ASTEELFLASH FRANCE's pension plans stipulate that employees with more than two years of service are entitled to receive a lump-sum payment based on their length of service and the salaries of the most recent twelve months at the time of termination of employment.

3) ASE, SPIL, ASE Test, Inc. and ASE Electronics Inc. maintain pension plans for executive managers. Pension costs under the plans were NT$11,137 thousand, NT$11,567 thousand and NT$11,184 thousand (US$398 thousand) for the years ended December 31, 2018, 2019 and 2020, respectively. As of December 31, 2019 and 2020, accrued pension liabilities for executive managers were NT$335,109 thousand and NT346,015 thousand (US$12,322 thousand), respectively.

4) The amounts included in the consolidated balance sheets arising from the Group's obligation in respect of its defined benefit plans excluding those for executive managers were as follows:

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Present value of the defined benefit obligation	$ 10,668,574	$ 12,159,145	$ 433,018
Fair value of the plan assets	(5,742,178)	(5,962,305)	(212,333)
Present value of unfunded defined benefit obligation	4,926,396	6,196,840	220,685
Recorded under other payables	(19,014)	(102,367)	(3,646)
Recorded under other non-current assets	11,910	26,306	937
Net defined benefit liability	$ 4,919,292	$ 6,120,779	$ 217,976

Movements in net defined benefit liability (asset) were as follows:

	Present Value of the Defined Benefit Obligation	Fair Value of the Plan Assets	Net Defined Benefit Liability (Asset)
	NT$	NT$	NT$
Balance at January 1, 2018	$ 7,910,638	$ (4,341,373)	$ 3,569,265
Service cost			
Current service cost	224,126	-	224,126
Net interest expense (income)	178,779	(122,709)	56,070
Recognized in profit or loss	402,905	(122,709)	280,196
Remeasurement			
Return on plan assets (excluding amounts included in net interest)	-	(16,589)	(16,589)
Actuarial (gain) loss			
Changes in financial assumptions	(8,643)	-	(8,643)
Experience adjustments	302,499	-	302,499
Changes in demographic assumptions	8,190	-	8,190
Changes in other assumptions	22,723	-	22,723
Recognized in other comprehensive income	324,769	(16,589)	308,180
Contributions from the employer	-	(364,237)	(364,237)
Benefits paid from			
the pension fund	(541,989)	541,989	-
the Group	(295,953)	-	(295,953)
Business combinations	2,522,805	(1,210,524)	1,312,281
Exchange differences on foreign plans	(26,036)	21,320	(4,716)
Balance at December 31, 2018	10,297,139	(5,492,123)	4,805,016
Service cost			
Current service cost	211,226	-	211,226
Net interest expense (income)	151,635	(97,387)	54,248
Recognized in profit or loss	362,861	(97,387)	265,474
Remeasurement			
Return on plan assets (excluding amounts included in net interest)	-	(104,516)	(104,516)
Actuarial (gain) loss			
Changes in financial assumptions	398,732	-	398,732
Experience adjustments	70,374	-	70,374
Changes in demographic assumptions	(2,329)	-	(2,329)
Recognized in other comprehensive income	466,777	(104,516)	362,261

(Continued)

	Present Value of the Defined Benefit Obligation	Fair Value of the Plan Assets	Net Defined Benefit Liability (Asset)
	NT$	NT$	NT$
Contributions from the employer	$ -	$ (514,617)	$ (514,617)
Benefits paid from			
the pension fund	(393,897)	393,897	-
the Group	(21,439)	-	(21,439)
Business combinations	62,857	(28,380)	34,477
Exchange differences on foreign plans	(105,724)	100,948	(4,776)
Balance at December 31, 2019	$ 10,668,574	$ (5,742,178)	$ 4,926,396
Service cost			
Current service cost	193,693	-	193,693
Past service cost and gain on settlements	(25,891)	-	(25,891)
Net interest expense (income)	119,314	(81,114)	38,200
Recognized in profit or loss	287,116	(81,114)	206,002
Remeasurement			
Return on plan assets (excluding amounts included in net interest)	-	(109,616)	(109,616)
Actuarial (gain) loss			
Changes in financial assumptions	465,433	-	465,433
Experience adjustments	281,661	-	281,661
Changes in demographic assumptions	(36,627)	-	(36,627)
Recognized in other comprehensive income	710,467	(109,616)	600,851
Contributions from the employer	-	(620,433)	(620,433)
Benefits paid from			
the pension fund	(552,430)	603,137	50,707
the Group	(14,520)	-	(14,520)
Assets extinguished on settlement	-	11,910	11,910
Business combinations	1,018,480	-	1,018,480
Exchange differences on foreign plans	41,458	(24,011)	17,447
Balance at December 31, 2020	$ 12,159,145	$ (5,962,305)	$ 6,196,840

(Concluded)

	Present Value of the Defined Benefit Obligation	Fair Value of the Plan Assets	Net Defined Benefit Liability (Asset)
	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)
Balance at January 1, 2020	$ 379,935	$ (204,493)	$ 175,442
Service cost			
Current service cost	6,898	-	6,898

(Continued)

	Present Value of the Defined Benefit Obligation	Fair Value of the Plan Assets	Net Defined Benefit Liability (Asset)
	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)
Past service cost and gain on settlements	$ (922)	$ -	$ (922)
Net interest expense (income)	4,249	(2,889)	1,360
Recognized in profit or loss	10,225	(2,889)	7,336
Remeasurement			
Return on plan assets (excluding amounts included in net interest)	-	(3,904)	(3,904)
Actuarial (gain) loss			
Changes in financial assumptions	16,575	-	16,575
Experience adjustments	10,031	-	10,031
Changes in demographic assumptions	(1,304)	-	(1,304)
Recognized in other comprehensive income	25,302	(3,904)	21,398
Contributions from the employer	-	(22,095)	(22,095)
Benefits paid from			
the pension fund	(19,673)	21,479	1,806
the Group	(517)	-	(517)
Assets extinguished on settlement	-	424	424
Business combinations	36,270	-	36,270
Exchange differences on foreign plans	1,476	(855)	621
Balance at December 31, 2020	$ 433,018	$ (212,333)	$ 220,685

(Concluded)

5) The fair value of the plan assets by major categories at each balance sheet date was as follows:

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Cash	$ 2,396,657	$ 2,236,340	$ 79,642
Equity instruments	2,315,637	2,459,708	87,596
Debt instruments	1,029,884	1,092,115	38,893
Others	-	174,142	6,202
Total	$ 5,742,178	$ 5,962,305	$ 212,333

6) Through the defined benefit plans under the Labor Standards Law of the R.O.C., the Group in Taiwan are exposed to the following risks:

a) Investment risk

The plan assets are invested in equity and debt securities, bank deposits, etc. The investment is conducted at the discretion of the Bureau or under the mandated management. However, in accordance with relevant regulations, the return generated by plan assets should not be below the interest rate for a 2-year time deposit with local banks.

b) Interest risk

A decrease in the government bond interest rate will increase the present value of the defined benefit obligation; however, this will be partially offset by an increase in the return on the plan's debt investments.

c) Salary risk

The present value of the defined benefit obligation is calculated by reference to the future salaries of plan participants. As such, an increase in the salary of the plan participants will increase the present value of the defined benefit obligation.

7) The management of ASE Korea is responsible for the administration of the fund and determination of the investment strategies according to related local regulations. ASE Korea is responsible for the shortfall between the fund and the defined benefit obligation. The plan assets are invested in the certificates of deposits.

8) The present value of the defined benefit obligation and the related current service cost and past service cost were measured using the Projected Unit Credit Method. Except the pension plans for executive managers, the key assumptions used for the actuarial valuations were as follow:

	December 31	
	2019	**2020**
Discount rates (%)	0.08-2.85	0.00-2.77
Expected rates of salary increase (%)	1.00-4.01	1.00-4.06

The sensitivity analysis below has been determined based on reasonably possible changes of the respective assumptions occurring at each balance sheet date, while holding all other assumptions constant.

	December 31		
	2019	**2020**	
	NT$	**NT$**	**US$ (Note 4)**
Discount Rate			
0.5% higher	$ (555,266)	$ (617,803)	$ (22,002)
0.5% lower	$ 601,616	$ 600,451	$ 21,384
Expected rates of salary increase			
0.5% higher	$ 591,915	$ 611,217	$ 21,767
0.5% lower	$ (545,528)	$ (565,555)	$ (20,141)

The sensitivity analysis presented above may not be representative of the actual change in the defined benefit obligation as it is unlikely that the change in assumptions would occur in isolation of one another as some of the assumptions may be correlated.

9) Maturity analysis of undiscounted pension benefit

	December 31		
	2019	**2020**	
	NT$	**NT$**	**US$ (Note 4)**
No later than 1 year	$ 422,067	$ 498,092	$ 17,738
Later than 1 year but not later than 5 years	2,081,540	2,553,522	90,937
Later than 5 years	12,216,422	12,325,576	438,945
	$ 14,720,029	$ 15,377,190	$ 547,620

The Group expected to make contributions of NT$533,777 thousand and NT$513,781 thousand (US$18,297 thousand) to the defined benefit plans in the next year starting from January 1, 2020 and 2021, respectively.

As of December 31, 2019 and 2020, the average duration of the defined benefit obligation excluding those for executive managers of the Group was 10 to 14 years and 9 to 16 years, respectively.

24. EQUITY

a. Share capital

Ordinary shares

	December 31 2019	December 31 2020
Numbers of shares authorized (in thousands)	5,000,000	5,500,000
Numbers of shares reserved (in thousands)		
Employee share options	400,000	400,000
Number of shares issued and fully paid (in thousands)	4,330,528	4,351,592

	December 31 2019 NT$	December 31 2020 NT$	2020 US$ (Note 4)
Share capital authorized	$ 50,000,000	$ 55,000,000	$ 1,958,689
Share capital reserved			
Employee share options	$ 4,000,000	$ 4,000,000	$ 142,450
Share capital issued and fully paid	$ 43,305,287	$ 43,515,920	$ 1,549,712

American Depositary Receipts

The Company's ADS represents 2 ordinary shares of the Company. As of December 31, 2019 and 2020, 125,542 thousand and 107,964 thousand ADSs were outstanding and represented approximately 251,084 thousand and 215,927 thousand ordinary shares of the Company, respectively.

b. Capital surplus

	December 31 2019 NT$	December 31 2020 NT$	2020 US$ (Note 4)
May be used to offset a deficit, distributed as cash dividends, or transferred to share capital (1)			
Issuance of ordinary shares	$ 13,070,330	$ 13,548,426	$ 482,494
Merger by share exchange	117,693,658	117,693,658	4,191,369

(Continued)

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Difference between consideration and the carrying amount of the subsidiaries' net assets during actual disposal or acquisition	$ 3,254,489	$ 3,240,987	$ 115,420
	134,018,477	134,483,071	4,789,283
May be used to offset a deficit only			
Changes in percentage of ownership interest in subsidiaries (2)	891,876	1,451	52
Treasury share transactions	364,708	510,449	18,178
Exercised employee share options	1,443,995	1,617,254	57,595
Expired share options (Note 28)	645,903	645,903	23,002
Share of changes in capital surplus of associates	16,266	41,239	1,469
Dividends that the claim period has elapsed and unclaimed by shareholders	1,942	3,550	126
	3,364,690	2,819,846	100,422
May not be used for any purpose			
Employee share options	1,304,250	1,894,952	67,484
Others (3)	222,946	569,681	20,288
	1,527,196	2,464,633	87,772
	$ 138,910,363	$ 139,767,550	$ 4,977,477

(Concluded)

1) Such capital surplus may be used to offset a deficit; in addition, when the Company has no deficit, such capital surplus may be distributed as cash dividends or transferred to share capital (limited to a certain percentage of the Company's capital surplus and once a year).

2) Such capital surplus arises from the effects of changes in ownership interests in subsidiaries resulting from equity transactions other than actual disposals or acquisitions, or from changes in capital surplus of subsidiaries accounted for using the equity method.

3) Such capital surplus represents the excess of the carrying amount of related accounts over the par value due to employee share options exercised and the Company has not completed registration formalities.

c. Retained earnings and dividend policy

The Articles of Incorporation of the Company (the "Articles") provides that annual net income shall be distributed in the following order:

1) Replenishment of deficits;

2) 10.0% as legal reserve;

3) Special reserve appropriated or reversed in accordance with laws or regulations set forth by the authorities concerned;

4) If annual net income remains, a proposal for the distribution of such amount together with a part or all of the accumulated undistributed profits in previous years shall be prepared by the board of directors and submit to the shareholders' meeting for resolution.

For the policies on the distribution of employees' compensation and remuneration of directors, refer to employees' compensation and remuneration of directors in Note 25(g).

The Company is currently in the mature growth stage. To meet the capital needs for business development now and in the future and satisfy the shareholders' demand for cash inflows, the Company shall use residual dividend policy to distribute dividends, of which the cash dividend is not lower than 30% of the total dividend distribution, with the remainder to be distributed in shares. A distribution plan is also to be made by the board of directors and passed for resolution in the shareholders' meeting.

Appropriation of earnings to legal reserve shall be made until the legal reserve equals the Company's share capital. Legal reserve may be used to offset deficits. If the Company has no deficit and the legal reserve has exceeded 25% of the Company's share capital, the excess may be transferred to capital or distributed in cash.

Items referred to under Rule No. 1010012865 and Rule No. 1010047490 issued by the Financial Supervisory Commission R.O.C. and in the directive titled "Questions and Answers for Special Reserves Appropriated Following Adoption of IFRSs" should be appropriated to or reversed from a special reserve by the Company.

The appropriation of earnings for 2018 and 2019 resolved at the Company's annual shareholders' meetings in June 2019 and June 2020, respectively were as follows:

	Appropriation of Earnings		Dividends Per Share	
	For Year 2018	For Year 2019	For Year 2018	For Year 2019
	NT$	NT$	NT$ (in dollars)	NT$ (in dollars)
Legal reserve	$ 2,203,895	$ 1,697,489		
Special reserve	3,548,844	3,944,915		
Cash dividends	10,806,454	8,668,331	$ 2.5	$ 2.0
	$ 16,559,193	$ 14,310,735		

d. Others equity items

1) Exchange differences on translating foreign operations

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Balance at January 1	$ (6,733,659)	$ (5,888,574)	$ (10,762,684)	$ (383,286)
Recognized for the year				
Exchange differences on translating foreign operations	426,186	(4,788,135)	(1,173,204)	(41,781)

(Continued)

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Share from associates and joint venture accounted for using the equity method	$ 136,608	$ (85,975)	$ 101,038	$ 3,598
Reclassification adjustments				
Disposal of associates and joint venture accounted for using the equity method	282,291	-	29,971	1,067
Disposal of foreign operations	-	-	162,940	5,803
Balance at December 31	$ (5,888,574)	$ (10,762,684)	$ (11,641,939)	$ (414,599)

(Concluded)

2) Unrealized gain (loss) on financial assets at FVTOCI

	For the Year Ended December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Balance at January 1	$ (1,015,107)	$ (203,098)	$ (7,233)
Unrealized gain (loss) recognized during the year			
Debt instruments	(2,052)	(2,136)	(76)
Equity instruments	(283,472)	(405,020)	(14,424)
Share from associates and joint venture accounted for using the equity method	1,501,689	2,655,570	94,572
Realized gain (loss) recognized during the year			
Share from the disposal of associates and joint venture accounted for using the equity method	-	1,094	39
Equity instruments	-	16,383	583
Share from associates and joint venture accounted for using the equity method	(404,156)	(34,891)	(1,242)
Balance at December 31	$ (203,098)	$ 2,027,902	$ 72,219

3) Gain (loss) on hedging instruments - hedges of net investments of foreign operations

	For the year ended December 31, 2020	
	NT$	US$ (Note 4)
Balance at January 1	$ -	$ -
Recognized during the period		
Foreign currency risk – loans denominated in foreign currency	(429,265)	(15,287)
Balance at December 31	$ (429,265)	$ (15,287)

e. Treasury shares (in thousand shares)

The Company's shares held by subsidiaries both were 72,941 thousand shares for the years ended December 31, 2019 and 2020.

The Company's shares held by its subsidiaries at each balance sheet date were as follows:

	Shares Held by Subsidiaries (in thousand shares)	Carrying Amount NT$	Carrying Amount US$ (Note 4)	Fair Value NT$	Fair Value US$ (Note 4)
December 31, 2019					
ASE Test	44,100	$ 1,380,721		$ 3,669,140	
J&R Holding	23,352	381,709		1,942,876	
ASE Test, Inc.	5,489	196,677		456,717	
	72,941	$ 1,959,107		$ 6,068,733	
December 31, 2020					
ASE Test	44,100	$ 1,380,721	$ 49,171	$ 3,585,349	$ 127,683
J&R Holding	23,352	381,709	13,594	1,898,508	67,611
ASE Test, Inc.	5,489	196,677	7,004	446,287	15,893
	72,941	$ 1,959,107	$ 69,769	$ 5,930,144	$ 211,187

Fair value (Level 1) of the Company's shares held by subsidiaries is based on the closing price from an available published price quotation.

The subsidiaries holding the aforementioned treasury shares retain shareholders' rights except the rights to participate in any capital increase by cash and voting.

f. Non-controlling interests

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Balance at January 1	$ 13,195,312	$ 17,639,487	$ 13,374,912	$ 476,315
Share of profit for the year	1,203,588	1,207,974	1,681,320	59,876
Other comprehensive income (loss)				
Exchange difference on translating foreign operations	(198,365)	(414,010)	178,480	6,356
Unrealized (loss) gain on equity instruments at FVTOCI	(23,928)	(10,773)	1,321	47
Loss from hedging	-	-	(145,559)	(5,184)
Remeasurement on defined benefit plans	(30,079)	(7,422)	(9,075)	(323)
Non-controlling interests arising from acquisition or disposal of subsidiaries (Note 29)	3,582,866	666,651	(5,658)	(202)
Subscribing for ordinary shares from subsidiaries' cash capital increase	-	83,044	-	-
Acquisition of non-controlling interests in subsidiaries (Note 31)	(2,492,915)	(5,084,785)	(116,738)	(4,157)
Issuance of new ordinary shares by subsidiaries (Note 29)	-	-	1,711,453	60,949
Partial disposal of subsidiaries	1,693,064	-	-	-
Subsidiaries' buy back of their own outstanding ordinary shares (Note 31)	(801,884)	(2,017,319)	(2,299,533)	(81,892)
Non-controlling interest relating to outstanding vested employee share options granted by subsidiaries	1,936,643	1,672,310	1,591,904	56,692
Cash dividends to non-controlling interests	(424,815)	(360,245)	(346,774)	(12,350)
Balance at December 31	$ 17,639,487	$ 13,374,912	$ 15,616,053	$ 556,127

25. PROFIT BEFORE INCOME TAX

a. Other operating income and expenses, net

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Rental income	$ 182,411	$ 136,301	$ 153,682	$ 5,473
Gains (losses) on disposal of property, plant and equipment and other assets	(14,644)	(164,187)	732,796	26,097
Impairment losses on property, plant and equipment (Note 15)	(133,071)	(201,006)	(992,273)	(35,337)
Loss on damages and claims	(24,114)	(459,544)	(176,888)	(6,299)
Others	361,001	419,881	785,175	27,961
	$ 371,583	$ (268,555)	$ 502,492	$ 17,895

b. Other income

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Government subsidy	$ 435,950	$ 624,351	$ 803,049	$ 28,599
Interest income	466,211	549,681	520,783	18,546
Dividends income	190,397	185,061	150,715	5,367
	$ 1,092,558	$ 1,359,093	$ 1,474,547	$ 52,512

c. Other gains, net

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Remeasurement gain on investments accounted for using the equity method due to step acquisition (Note 29)	$ 7,421,408	$ 319,712	$ -	$ -
Net gains on financial assets mandatorily at FVTPL	3,388,485	3,631,763	3,211,125	114,356
Net losses arising on financial instruments held for trading	(1,398,995)	(1,984,941)	(3,282,973)	(116,915)
Gain on disposal of subsidiaries (Note 30)	-	-	802,753	28,588
Foreign exchange gains (losses), net	(1,015,615)	1,125,681	1,005,374	35,805
Gain on disposal of investments accounted for using the equity method (Note 14)	-	-	91,297	3,251
Impairment losses on financial assets (Note 14)	(521,010)	(400,201)	-	-
Others	-	(8,025)	-	-
	$ 7,874,273	$ 2,683,989	$ 1,827,576	$ 65,085

d. Finance costs

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Interest on lease liabilities	$ -	$ 88,742	$ 88,026	$ 3,135
Interest on borrowings and bonds payable	3,597,932	4,211,541	3,498,999	124,608
Total interest expense for financial liabilities measured at amortized cost	3,597,932	4,300,283	3,587,025	127,743
Less: Amounts included in the cost of qualifying assets				
Inventories related to real estate business	(11,648)	(35,713)	(95,589)	(3,404)
Property, plant and equipment	(50,309)	(77,715)	(54,208)	(1,930)
Investment properties	(89)	-	-	-
	3,535,886	4,186,855	3,437,228	122,409
Other finance costs	32,355	16,540	22,283	793
	$ 3,568,241	$ 4,203,395	$ 3,459,511	$ 123,202

Information relating to the capitalized borrowing costs was as follows:

	For the Year Ended December 31		
	2018	2019	2020
Annual interest capitalization rates			
Inventories related to real estate business (%)	4.35	4.35-4.85	4.20-4.75
Property, plant and equipment (%)	1.84-4.52	0.96-4.03	0.49-3.47
Investment properties (%)	1.84-2.23	-	-

e. Depreciation and amortization

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Property, plant and equipment	$ 39,893,786	$ 45,240,667	$ 46,016,548	$ 1,638,766
Right-of-use assets	-	1,055,458	946,880	33,721
Investment properties	392,667	594,110	562,260	20,023
Other intangible assets	2,402,450	3,576,606	3,733,377	132,955
Total	$ 42,688,903	$ 50,466,841	$ 51,259,065	$ 1,825,465
Summary of depreciation by function				
Operating costs	$ 37,903,050	$ 43,749,333	$ 44,017,839	$ 1,567,587
Operating expenses	2,383,403	3,140,902	3,507,849	124,923
	$ 40,286,453	$ 46,890,235	$ 47,525,688	$ 1,692,510

(Continued)

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Summary of amortization by function				
Operating costs	$ 1,394,664	$ 2,092,074	$ 2,231,060	$ 79,454
Operating expenses	1,007,786	1,484,532	1,502,317	53,501
	$ 2,402,450	$ 3,576,606	$ 3,733,377	$ 132,955

(Concluded)

Operating expenses directly related to investment properties

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Direct operating expenses of investment properties that generated rental income	$ 1,276,751	$ 1,232,826	$ 1,121,854	$ 39,952

f. Employee benefits expense

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Post-employment benefits				
Defined contribution plans	$ 2,965,054	$ 3,148,209	$ 2,979,167	$ 106,096
Defined benefit plans	291,333	277,041	217,186	7,735
	3,256,387	3,425,250	3,196,353	113,831
Equity-settled share-based payments	215,648	871,699	955,575	34,030
Other employee benefits	63,940,430	70,279,752	76,648,412	2,729,644
	$ 67,412,465	$ 74,576,701	$ 80,800,340	$ 2,877,505
Summary of employee benefits expense by function				
Operating costs	$ 45,363,170	$ 49,173,778	$ 52,526,164	$ 1,870,590
Operating expenses	22,049,295	25,402,923	28,274,176	1,006,915
	$ 67,412,465	$ 74,576,701	$ 80,800,340	$ 2,877,505

g. Employees’ compensation and the remuneration to directors

The Articles stipulates to distribute employees’ compensation and remuneration to directors at the rates in 0.01%-1.00% and no higher than 0.75%, respectively, of net profit before income tax, employees’ compensation and remuneration to directors.

	For the Year Ended December 31				
	2019		2020		
	Accrual Rate (%)	Accrual Amount	Accrual Rate (%)	Accrual Amount	
		NT$		NT$	US$ (Note 4)
Employees' compensation	0.20	$ 34,400	0.20	$ 54,909	$ 1,955
Remuneration to directors	0.40	68,803	0.40	109,818	3,911

If there is a change in the proposed amounts after the consolidated financial statement authorized for issue, the differences are recorded as a change in accounting estimate and will be adjusted in the following year.

In March 2019 and 2020, the board of directors resolved the appropriations of employees' compensation and remuneration to directors in cash for 2018 and 2019, respectively. The differences between the resolved amounts and the accrued amounts reflected in the annual consolidated financial statements for the years ended December 31, 2018 and 2019 were deemed changes in estimates. The differences were both NT$3 thousand (US$0.1 thousand) and were adjusted in net profit for each of the year ended December 31, 2019 and 2020, respectively.

	For Year 2018		For Year 2019	
	Employees' compensation	Remuneration to directors	Employees' compensation	Remuneration to directors
	NT$	NT$	NT$	NT$
Resolved by the board of directors	$ 45,430	$ 34,070	$ 34,400	$ 68,800
Recognized in the consolidated financial statements	$ 45,430	$ 34,073	$ 34,400	$ 68,803

Information on the employees' compensation and the remuneration to directors resolved by the board of directors is available at the Market Observation Post System website of the Taiwan Stock Exchange (the "TWSE").

26. INCOME TAX

The Company and its subsidiaries have filed a consolidated tax return for corporate income tax starting from 2019 and for unappropriated earnings starting from 2018.

a. Income tax recognized in profit or loss

The major components of income tax were as follows:

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Current income tax				
In respect of the current year	$ 5,207,309	$ 5,002,954	$ 6,807,882	$ 242,446
Income tax on unappropriated earnings	(1,022,560)	19,115	680,649	24,240
Changes in estimate for prior years	(103,822)	(352,579)	(472,512)	(16,827)
	4,080,927	4,669,490	7,016,019	249,859

(Continued)

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Deferred income tax				
In respect of the current year	$ (227,327)	$ 563,512	$ 212,338	$ 7,562
Effect of tax rate changes	657,346	54,072	-	-
Changes in estimate for prior years	5,696	(213,758)	(103,021)	(3,669)
Effect of foreign currency exchange differences	(3,273)	(62,070)	(8,438)	(301)
	432,442	341,756	100,879	3,592
Income tax expense recognized in profit or loss	$ 4,513,369	$ 5,011,246	$ 7,116,898	$ 253,451

(Concluded)

A reconciliation of income tax expense calculated at the statutory rates and income tax expense recognized in profit or loss was as follows:

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Profit before income tax	$ 31,937,678	$ 23,279,811	$ 35,768,798	$ 1,273,817
Income tax expense calculated at the statutory rates	$ 13,540,599	$ 11,802,811	$ 16,907,904	$ 602,133
Nontaxable expense in determining taxable income	353,019	459,133	316,619	11,276
Tax-exempt income	(2,515,453)	(495,883)	(387,212)	(13,790)
Additional income tax on unappropriated earnings	(1,022,560)	19,115	680,649	24,240
Loss carry-forward and income tax credits currently used	(971,124)	(898,198)	(1,191,387)	(42,428)
Remeasurement of deferred income tax assets, net	(4,776,271)	(5,588,335)	(8,650,569)	(308,069)
Changes in estimate for prior periods	(103,822)	(352,579)	(472,512)	(16,827)
Unrecognized deductible temporary differences	-	-	(138,890)	(4,946)
Withholding tax	8,981	65,182	52,296	1,862
Income tax expense recognized in profit or loss	$ 4,513,369	$ 5,011,246	$ 7,116,898	$ 253,451

In July 2019, the President of the R.O.C. announced the amendments to the Statute for Industrial Innovation, which stipulate that the amounts of unappropriated earnings in 2018 and thereafter that are reinvested in the construction or purchase of certain assets or technologies are allowed as deduction when computing the income tax on unappropriated earnings. When calculating the tax on unappropriated earnings, the Group only deducts the amount of the unappropriated earnings that has been reinvested in capital expenditure.

In addition, in accordance with Rule No.10904558730 issued by the Ministry of Finance of Taiwan (MOF), the Group has deducted the amount of dividends distributed in 2020 attributable to the increase in the retained earnings as of January 1, 2018 as a result of initial adoption of IFRS 9 and IFRS 15 when calculating the tax on unappropriated earnings for 2018.

b. Income tax recognized directly in equity

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Deferred income tax				
Related to employee share options	$ (1,099)	$ 1,404	$ (1,159)	$ (41)

c. Income tax recognized in other comprehensive income

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Deferred income tax				
Related to remeasurement of defined benefit plans	$ 55,346	$ 74,308	$ 114,559	$ 4,080
Unrealized loss on equity instruments at fair value through other comprehensive income	-	(78,124)	(237,460)	(8,457)
Effect of tax rate changes	70,755	-	-	-
Income tax recognized in other comprehensive income	$ 126,101	$ (3,816)	$ (122,901)	$ (4,377)

d. Current tax assets and liabilities

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Current tax assets			
Tax refund receivable	$ 90,569	$ 303,265	$ 10,800
Prepaid income tax	462,523	399,555	14,229
	$ 553,092	$ 702,820	$ 25,029
Current tax liabilities			
Income tax payable	$ 4,858,578	$ 6,514,502	$ 231,998

e. Deferred tax assets and liabilities

The Group offset certain deferred tax assets and deferred tax liabilities which met the offset criteria.

The movements of deferred tax assets and deferred tax liabilities were as follows:

For the year ended December 31, 2018

Deferred tax assets (liabilities)	Balance at January 1	Adjustment on initial Application of IFRS 15	Recognized in Profit or Loss	Recognized in Other Comprehensive Income	Recognized in Equity	Exchange Differences	Acquisitions Through Business Combinations	Balance at December 31
	NT$	NT$	NT$	NT$	NT$	NT$	NT$	NT$
Temporary differences								
Property, plant and equipment	$(3,879,066)	$ -	$ (600,229)	$ -	$ -	$ (21,146)	$ (45,873)	$ (4,546,314)
Defined benefit obligation	780,240	-	(131,687)	126,101	-	27,884	262,286	1,064,824
FVTPL financial instruments	(104,903)	-	284,659	-	-	(137)	27,402	207,021
Others	1,028,409	(97,358)	(26,147)	-	(1,099)	74,327	294,540	1,272,672
	(2,175,320)	(97,358)	(473,404)	126,101	(1,099)	80,928	538,355	(2,001,797)
Loss carry-forward	681,441	-	(50,059)	-	-	28,293	12,600	672,275
Investment credits	534,213	-	91,021	-	-	5,932	-	631,166
	$ (959,666)	$ (97,358)	$ (432,442)	$ 126,101	$ (1,099)	$ 115,153	$ 550,955	$ (698,356)

For the year ended December 31, 2019

Deferred tax assets (liabilities)	Balance at January 1	Recognized in Profit or Loss	Recognized in Other Comprehensive Income	Recognized in Equity	Exchange Differences	Acquisitions through Business Combinations	Balance at December 31
	NT$	NT$	NT$	NT$	NT$	NT$	NT$
Temporary differences							
Property, plant and equipment	$ (4,546,314)	$ (80,593)	$ -	$ -	$ (17,949)	$ (16,917)	$ (4,661,773)
Defined benefit obligation	1,064,824	(57,746)	74,308	-	(2,803)	-	1,078,583
FVTPL financial instruments	207,021	43,285	-	-	9	-	250,315
Others	1,272,672	6,148	(78,124)	1,404	(21,763)	8,184	1,188,521
	(2,001,797)	(88,906)	(3,816)	1,404	(42,506)	(8,733)	(2,144,354)
Loss carry-forward	672,275	(166,128)	-	-	(12,203)	48,837	542,781
Investment credits	631,166	(86,722)	-	-	(7,404)	-	537,040
	$ (698,356)	$ (341,756)	$ (3,816)	$ 1,404	$ (62,113)	$ 40,104	$ (1,064,533)

For the year ended December 31, 2020

Deferred tax assets (liabilities)	Balance at January 1	Recognized in Profit or Loss	Recognized in Other Comprehensive Income	Recognized in Equity	Exchange Differences	Acquisitions through Business Combinations	Disposal of Subsidiaries	Balance at December 31
	NT$	NT$	NT$	NT$	NT$	NT$	NT$	NT$
Temporary differences								
Property, plant and equipment	$(4,661,773)	$ (422,833)	$ -	$ -	$ 43,364	$ 21,875	$ (13,982)	$(5,033,349)
Defined benefit obligation	1,078,583	(36,633)	114,559	-	1,005	212,941	-	1,370,455
FVTPL financial instruments	250,315	(135,103)	-	-	(74)	2,085	(11,281)	105,942
Others	1,188,521	624,442	(237,460)	(1,159)	(42,771)	114,036	(119,564)	1,526,045
	(2,144,354)	29,873	(122,901)	(1,159)	1,524	350,937	(144,827)	(2,030,907)
Loss carry-forward	542,781	(44,651)	-	-	(915)	183,045	(152,594)	527,666
Investment credits	537,040	(86,100)	-	-	(21,559)	-	-	429,381
	$(1,064,533)	$ (100,878)	$ (122,901)	$ (1,159)	$ (20,950)	$ 533,982	$ (297,421)	$(1,073,860)

	Balance at January 1	Recognized in Profit or Loss	Recognized in Other Comprehensive Income	Recognized in Equity	Exchange Differences	Acquisitions through Business Combinations	Disposal of Subsidiaries	Balance at December 31
	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)
Deferred tax assets (liabilities)								
Temporary differences								
Property, plant and equipment	$ (166,018)	$ (15,058)	$ -	$ -	$ 1,544	$ 779	$ (498)	$ (179,251)
Defined benefit obligation	38,411	(1,305)	4,080	-	36	7,583	-	48,805
FVTPL financial instruments	8,914	(4,811)	-	-	(3)	74	(402)	3,772
Others	42,328	22,238	(8,457)	(41)	(1,523)	4,061	(4,258)	54,348
	(76,365)	1,064	(4,377)	(41)	54	12,497	(5,158)	(72,326)
Loss carry-forward	19,330	(1,590)	-	-	(33)	6,519	(5,434)	18,792
Investment credits	19,125	(3,066)	-	-	(768)	-	-	15,291
	$ (37,910)	$ (3,592)	$ (4,377)	$ (41)	$ (747)	$ 19,016	$ (10,592)	$ (38,243)

f. Items for which no deferred tax assets have been recognized for loss carry-forward, investment credits and deductible temporary differences

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Loss carry-forward	$ 966,783	$ 1,497,056	$ 53,314
Investment credits	51,217	49,611	1,767
Deductible temporary differences	446,754	377,242	13,434
	$ 1,464,754	$ 1,923,909	$ 68,515

The unrecognized loss carry-forward will expire through 2030.

g. Information about unused loss carry-forward, unused investment credits, tax-exemption and other tax relief

As of December 31, 2020, the unused loss carry-forward comprised of:

Expiry Year	NT$	US$ (Note 4)
2021	$ 79,849	$ 2,844
2022	140,029	4,987
2023	192,607	6,859
2024	172,337	6,137
2025 and thereafter	1,439,900	51,279
	$ 2,024,722	$ 72,106

As of December 31, 2020, unused investment credits comprised of:

Tax Credit Source	Remaining Creditable Amount		Expiry Year
	NT$	US$ (Note 4)	
Purchase of machinery and equipment	$ 405,188	$ 14,430	2027
Others	73,804	2,628	2026 and thereafter
	$ 478,992	$ 17,058	

As of December 31, 2020, profits attributable to the following expansion projects were exempted from income tax for a 5-year period:

	Tax-exemption Period
Construction and expansion of ASE Test Inc. in 2009	2018.01-2022.12

Some China subsidiaries qualified as high technology enterprises were entitled to a reduced income tax rate of 15% and were eligible to deduct certain times of research and development expenses from their taxable income.

h. Unrecognized deferred tax liabilities associated with investments

As of December 31, 2019 and 2020, the taxable temporary differences associated with the investments in subsidiaries for which no deferred tax liabilities have been recognized were NT$27,139,427 thousand and NT$33,474,725 thousand (US$1,192,120 thousand), respectively.

i. Income tax assessments

The tax returns of the Company and its R.O.C. subsidiaries through 2018 have been examined by the tax authorities.

27. EARNINGS PER SHARE

The earnings and weighted average number of ordinary shares outstanding in the computation of earnings per share were as follows:

Net profit for the year

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Profit for the year attributable to owners of the Company	$ 26,220,721	$ 17,060,591	$ 26,970,580	$ 960,490
Effect of potentially dilutive ordinary shares:				
Employee share options issued by subsidiaries	(418,295)	(385,865)	(521,073)	(18,557)
Earnings used in the computation of diluted earnings per share	$ 25,802,426	$ 16,674,726	$ 26,449,507	$ 941,933

Weighted average number of ordinary shares outstanding (in thousand shares):

	For the Year Ended December 31		
	2018	2019	2020
Weighted average number of ordinary shares in computation of basic earnings per share	4,245,247	4,251,964	4,265,732
Effect of potentially dilutive ordinary shares:			
From employee share options	5,103	10,232	22,086

(Continued)

	For the Year Ended December 31		
	2018	2019	2020
From employees' compensation	779	570	815
Weighted average number of ordinary shares in computation of diluted earnings per share	4,251,129	4,262,766	4,288,633

(Concluded)

For the computation of earnings per ADS, the denominators were the half of the aforementioned weighted average outstanding shares (1 ADS represents 2 ordinary shares) while the numerators held constant.

The Group is able to settle the employees' compensation by cash or shares. The Group assumed that the entire amount of the compensation would be settled in shares and the resulting potential shares were included in the weighted average number of ordinary shares outstanding used in the computation of diluted earnings per share if the effect is dilutive. Such dilutive effect of the potential shares was included in the computation of diluted earnings per share until the board of directors approve the number of shares to be distributed to employees at their meeting in following year.

28. SHARE-BASED PAYMENT ARRANGEMENTS

a. Employee share option plans of the Company

In order to attract, retain and reward employees, the Company and its subsidiary, ASE, have their employee share option plans for the Group's full-time employees. As disclosed in Note 1, the Company assumed ASE's obligations of outstanding employee share option plans starting from April 30, 2018 and each share option represents the right to purchase 0.5 ordinary share of the Company when exercised. Under the terms of the plan, share options are granted at an exercise price equal to or not less than the closing price of the ordinary shares listed on the TWSE at the issue date. The right of those share options granted under the plan is valid for 10 years, non-transferable and exercisable at certain percentages subsequent to the second anniversary of the grant date. For any subsequent changes in the Company's capital structure or when cash dividend per ordinary share exceeds 1.5% of the market price per ordinary share, the exercise price is accordingly adjusted.

Information about the share option plans that ASE granted for the period from January 1, 2018 through April 29, 2018 was as follows:

	For the Period from January 1, 2018 through April 29, 2018	
	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (NT$)
Balance, beginning of period	135,961	$ 30.2
Options forfeited	(1,692)	36.3
Options exercised	(20,557)	26.0
Options transferred to the Company in accordance with the joint share exchange agreement	(113,712)	30.9
Balance, end of period	-	-

Information about the share option plans that the Company granted and assumed for the period from April 30, 2018 through December 31, 2018 and for the years ended December 31, 2019 and 2020 were as follows:

	For the Period from April 30, 2018 through December 31, 2018		For the Year Ended December 31			
			2019		2020	
	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (NT$)	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (NT$)	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (NT$)
Balance, beginning of period	-	$ -	183,814	$58.1	170,786	$57.0
Options assumed on April 30, 2018	56,856	61.7	-	-	-	-
Options granted	131,863	56.4	-	-	-	-
Options expired	-	-	-	-	(1,006)	40.8
Options forfeited	(1,582)	71.5	(4,214)	61.8	(3,949)	58.0
Options exercised	(3,323)	43.6	(8,814)	48.4	(21,064)	49.2
Balance, end of period	183,814	58.1	170,786	57.0	144,767	56.9
Options exercisable, end of period	36,354	58.1	33,822	63.5	67,388	61.4
Fair value of options granted (NT$)	$16.28-19.12		$ -		$ -	

The weighted average share prices at exercise dates of share options for the period from January 1, 2018 to April 29, 2018, the period from April 30, 2018 to December 31, 2018, and the year ended December 31, 2019 and 2020 were NT$41.0, NT$68.5, NT$69.3 and NT$68.5 (US$2.4), respectively.

Information about the outstanding share options that the Company granted and assumed at each balance sheet date was as follows:

	Range of Exercise Price Per Share (NT$)	Weighted Average Remaining Contractual Life (Years)
December 31, 2019		
ASE 4th share options	$ 40.8-45.2	0.5
ASE 5th share options	73.0	5.7
The Company 1st share options	54.4	8.9
December 31, 2020		
ASE 4th share options	45.2	0.3
ASE 5th share options	73.0	4.7
The Company 1st share options	52.9	7.9

b. Employee share option plans of subsidiaries

USIE

The terms of the plans issued by USIE were the same with those option plans previously granted by ASE.

Information about share options was as follows:

	For the Year Ended December 31					
	2018		2019		2020	
	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (US$)	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (US$)	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (US$)
Balance at January 1	25,556	$2.2	16,711	$2.1	8,349	$2.3
Options forfeited	-	-	-	-	(7)	2.9
Options exercised	(8,845)	2.2	(8,362)	2.0	(8,342)	2.3
Balance at December 31	16,711	2.1	8,349	2.3	-	-
Options exercisable, end of year	16,711	2.1	8,349	2.3	-	-

Information about USIE's outstanding share options at each balance sheet date was as follows:

December 31, 2019	Range of Exercise Price Per Share (US$)	Weighted Average Remaining Contractual Life (Years)
1st share options	$ 1.5	1.0
3rd share options	2.9	1.4

In 2018, 2019 and 2020, the Group's shareholdings in USIE decreased because USIE's share options were exercised. The transaction was accounted for as an equity transaction since the Group did not cease to have control over USIE and, as a result, capital surplus was decreased by NT$1,239,456 thousand, NT$981,078 thousand and NT$1,120,111 thousand (US$39,890 thousand) for the years ended December 31, 2018, 2019 and 2020, respectively and retained earnings was decreased by NT$392,447 (US$13,976 thousand) for the year ended December 31, 2020.

USISH

Under the share option plan issued in 2015 ("2015 share options"), each unit represents the right to purchase one ordinary share of USISH when exercised. The options are valid for 10 years, non-transferable and exercisable at certain percentages subsequent to the second anniversary of the grant date incorporated with certain performance conditions. For any subsequent changes in USISH's capital structure, the exercise price is accordingly adjusted.

In November 2019, USISH adopted the first share option plan ("2019 share options") and granted 17,167 thousand share options to its employees. Each unit represents the right to purchase one ordinary share of USISH when exercised. The options are valid for 3.0 years, 4.0 years and 5.0 years, respectively, and are exercisable at certain percentages within 12 months subsequent to the second, the third and the fourth anniversary of the grant date under the satisfaction of certain performance conditions within each respective vesting period. In the event that USISH increases share capital by capital surplus or by cash, or distributes share dividends or cash dividends, the exercisable share option units and the exercise price are accordingly adjusted.

In September 2020, USISH adopted the second share option plan ("2020 share options") and granted 1,140 thousand share options to its employees. The conditions of issued 2020 share options are the same as 2019 share options plan, except that the options are valid for 2.2 years, 3.2 years and 4.2 years, respectively, and with each respective vesting period of 1.2 years, 2.2 years and 3.2 years.

Information about share options was as follows:

	For the Year Ended December 31					
	2018		2019		2020	
	Number of Options (In Thousands)	Exercise Price Per Share (RMB)	Number of Options (In Thousands)	Exercise Price Per Share (RMB)	Number of Options (In Thousands)	Exercise Price Per Share (RMB)
Balance at January 1	22,341	$15.5	21,537	$15.5	35,077	$14.5
Options granted	-	-	17,167	13.3	1,140	21.7
Options forfeited	(804)	15.5	(463)	15.4	(636)	14.0
Options exercised	-	-	(3,164)	15.5	(4,315)	15.5
Balance at December 31	21,537	15.5	35,077	14.5	31,266	14.6
Options exercisable, end of year	12,884	15.5	13,694	15.5	13,416	15.5
Fair value of options granted (RMB)	-		$6.27-8.35		$7.03-8.93	

Information about USISH's outstanding share options at each balance sheet date was as follows:

	Range of Exercise Price Per Share (RMB)	Remaining Contractual Life (Years)
December 31, 2019		
2015 share options	$ 15.5	5.9
2019 share options	13.3	4.9
December 31, 2020		
2015 share options	15.5	4.9
2019 share options	13.3	3.9
2020 share options	21.7	3.9

c. Employee restricted share plans of subsidiaries

In November 2019, USISH adopted the first restricted share plan ("2019 restricted shares") and granted 6,156 thousand ordinary shares to its directors (excluding independent directors), supervisors and employees. In April 2020, the board of directors further resolved to grant 6,403 thousand ordinary shares instead, while other terms remain constant. The plan was of 3 phases starting from 2019 and each phase lasts for 1 year with a valid period of 4.5 years, 3.5 years and 2.5 years, respectively. Upon satisfaction of certain performance conditions in each phase, participants are entitled to subscribe a certain percentage of the total USISH's ordinary shares issued under the plan with a lock-up period of 1 year. The valid period may be early terminated or extended prior to one month of the expiration date depending on the conditions of ordinary shares granted. In the event that USISH increases share capital by capital surplus or by cash, or distributes share dividends or cash dividends, the exercise price is accordingly adjusted.

In September 2020, USISH adopted the second restricted share plan ("2020 restricted shares") and granted 425 thousand ordinary shares to its employees. The conditions of issued 2020 restricted shares are the same as 2019 restricted shares plan, except that the restricted shares are valid for 2 years and the ordinary shares that USISH would issue to participants for free are with a lock-up period of 1.3 year.

Information about restricted shares was as follows:

	For the Year Ended December 31			
	2019		2020	
	Number of Options (In Thousands)	Exercise Price Per Share (RMB)	Number of Options (In Thousands)	Exercise Price Per Share (RMB)
Balance at January 1	-	$ -	6,156	$ 13.3
Options granted	6,156	13.3	672	4.9
Options exercised	-	-	(1,281)	13.2
Balance at December 31	6,156	13.3	5,547	12.2
Options exercisable, end of year	-	-	-	-
Fair value of options granted (RMB)	$13.47		$18.55	

Information about USISH's outstanding restricted shares at each balance sheet date was as follows:

	Range of Exercise Price Per Share (RMB)	Remaining Contractual Life (Years)
December 31, 2019		
2019 restricted shares	13.3	4.3
December 31, 2020		
2019 restricted shares	13.2	3.3
2020 restricted shares	-	1.7

The Group's shareholdings in USISH decreased because the abovementioned share option plans and restricted share plan were exercised in 2019 and 2020. The transaction was accounted for as an equity transaction since the Group did not cease to have control over USISH and, as a result, capital surplus increased by NT$105,785 thousand in 2019 and NT$1,010,219 thousand (US$35,976 thousand) in 2020.

d. Fair value information

For the fair values at the grant date of USISH's 2019 and 2020 plans, the share options plans were measured by using the trinomial tree model, while the restricted shares plans were measured by using the Black-Scholes Option Pricing Model incorporating the effect of the lock-up period. The inputs to the models were as follows:

Share option plan

	2019 share options plan	2020 share options plan
Share price at the grant date	RMB15.84 per share	RMB21.55 per share
Exercise price	RMB13.34 per share	RMB21.65 per share
Expected volatility (%)	45.07-51.80	48.14-53.57
Expected lives (years)	3-5	2.2-4.2
Expected dividend yield	-	-
Risk free interest rate (%)	2.80-2.97	2.80-2.99

Restricted share plan

	2019 restricted shares plan	2019 restricted shares plan amended in 2020	2020 restricted shares plan
Share price at the grant date	RMB16.30 per share	RMB16.60 per share	RMB24.30 per share
Exercise price	RMB13.34 per share	RMB13.34 per share	(Note)
Expected volatility (%)	47.77	57.21	56.97
Lock-up periods (years)	1	1	1.3
Expected dividend yield	-	-	-
Risk free interest rate (%)	2.70	1.55	2.63

Note: The restricted share plan is to transfer ordinary shares for free upon satisfaction of certain performance conditions prior to the expiration.

Expected volatilities were based on the annualized volatilities of USISH's historical share prices.

For the years ended December 31, 2018, 2019 and 2020, employee benefits expense recognized on the aforementioned employee share option plans and the restricted share plans were NT$215,648 thousand, NT$871,699 thousand and NT$955,575 thousand (US$34,030 thousand), respectively.

29. BUSINESS COMBINATIONS

a. Subsidiaries acquired

	Principal Activity	Date of Acquisition	Proportion of Voting Equity Interests Acquired (%)	Consideration Transferred	
				NT$	US$ (Note 4)
SPIL	Engaged in the assembly, testing and turnkey services of integrated circuits	April 30, 2018	100.00	$ 168,440,585	
AMPI	Engaged in the manufacturing of integrated circuit	April 30, 2019	50.97	$ 250,000	
ASEEE	Engaged in the production of embedded substrate	April 26, 2019	51.00	$ -	

(Continued)

	Principal Activity	Date of Acquisition	Proportion of Voting Equity Interests Acquired (%)	Consideration Transferred NT$	US$ (Note 4)
USIPL	Engaged in the design and manufacturing of electronic components and new electronic applications	October 31, 2019	60.00	$ 313,057	
FAFG	Holding company and the group engaged in the design and manufacturing of electronic components	December 1, 2020	100.00	$ 12,829,372	$ 456,886

(Concluded)

b. Consideration Transferred

	SPIL NT$	AMPI NT$	ASEEE NT$	USIPL NT$	FAFG NT$	FAFG US$ (Note 4)
Cash	$168,440,585	$ 250,000	$ -	$ 313,057	$10,800,558	$ 384,635
Equity instrument issued	-	-	-	-	1,734,570	61,772
Contingent consideration arrangement	-	-	-	-	294,244	10,479
Fair value of identifiable net assets acquired	$168,440,585	$ 250,000	$ -	$ 313,057	$12,829,372	$ 456,886

In April, 2018, the Company acquired all issued and outstanding ordinary shares of SPIL in accordance with the joint share exchange agreement and had the control over SPIL. The investment in SPIL originally accounted for using the equity method was remeasured to the fair value at the acquisition date and the Group recognized a remeasurement gain of NT$7,421,408 thousand for the year ended December 31, 2018 (Note 25).

In April 2019, the Group's subsidiary, ASE Test, Inc., subscribed for 100,000 thousand ordinary shares of AMPI from its private placement with NT$250,000 thousand in cash. The percentage of the Group's ownership in AMPI then increased to 50.97% and, therefore, the Group obtained control over AMPI. The investment in ordinary shares of AMPI originally accounted for using the equity method was remeasured to the fair value at the acquisition date and the Group recognized remeasurement gain of NT$243,057 thousand under the line item of other gains and losses (Note 25).

In April 2019, ASE entered into a memorandum of understanding with TDK Corporation ("TDK") in relation to ASEEE that was incorporated by a joint venture agreement entered into by the Group and TDK. In addition to a reduction of one legal representative director of TDK, which resulted in that the Group obtained control over ASEEE starting from April 2019 and the investments in ASEEE originally accounted for using the equity method was remeasured to its fair value at the acquisition date with a remeasurement gain of NT$76,655 thousand under the line item of other gains and losses (Note 25), the memorandum of understanding set out that, after ASEEE offset its accumulated deficits against its capital in an amount of NT$1,147,595 thousand, ASE subscribed all of 150,000 thousand ordinary shares newly issued by ASEEE through its capital increase by cash in an amount of NT$1,500,000 thousand in May 2019 and then repurchased all of ASEEE's ordinary shares held by TDK in an amount of US$6,000 thousand in July 2019. As a result, the Group eventually held 100% of ownership in ASEEE (Note 31). Furthermore, ASE merged ASEEE in February 2020.

In October 2019, the Group's subsidiary, Universal Global Electronics Co., Ltd., acquired 60% shareholdings of USIPL with a total consideration based on independent professional appraisal reports.

In December 2020, the Group's subsidiary, USIFR, paid NT$10,800,558 thousand (equivalent to US$368,753 thousand) and the Group's subsidiary, USISH, issued its 25,940 thousand new ordinary shares to acquire 100% shareholdings of FAFG. In addition, according to the share purchase agreement, USIFR is obliged to pay an earn-out amount up to US$42,805 thousand in 2023 if FAFG's net profit in 2021 and 2022 reaches the predetermined target. In December 2020, USIFR deposited NT$294,244 thousand (equivalent to US$10,122 thousand) in advance to trust account. The consideration transferred was tentative as of December 31, 2020 because the fair values of the ordinary shares newly issued by USISH and the contingent consideration arrangement for the earn-out were still being determined.

c. Assets acquired and liabilities assumed at the date of acquisition

	SPIL	AMPI	ASEEE	USIPL	FAFG	
	NT$	NT$	NT$	NT$	NT$	US$ (Note 4)
Assets						
Cash and cash equivalents	$ 20,088,970	$ 349,496	$ 23,197	$ 108,718	$ 2,349,164	$ 83,660
Trade and other receivables	15,840,649	371,144	5,732	58,713	4,434,296	157,917
Inventories	5,693,644	403,887	11,033	229	4,763,237	169,631
Property, plant and equipment	81,985,622	683,207	1,361,572	525,048	1,730,783	61,637
Intangible assets	31,354,386	128,900	290,757	11,704	642,838	22,893
Others	24,945,922	237,766	317,888	99,112	1,798,564	64,051
Liabilities						
Trade and other payables	(19,755,598)	(224,295)	(133,278)	(217,887)	(4,575,720)	(162,953)
Borrowings and bonds payables	(24,157,174)	(951,519)	(1,371,395)	(190,737)	(356,417)	(12,693)
Others	(3,963,201)	(148,723)	(290,273)	(63,708)	(2,588,277)	(92,175)
Fair value of identifiable net assets acquired	$132,033,220	$ 849,863	$ 215,233	$ 331,192	$ 8,198,468	$ 291,968

A call option on the remaining 40% non-controlling interests of USIPL was stipulated in the equity transfer agreement. The Group recognized the call option under the line item of financial assets at FVTPL (Note 7) and exercised it in June 2020 (Note 31).

The initial accounting for the acquisition of FAFG was incomplete as of December 31, 2020 and the Group reported in the financial statements provisional amounts for assets acquired and liabilities assumed.

d. Non-controlling interest

Non-controlling interests of SPIL were measured at fair value at the acquisition date by using market approach based on the valuation multiples of comparable companies and the discount rate for lack of marketability. The significant unobservable inputs is the discount rate for lack of marketability of 25%.

Non-controlling interests of AMPI and ASEEE were measured at their proportionate share of the fair value of AMPI's and ASEEE's identifiable net assets, respectively.

Non-controlling interests of USIPL were measured at fair value at the acquisition date by using market approach incorporating transaction prices of comparable companies and the discount rate for lack of control. The significant unobservable inputs is the discount rate for lack of control of 31%.

Non-controlling interests of FAFG were measured at its proportionate share of the fair value of FAFG's identifiable net assets. As aforementioned, such non-controlling interests measurements were tentative as of December 31, 2020.

e. Goodwill recognized on acquisitions

	SPIL	AMPI	ASEEE	USIPL	FAFG	
	NT$	NT$	NT$	NT$	NT$	US$ (Note 4)
Consideration transferred	$168,440,585	$ 250,000	$ -	$ 313,057	$ 12,829,372	$ 456,887
Add: Fair value of investments previously owned	-	315,925	117,609	-	-	-
Add: Non-controlling interests	3,582,866	416,716	105,464	142,494	(5,635)	(201)
Less: Fair value of identifiable net assets acquired	(132,033,220)	(849,863)	(215,233)	(331,192)	(8,198,468)	(291,968)
Goodwill recognized on acquisition	$ 39,990,231	$ 132,778	$ 7,840	$ 124,359	$ 4,625,269	$ 164,718

The goodwill from acquisitions mainly represents the control premium. In addition, the consideration paid for acquisitions effectively included amounts attributed to the benefits of expected synergies, such as revenue growth and future market expansions. These benefits are not recognized separately from goodwill because they do not meet the recognition criteria for identifiable intangible assets.

The goodwill recognized on acquisitions is not expected to be deductible for tax purpose.

As of December 31, 2020, the Group has not completed the identification of the difference between the cost of the investment and the Group's share of the net fair value of FAFG's identifiable assets and liabilities and, as a result, the difference was recognized as goodwill provisionally. The group continuously review the abovementioned items during the measuring period. If there is any new information obtained within one year from the acquisition date about the facts and circumstances that existed as of the acquisition date, for which the abovementioned provisional amounts recognized at the acquisition date should be adjusted or additional provision should be recognized, the accounting for the business combination will be retrospectively adjusted.

f. Net cash outflow (inflow) on acquisition of subsidiaries

	SPIL	AMPI	ASEEE	USIPL	FAFG	
	NT$	NT$	NT$	NT$	NT$	US$ (Note 4)
Consideration paid in cash	$168,440,585	$ 250,000	$ -	$ 313,057	$11,094,802	$ 395,114
Less: Payable for consideration representing the ordinary shares originally held by ASE	(53,109,760)	-	-	-	-	-
Less: Cash and cash equivalent acquired	(20,088,970)	(349,496)	(23,197)	(108,718)	(2,349,164)	(83,660)
Net cash outflow (inflow) on acquisition of subsidiaries	$ 95,241,855	$ (99,496)	$ (23,197)	$ 204,339	$ 8,745,638	$ 311,454

g. Impact of acquisitions on the results of the Group

The results of operations since the acquisition date were included in the consolidated statements of comprehensive income and were as follows:

	SPIL (For the Period from April 30, 2018 through December 31, 2018)	AMPI (For the Period from April 30, 2019 through December 31, 2019)	ASEEE (For the Period from April 26, 2019 through December 31, 2019)	USIPL (For the Period from October 31, 2019 through December 31, 2019)	FAFG (For the Period from December 1, 2020 through December 31, 2020)	
	NT$	NT$	NT$	NT$	NT$	US$ (Note 4)
Operating revenue	$ 61,247,727	$ 704,243	$ (1,159)	$ 39,080	$ 2,043,440	$ 72,772
Net profit (loss)	$ 7,627,382	$ (217,163)	$ (469,598)	$ (11,995)	$ 91,179	$ 3,247

Had SPIL, AMPI, ASEEE, USIPL and FAFG business combinations been in effect at the beginning of each annual reporting period and the investments originally accounted for using the equity method been remeasured to their fair value as of January 1 of each respective annual reporting period, the Group's operating revenues and profit for the year would have been NT$397,261,461 thousand and NT$25,687,447 thousand for the year ended December 31, 2018, respectively, NT$413,782,708 thousand and NT$18,030,506 thousand for the year ended December 31, 2019, respectively, and NT$497,146,285 thousand (US$17,704,640 thousand) and NT$29,707,746 thousand (US$1,057,968 thousand) for the year ended December 31, 2020, respectively. This pro-forma information is for illustrative purposes only and is not necessarily an indication of the operating revenue and results of operations of the Group that actually would have been achieved had the acquisition been completed at the beginning of each annual reporting period, nor is it intended to be a projection of future results.

In determining the pro-forma operating revenue and profit for the period had each subsidiary been acquired at the beginning of each respective annual reporting period, the Group has calculated the depreciation of property, plant and equipment and the amortization of intangible assets acquired on the basis of the fair values at the initial accounting for the business combination rather than the carrying amounts recognized in the respective pre-acquisition financial statements.

30. DISPOSAL OF SUBSIDIARIES

The board of directors of the Group's subsidiary, SPIL (Cayman) Holding Limited, resolved in September 2020 to dispose its 100% shareholdings in SF to Shenzhen Hiwin System Limited with a consideration of RMB966,000 thousand. The disposal was completed in October 2020 and the control over SF passed to the acquirer.

a. Analysis of assets and liabilities on the date control was lost

	NT$	US$ (Note 4)
Current Assets		
Cash and cash equivalent	$ 200,347	$ 7,135
Trade receivables, net	318,425	11,340
Inventories	239,865	8,542
Other current assets	111,913	3,985
Non-Current Assets		
Property, plant and equipment	7,546,413	268,747
Right-of-use assets	812,861	28,948
Deferred tax assets	298,217	10,620
Other non-current assets	43,482	1,548
Current Liabilities		
Trade and other payables	(1,739,330)	(61,942)
Current portion of long-term borrowings	(1,746,000)	(62,179)
Other current liabilities	(24,564)	(875)

(Continued)

	NT$	US$ (Note 4)
Non-Current Liabilities		
Long-term borrowings	$ (2,947,682)	$ (104,974)
Deferred tax liabilities	(796)	(28)
Net assets disposed of	$ 3,113,151	$ 110,867

(Concluded)

b. Gain on disposal of subsidiaries

	NT$	US$ (Note 4)
Total consideration (paid in cash)	$ 4,078,844	$ 145,258
Net assets disposed of	(3,113,151)	(110,867)
Reclassification of accumulated exchange difference from equity to profit or loss due to the loss of control over SF	(162,940)	(5,803)
Gain on disposal of SF	$ 802,753	$ 28,588

c. Net cash inflow on disposals of subsidiaries

	NT$	US$ (Note 4)
Consideration received in cash and cash equivalents	$ 4,078,844	$ 145,258
Less: Cash and cash equivalent balances disposed of	(200,347)	(7,135)
Other receivables (the outstanding receivables of consideration, net of relevant expenditure)	(161,458)	(5,750)
	$ 3,717,039	$ 132,373

31. EQUITY TRANSACTION WITH NON-CONTROLLING INTERESTS

a. USIE

In July 2019, the shareholders' meeting of USIE resolved to repurchase its own outstanding 7,378 thousand ordinary shares at US$14.30 per share, and, as a result, the Group's shareholdings in USIE increased from 95.42% to 98.72%. The transaction was accounted for as an equity transaction since the transaction did not change the Group's control over USIE and the Group capital surplus decreased by NT$1,625,448 thousand in 2019. In July 2019, the board of directors of USIE resolved July 23, 2019 was the record date for capital reduction and then the repurchased ordinary shares were subsequently cancelled.

In September 2020, the shareholders' meeting of USIE resolved to repurchase its own outstanding 10,308 thousand ordinary shares at US$19.47 per share, and, as a result, the Group's shareholdings in USIE increased from 95% to 99.62%. The transaction was accounted for as an equity transaction since the transaction did not change the Group's control over USIE and the Group decreased capital surplus and retained earnings by NT$780,533 thousand (US$27,797 thousand) and NT$2,760,175 thousand (US$98,297 thousand), respectively, in 2020. In September 2020, the board of directors of USIE resolved September 15, 2020 was the record date for capital reduction and then the repurchased ordinary shares were subsequently cancelled.

b. ASEN and SZ

In July 2019, ASE's board of directors resolved to acquire 30% shareholdings of ASEN from Beijing Unis Capital Management Co., Ltd. at US$97,748 thousand by its subsidiary, J&R Holding. In addition, in July 2019, SPIL's board of directors also resolved to acquire 30% shareholdings of SZ from Tibet Zixi Electronic Technology Co., Ltd. at US$162,870 thousand by its subsidiary, SPIL (Cayman) Holding Limited. The aforementioned transactions will result the Group's shareholdings of ASEN and SZ both to increase from 70% to 100% and, therefore, both transactions will be accounted for as an equity transaction since the Group will not cease to have control over the subsidiaries. The Group recognized a decrease in capital surplus by NT$2,650,950 thousand in 2019.

c. USIPL

In May 2020, the board of directors of Universal Global Electronics Co., Ltd. resolved to acquire 40% shareholdings of USIPL from Chung Hong Electronics (Suzhou) Co., Ltd. at RMB24,500 thousand. The aforementioned transaction resulted the Group's shareholdings in USIPL to increase from 60% to 100%, and such transactions were accounted for as an equity transaction since the transaction did not change the Group's control over USIPL. The Group recognized a decrease in capital surplus by NT$13,502 thousand (US$481 thousand) in 2020.

d. Others

In July 2018, UGTW's board of directors approved to acquire the outstanding ordinary shares of USI at NT$18 per ordinary shares. In the first quarter of 2019, UGTW completed the acquisition and recognized an increase in capital surplus by NT$142 thousand.

USISH repurchased its own 13,037 thousand outstanding ordinary shares during year ended December 31, 2019 and, as a result, the Group's shareholdings of USISH increased from 74.6% to 77.7%. The transaction was accounted for as an equity transaction since the Group did not cease to have control over USISH and capital surplus was decreased by NT$334,719 thousand.

As disclosed in Note 29, ASE purchased ASEEE's ordinary shares through its capital increase in May 2019 and then repurchased all of ASEEE's ordinary shares held by TDK in July 2019. As a result, the Group eventually held 100% of ownership in ASEEE and capital surplus was decreased by NT$128,805 thousand.

32. CASH FLOWS INFORMATION

a. Non-cash investing activities

In addition to other notes, the Group entered into the following investing activities which include both cash and non-cash items for the years ended December 31, 2018, 2019 and 2020:

	For the Year Ended December 31			
	2018	**2019**	**2020**	
	NT$	**NT$**	**NT$**	**US$ (Note 4)**
Payments for property, plant and equipment				
Purchase of property, plant and equipment	$ 39,092,238	$ 63,073,887	$ 59,024,201	$ 2,102,001
Increase in other non-current assets	402,255	68,560	78,291	2,788

(Continued)

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Decrease (increase) in other payables	$ 1,942,259	$ (6,254,579)	$ 3,029,162	$ 107,876
Capitalized borrowing costs	(50,309)	(77,715)	(54,208)	(1,930)
	$ 41,386,443	$ 56,810,153	$ 62,077,446	$ 2,210,735
Proceeds from disposal of property, plant and equipment				
Consideration from disposal of property, plant and equipment	$ 1,133,435	$ 441,444	$ 5,184,925	$ 184,648
Decrease (increase) in other receivables	(5,791)	7,495	(735,812)	(26,204)
	$ 1,127,644	$ 448,939	$ 4,449,113	$ 158,444
Payments for investment properties				
Purchase of investment properties	$ 125,853	$ 2,532	$ -	$ -
Capitalized borrowing costs	(89)	-	-	-
	$ 125,764	$ 2,532	$ -	$ -
Payments for other intangible assets				
Purchase of other intangible assets	$ 537,659	$ 1,350,908	$ 982,655	$ 34,995
Decrease in other payables	40,106	60,160	-	-
	$ 577,765	$ 1,411,068	$ 982,655	$ 34,995

(Concluded)

b. Changes in liabilities arising from financing activities

For the year ended December 31, 2018

	Short-term Borrowings NT$	Bonds Payable NT$	Long-term Borrowings NT$	Total NT$
Balance at January 1, 2018	$ 17,962,471	$ 23,142,780	$ 35,406,628	$ 76,511,879
Net financing cash flows	22,327,813	(6,185,600)	85,510,959	101,653,172
Non-cash changes				
Acquisition through business combinations	3,619,858	4,457,191	16,080,125	24,157,174
Bonds conversion	-	(4,457,191)	-	(4,457,191)
Reclassification for the application of IFRS 9	(1,301,994)	-	-	(1,301,994)
Amortization of issuance cost	-	28,756	188,217	216,973
Effects of foreign currency exchange	655,321	-	712,400	1,367,721
Balance at December 31, 2018	$ 43,263,469	$ 16,985,936	$137,898,329	$198,147,734

For the year ended December 31, 2019

	Short-term Borrowings (including financial liabilities for hedging) NT$	Bonds Payable NT$	Long-term Borrowings NT$	Lease Liabilities NT$	Total NT$
Balance at January 1, 2019	$ 47,163,103	$ 16,985,936	$ 137,898,329	$ 6,084,729	$ 208,132,097
Net financing cash flows	(4,683,142)	19,279,033	1,144,731	(636,556)	15,104,066
Interest under operating activities	-	-	-	1,766	1,766
Non-cash changes					
Lease liabilities	-	-	-	536,216	536,216
Acquisition through business combinations (Note 29)	656,820	245,664	1,523,968	81,649	2,508,101
Amortization of issuance cost	-	11,522	189,151	-	200,673
Lease modifications	-	-	-	(239,321)	(239,321)
Short-term borrowings transferred to long-term borrowings	(1,499,000)	-	1,499,000	-	-
Effects of foreign currency exchange	(1,065,452)	-	(1,176,581)	(19,559)	(2,261,592)
Balance at December 31, 2019	$ 40,572,329	$ 36,522,155	$ 141,078,598	$ 5,808,924	$ 223,982,006

For the year ended December 31, 2020

	Short-term Borrowings (including financial liabilities for hedging) NT$	Bonds Payable NT$	Long-term Borrowings (including financial liabilities for hedging) NT$	Lease Liabilities NT$	Total NT$
Balance at January 1, 2020	$ 40,572,329	$ 36,522,155	$ 141,078,598	$ 5,808,924	$223,982,006
Net financing cash flows	(1,502,323)	19,717,149	(26,500,139)	(844,357)	(9,129,670)
Interest under operating activities	-	-	-	111	111
Rent expense under operating activities	-	-	-	(7,729)	(7,729)
Non-cash changes					
Lease liabilities	-	-	-	584,642	584,642
Amortization of issuance cost	-	14,250	156,982	-	171,232
Lease modifications	-	-	-	(289,687)	(289,687)
Short-term borrowings transferred to long-term borrowings	(3,850,000)	-	3,850,000	-	-
Adjustments for government subsidy	-	-	41,650	-	41,650
Acquisition of subsidiaries (Note 29)	356,417	-	-	633,606	990,023
Disposal of subsidiaries (Note 30)	-	-	(4,693,682)	(670)	(4,694,352)
Effects of foreign currency exchange	(978,565)	-	(1,542,685)	(9,010)	(2,530,260)
Balance at December 31, 2020	$ 34,597,858	$ 56,253,554	$ 112,390,724	$ 5,875,830	$ 209,117,966

	Short-term Borrowings (including financial liabilities for hedging) US$ (Note 4)	Bonds Payable US$ (Note 4)	Long-term Borrowings (including financial liabilities for hedging) US$ (Note 4)	Lease Liabilities US$ (Note 4)	Total US$ (Note 4)
Balance at January 1, 2020	$ 1,444,883	$ 1,300,647	$ 5,024,168	$ 206,871	$ 7,976,569
Net financing cash flows	(53,502)	702,178	(943,737)	(30,070)	(325,131)
Interest under operating activities	-	-	-	4	4
Rent expense under operating activities	-	-	-	(275)	(275)
Non-cash changes					
Lease liabilities	-	-	-	20,821	20,821
Amortization of issuance cost	-	507	5,591	-	6,098
Lease modifications	-	-	-	(10,316)	(10,316)

(Continued)

	Short-term Borrowings (including financial liabilities for hedging) US$ (Note 4)	Bonds Payable US$ (Note 4)	Long-term Borrowings (including financial liabilities for hedging) US$ (Note 4)	Lease Liabilities US$ (Note 4)	Total US$ (Note 4)
Short-term borrowings transferred to long-term borrowings	$ (137,108)	$ -	$ 137,108	$ -	$ -
Adjustments for government subsidy	-	-	1,483	-	1,483
Acquisition of subsidiaries (Note 29)	12,693	-	-	22,564	35,257
Disposal of subsidiaries (Note 30)	-	-	(167,154)	(24)	(167,178)
Effects of foreign currency exchange	(34,849)	-	(54,939)	(322)	(90,110)
Balance at December 31, 2020	$ 1,232,117	$ 2,003,332	$ 4,002,520	$ 209,253	$ 7,447,222

(Concluded)

33. CAPITAL MANAGEMENT

The capital structure of the Group consists of debt and equity. The Group manages its capital to ensure that entities in the Group will be able to continue as going concerns while maximizing the return to shareholders through the optimization of the debt and equity balance. Key management personnel of the Group periodically reviews the cost of capital and the risks associated with each class of capital. In order to balance the overall capital structure, the Group may adjust the amount of dividends paid to shareholders, the number of new shares issued or repurchased, and the amount of new debt issued or existing debt redeemed.

The Group is not subject to any externally imposed capital requirements except those discussed in Note 20.

34. FINANCIAL INSTRUMENTS

a. Fair value of financial instruments that are not measured at fair value

1) Fair value of financial instruments not measured at fair value but for which fair value is disclosed

Except bonds payable measured at amortized cost, the management considered that the carrying amounts of financial assets and financial liabilities not measured at fair value approximate their fair values. The carrying amounts and fair value of bonds payable as of December 31, 2019 and 2020 were as follows:

	Carrying Amount		Fair Value	
	NT$	US$ (Note 4)	NT$	US$ (Note 4)
December 31, 2019	$ 36,522,155		$ 36,766,117	
December 31, 2020	56,253,554	$ 2,003,332	56,448,769	$ 2,010,284

2) Fair value hierarchy

The aforementioned fair value hierarchy of bonds payable was Level 3 which was determined based on discounted cash flow analysis with the applicable yield curve for the duration. The significant unobservable inputs is discount rates that reflected the credit risk.

b. Fair value of financial instruments that are measured at fair value on a recurring basis

1) Fair value hierarchy

	Level 1	Level 2	Level 3	Total
	NT$	NT$	NT$	NT$
December 31, 2019				
Financial assets at FVTPL				
Derivative financial assets				
Forward exchange contracts	$ -	$ 104,308	$ -	$ 104,308
Swap contracts	-	56,561	-	56,561
Call option	-	-	24,556	24,556
Non-derivative financial assets				
Quoted ordinary shares	3,460,123	-	-	3,460,123
Open-end mutual funds	662,290	-	-	662,290
Private-placement funds	-	-	603,718	603,718
Unquoted preferred shares	-	-	377,440	377,440
	$ 4,122,413	$ 160,869	$ 1,005,714	$ 5,288,996
Financial assets at FVTOCI				
Investments in equity instruments				
Unquoted ordinary shares	$ -	$ -	$ 565,028	$ 565,028
Unquoted preferred shares	-	-	158,718	158,718
Limited partnership	-	-	32,157	32,157
Investments in debt instruments				
Unsecured subordinate corporate bonds	-	-	1,014,872	1,014,872
Trade receivables, net	-	-	2,029,690	2,029,690
	$ -	$ -	$ 3,800,465	$ 3,800,465
Financial liabilities at FVTPL				
Derivative financial liabilities				
Swap contracts	$ -	$ 862,581	$ -	$ 862,581
Forward exchange contracts	-	110,990	-	110,990
	$ -	$ 973,571	$ -	$ 973,571

	Level 1		Level 2		Level 3		Total	
	NT$	US$ (Note 4)	NT$	US$ (Note 4)	NT$	US$ (Note 4)	NT$	US$ (Note 4)
December 31, 2020								
Financial assets at FVTPL								
Derivative financial assets								
Forward exchange contracts	$ -	$ -	$ 122,511	$ 4,363	$ -	$ -	$ 122,511	$ 4,363
Swap contracts	-	-	99,312	3,537	-	-	99,312	3,537
Non-derivative financial assets								
Quoted ordinary shares	4,064,438	144,745	-	-	-	-	4,064,438	144,745
Private-placement funds	-	-	-	-	1,124,754	40,055	1,124,754	40,055
Unquoted preferred shares	-	-	-	-	385,440	13,726	385,440	13,726
Open-end mutual funds	339,338	12,085	-	-	-	-	339,338	12,085
	$ 4,403,776	$ 156,830	$ 221,823	$ 7,900	$ 1,510,194	$ 53,781	$ 6,135,793	$ 218,511
Financial assets at FVTOCI								
Investments in equity instruments								
Unquoted ordinary shares	$ -	$ -	$ -	$ -	$ 567,377	$ 20,206	$ 567,377	$ 20,206
Unquoted preferred shares	-	-	-	-	151,329	5,389	151,329	5,389
Limited partnership	-	-	-	-	9,692	345	9,692	345
Investments in debt instruments								
Unsecured subordinate corporate bonds	-	-	-	-	1,012,736	36,066	1,012,736	36,066
Trade receivables, net	-	-	-	-	626,413	22,308	626,413	22,308
	$ -	$ -	$ -	$ -	$ 2,367,547	$ 84,314	$ 2,367,547	$ 84,314
Financial liabilities at FVTPL								
Derivative financial liabilities								
Swap contracts	$ -	$ -	$ 1,448,972	$ 51,602	$ -	$ -	$ 1,448,972	$ 51,602
Target redemption forward contracts	-	-	79,216	2,821	-	-	79,216	2,821
Forward exchange contracts	-	-	9,020	321	-	-	9,020	321
	$ -	$ -	$ 1,537,208	$ 54,744	$ -	$ -	$ 1,537,208	$ 54,744

For the financial assets and liabilities that were measured at fair value on a recurring basis, there were no transfers between Level 1 and Level 2 of the fair value hierarchy during the years ended December 31, 2019 and 2020.

2) Reconciliation of Level 3 fair value measurements of financial assets

For the year ended December 31, 2019

Financial Assets	Financial Assets at FVTPL Equity Instruments	Financial Assets at FVTOCI Equity Instruments	Financial Assets at FVTOCI Debt Instruments	Total
	NT$	NT$	NT$	NT$
Balance at January 1	$ 475,123	$ 580,399	$ 1,016,924	$ 2,072,446
Recognized in profit or loss	3,431	-	-	3,431
Recognized in other comprehensive income				
Included in unrealized losses on financial assets at FVTOCI	-	(216,121)	(2,052)	(218,173)
Effects of foreign currency exchange	(14,368)	(5,695)	-	(20,063)
Net increase in trade receivables	-	-	3,171,205	3,171,205
Trade receivables factoring	-	-	(1,141,515)	(1,141,515)
Purchases	541,528	409,985	-	951,513
Disposals	-	(12,665)	-	(12,665)
Balance at December 31	$ 1,005,714	$ 755,903	$ 3,044,562	$ 4,806,179

For the year ended December 31, 2020

Financial Assets	Financial Assets at FVTPL Equity Instruments	Financial Assets at FVTPL Debt Instruments	Financial Assets at FVTOCI Equity Instruments	Financial Assets at FVTOCI Debt Instruments	Total
	NT$	NT$	NT$	NT$	NT$
Balance at January 1	$ 1,005,714	$ -	$ 755,903	$3,044,562	$ 4,806,179
Recognized in profit or loss	(17,941)	-	-	-	(17,941)
Recognized in other comprehensive income					
Included in unrealized losses on financial assets at FVTOCI	-	-	(149,856)	(2,136)	(151,992)
Effects of foreign currency exchange	(15,455)	-	(15,562)	-	(31,017)
Net increase in trade receivables	-	370,110	-	5,635,706	6,005,816
Trade receivables factoring	-	(370,110)	-	(7,038,983)	(7,409,093)
Purchases	893,234	-	259,168	-	1,152,402
Disposals	(329,370)	-	(121,255)	-	(450,625)
Exercise of call option	(25,988)	-	-	-	(25,988)
Balance at December 31	$ 1,510,194	$ -	$ 728,398	$1,639,149	$ 3,877,741

Financial Assets	Financial Assets at FVTPL Equity Instruments	Financial Assets at FVTPL Debt Instruments	Financial Assets at FVTOCI Equity Instruments	Financial Assets at FVTOCI Debt Instruments	Total
	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)
Balance at January 1	$ 35,816	$ -	$ 26,920	$ 108,424	$ 171,160
Recognized in profit or loss	(639)	-	-	-	(639)
Recognized in other comprehensive income					
Included in unrealized losses on financial assets at FVTOCI	-	-	(5,337)	(76)	(5,413)
Effects of foreign currency exchange	(550)	-	(555)	-	(1,105)
Net increase in trade receivables	-	13,181	-	200,702	213,883
Trade receivables factoring	-	(13,181)	-	(250,676)	(263,857)
Purchases	31,810	-	9,230	-	41,040
Disposals	(11,730)	-	(4,318)	-	(16,048)
Exercise of call option	(926)	-	-	-	(926)
Balance at December 31	$ 53,781	$ -	$ 25,940	$ 58,374	$ 138,095

3) Valuation techniques and assumptions applied for the purpose of measuring fair value

a) Valuation techniques and inputs applied for the purpose of measuring Level 2 fair value measurement

Financial Instruments	Valuation Techniques and Inputs
Derivatives - swap contracts and forward exchange contracts	Discounted cash flows - Future cash flows are estimated based on observable forward exchange rates at balance sheet dates and contract forward exchange rates, discounted at rates that reflected the credit risk of various counterparties.
Target redemption forward contracts	Valuation based on the spot exchange rate on the valuation date, the exercise price, the volatility in exchange rate, the contract period and the quoted risk free interest rate during the contract period.

b) Valuation techniques and inputs applied for the purpose of measuring Level 3 fair value measurement

The fair value of unquoted ordinary shares, unquoted preferred shares, limited partnership and private-placement funds were determined by using market approach and asset-based approach. The significant unobservable inputs were the discount rates for lack of marketability of 10% to 30%. If the discount rates for lack of marketability to the valuation model increased by 1% to reflect reasonably possible alternative assumptions while all other variables held constant, the fair value of the abovementioned investments would have decreased approximately by NT$7,200 thousand and NT$9,700 thousand (US$345 thousand) as of December 31, 2019 and 2020, respectively.

The fair values of the unsecured subordinate corporate bonds were determined using income approach based on a discounted cash flow analysis. The significant unobservable input was the discount rate that reflects the credit risk of the counterparty. If the discount rate increased by 0.1% while all other variables held constant, the fair value of the bonds would have decreased approximately by NT$6,000 thousand and NT$5,000 thousand (US$178 thousand) as of December 31, 2019 and 2020, respectively.

The fair value of accounts receivables measured at FVTOCI are determined based on the present value of future cash flows that reflect the credit risk of counterparties. Since the discount effect was not significant, the Group measured its fair value by using the nominal values.

The fair value of the call option was determined using Black-Scholes Options Pricing Model, of which the significant unobservable input was the discount rate for lack of marketability of 20%. If the discount rate increased by 1% while all other variables held constant, the fair value of the call option would have decreased approximately by NT$855 thousand as of December 31, 2019.

c. Categories of financial instruments

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Financial assets			
FVTPL			
Mandatorily at FVTPL	$ 5,288,996	$ 6,135,793	$ 218,511
Measured at amortized cost (Note 1)	139,668,804	147,521,583	5,253,618
FVTOCI			
Equity instruments	755,903	728,398	25,940
Debt instruments	1,014,872	1,012,736	36,066
Trade receivables, net	2,029,690	626,413	22,308
Financial liabilities			
FVTPL			
Held for trading	973,571	1,537,208	54,744
Financial liabilities for hedging	3,233,301	11,188,244	398,442
Measured at amortized cost (Note 2)	310,187,110	304,737,749	10,852,485

Note 1: The balances included financial assets measured at amortized cost which comprised cash and cash equivalents, trade and other receivables and other financial assets.

Note 2: The balances included financial liabilities measured at amortized cost which comprised short-term borrowings, trade and other payables, bonds payable and long-term borrowings.

d. Financial risk management objectives and policies

The derivative instruments used by the Group were to mitigate risks arising from ordinary business operations. All derivative transactions entered into by the Group were designated as either hedging or trading. Derivative transactions entered into for hedging purposes must hedge risk against fluctuations in foreign exchange rates and interest rates arising from operating activities. The currencies and the amount of derivative instruments held by the Group must match its hedged assets and liabilities denominated in foreign currencies.

The Group's risk management department monitored risks to mitigate risk exposures, reported unsettled position, transaction balances and related gains or losses to the Group's chief financial officer on monthly basis.

1) Market risk

The Group's activities exposed it primarily to the financial risks of changes in foreign currency exchange rates and interest rates. Gains or losses arising from fluctuations in foreign currency exchange rates of a variety of derivative financial instruments were approximately offset by those of hedged items. Interest rate risk was not significant due to the cost of capital was expected to be fixed.

There had been no change to the Group's exposure to market risks or the manner in which these risks were managed and measured.

a) Foreign currency exchange rate risk

The Group had sales and purchases as well as financing activities denominated in foreign currency which exposed the Group to foreign currency exchange rate risk. The Group entered into a variety of derivative financial instruments to hedge foreign currency exchange rate risk to minimize the fluctuations of assets and liabilities denominated in foreign currencies.

The carrying amounts of the Group's foreign currency denominated monetary assets and liabilities (including those eliminated upon consolidation) as well as derivative instruments which exposed the Group to foreign currency exchange rate risk at each balance sheet date are presented in Note 39.

The Group was mainly subject to the impact from the exchange rate fluctuation in US$, JPY and HKD against NT$ or RMB. 1% fluctuation is used when reporting foreign currency exchange rate risk internally to key management personnel and represents management's assessment of the reasonably possible change in foreign currency exchange rates. The sensitivity analysis included financial assets and liabilities and inter-company receivables and payables within the Group. The changes in profit before income tax due to a 1% change in US$, JPY, and HKD against NT$ and RMB would be NT$129,000 thousand, NT$82,000 thousand and NT$35,000 thousand (US$1,246 thousand) for the years ended December 31, 2018, 2019 and 2020, respectively. Hedging contracts and hedged items have been taken into account while measuring the changes in profit before income tax. The abovementioned sensitivity analysis mainly focused on the foreign currency monetary items at each balance sheet date. As the period-end exposure did not reflect the exposure for the years ended December 31, 2018, 2019 and 2020, the abovementioned sensitivity analysis was unrepresentative of those respective years.

Hedge accounting

The Group's hedging strategy was to lift borrowings denominated in foreign currencies to avoid exchange rate exposure from its investments in equity instruments denominated in foreign currencies (recognized under the line item of financial assets at FVTPL) and net investment in foreign subsidiary, USIFR, which has EUR as its functional currency. Those transactions were designated as fair value hedges and a hedge of net investment in foreign operation, respectively. Hedge adjustments were made to totally offset the foreign exchange gains or losses from those equity instruments denominated in foreign currencies and foreign operations when they were evaluated based on the exchange rates on each balance sheet date.

The hedge ineffectiveness in these hedging relationships arose from the material difference between the notional amounts of borrowings denominated in foreign currencies and the original investments in equity instruments denominated in foreign currencies and net investment in foreign operations. No other sources of ineffectiveness is expected to emerge from these hedging relationships.

December 31, 2019

Hedging Instrument/ Hedged Items	Line item in Balance sheet	Carrying Amount Asset NT$	Carrying Amount Liability NT$
Fair value hedge			
Borrowings denominated in foreign currencies/ Financial assets at FVTPL	Financial liabilities for hedging - current	$ -	$ 3,233,301

Hedging Instrument/ Hedged Item	Change in Value Used for Calculating Hedge Ineffectiveness		Accumulated Gains or Losses in Other Equity		Carrying Amount of Hedged Item in Fair Value Hedge	Accumulated Amount of Fair Value Hedge Adjustments on Hedged Item
	Hedging Instrument NT$	Hedged Item NT$	Continuing Hedges NT$	Hedge Accounting No Longer Applied NT$	Asset NT$	Asset NT$
Fair value hedge						
Borrowings denominated in foreign currencies/ Financial assets at FVTPL	$ 71,743	$ (71,743)	$ -	$ -	$ 2,791,574	$ 15,625

December 31, 2020

Hedging Instrument/ Hedged Items	Line item in Balance sheet	Carrying Amount Asset NT$	Carrying Amount Asset US$ (Note 4)	Carrying Amount Liability NT$	Carrying Amount Liability US$ (Note 4)
Fair value hedge					
Borrowings denominated in foreign currencies/ Financial assets at FVTPL	Financial liabilities for hedging - current	$ -	$ -	$ 3,307,018	$ 117,771
Hedge of net investment in foreign operation	Financial liabilities for hedging - current	-	-	1,970,307	70,168
Hedge of net investment in foreign operation	Financial liabilities for hedging - non-current	-	-	5,910,919	210,503

Hedging Instrument/ Hedged Item	Change in Value Used for Calculating Hedge Ineffectiveness		Accumulated Gains or Losses in Other Equity		Carrying Amount of Hedged Item in Fair Value Hedge	Accumulated Amount of Fair Value Hedge Adjustments on Hedged Item
	Hedging Instrument NT$	Hedged Item NT$	Continuing Hedges NT$	Hedge Accounting No Longer Applied NT$	Asset NT$	Asset NT$
Fair value hedge						
Borrowings denominated in foreign currencies/ Financial assets at FVTPL	$ 157,842	$ (157,842)	$ -	$ -	$ 2,859,132	$ (142,217)
Hedge of net investment in foreign operation	574,824	(574,824)	(574,824)	-	-	-

Hedging Instrument/ Hedged Item	Change in Value Used for Calculating Hedge Ineffectiveness		Accumulated Gains or Losses in Other Equity		Carrying Amount of Hedged Item in Fair Value Hedge	Accumulated Amount of Fair Value Hedge Adjustments on Hedged Item
	Hedging Instrument	Hedged Item	Continuing Hedges	Hedge Accounting No Longer Applied	Asset	Asset
	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)
Fair value hedge						
Borrowings denominated in foreign currencies/ Financial assets at FVTPL	$ 5,621	$ (5,621)	$ -	$ -	$ 101,821	$ (5,065)
Hedge of net investment in foreign operation	20,471	(20,471)	(20,471)	-	-	-

b) Interest rate risk

Except a portion of long-term borrowings and bonds payable at fixed interest rates, the Group was exposed to interest rate risk because group entities borrowed funds at floating interest rates. Changes in market interest rates led to variances in effective interest rates of borrowings from which the future cash flow fluctuations arise. The Group utilized financing instruments with low interest rates and favorable terms to maintain low financing cost, adequate banking facilities, as well as to hedge interest rate risk.

The carrying amounts of the Group's financial assets and financial liabilities with exposure to interest rates at each balance sheet date were as follows:

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Fair value interest rate risk			
Financial liabilities	$ 41,952,056	$ 56,599,417	$ 2,015,649
Cash flow interest rate risk			
Financial assets	46,467,663	45,489,788	1,620,007
Financial liabilities	169,709,237	131,715,366	4,690,718

For assets and liabilities with floating interest rates, a 100 basis point increase or decrease was used when reporting interest rate risk internally to key management personnel. If interest rates had been 100 basis points (1%) higher or lower and all other variables held constant, the Group's profit before income tax for the years ended December 31, 2018, 2019 and 2020 would have decreased or increased approximately by NT$1,398,000 thousand, NT$1,232,000 thousand and NT$862,000 thousand (US$30,698 thousand), respectively. Hedging contracts and hedged items have been taken into account while measuring the changes in profit before income tax. The abovementioned sensitivity analysis mainly focused on the interest rate items at the end of each year. As the year-end exposure did not reflect the exposure for the years ended December 31, 2018, 2019 and 2020, the abovementioned sensitivity analysis was unrepresentative of those respective periods.

c) Other price risk

The Group was exposed to equity price risk through its investments in financial assets at FVTPL and financial assets at FVTOCI. If equity price was 1% higher or lower, profit before income tax for the years ended December 31, 2018, 2019 and 2020 would have increased or decreased approximately by NT$64,000 thousand, NT$51,000 thousand and NT$59,000 thousand (US$2,101 thousand), respectively, and other comprehensive income before income tax for the years ended December 31, 2018, 2019 and 2020 would have increased or decreased approximately by NT$16,000 thousand, NT$8,000 thousand and NT$7,000 thousand (US$249 thousand), respectively.

2) Credit risk

Credit risk refers to the risk that counterparty will default on its contractual obligations resulting in financial loss to the Group. The Group's credit risk arises from cash and cash equivalents, trade and other receivables and other financial assets. The Group's maximum exposure to credit risk was the carrying amounts of financial assets in the consolidated balance sheets.

As of December 31, 2019 and 2020, the Group's five largest customers accounted for 37% and 27% of trade receivables, respectively. The Group transacts with a large number of unrelated customers and, thus, no concentration of credit risk was observed.

3) Liquidity risk

The Group manages liquidity risk by maintaining adequate working capital and banking facilities to fulfill the demand for cash flow used in the Group's operation and capital expenditure. The Group also monitors its compliance with all the loan covenants. Liquidity risk is not considered to be significant.

In the table below, financial liabilities with a repayment on demand clause were included in the earliest time band regardless of the probability of counter-parties choosing to exercise their rights. The maturity dates for other non-derivative financial liabilities were based on the agreed repayment dates.

To the extent that interest flows are floating rate, the undiscounted amounts were derived from the interest rates at each balance sheet date.

December 31, 2019

	On Demand or Less than 1 Month NT$	1 to 3 Months NT$	3 Months to 1 Year NT$	1 to 5 Years NT$	More than 5 Years NT$
Non-derivative financial liabilities					
Non-interest bearing	$ 35,283,757	$ 38,803,904	$ 7,989,256	$ 33,797	$ 184,338
Obligation under leases	75,388	115,297	532,747	1,536,600	4,412,859
Floating interest rate liabilities	10,740,844	6,708,303	18,868,999	133,341,087	7,190,891
Fixed interest rate liabilities	6,819,585	3,712,979	2,281,375	34,405,594	3,689,219
	$ 52,919,574	$ 49,340,483	$ 29,672,377	$169,317,078	$ 15,477,307

Further information for maturity analysis of obligation under leases was as follows:

	Less than 1 Year NT$	1 to 5 Years NT$	5 to 10 Years NT$	10 to 15 Years NT$	15 to 20 Years NT$	More than 20 Years NT$
Obligation under leases	$ 723,432	$ 1,536,600	$ 1,454,128	$ 856,825	$ 712,696	$ 1,389,210

December 31, 2020

Non-derivative financial liabilities	On Demand or Less than 1 Month NT$	1 to 3 Months NT$	3 Months to 1 Year NT$	1 to 5 Years NT$	More than 5 Years NT$
Non-interest bearing	$ 43,111,390	$ 44,122,659	$ 8,223,684	$ 319,510	$ 176,536
Obligation under leases	103,734	151,921	619,908	1,779,041	4,088,301
Floating interest rate liabilities	13,792,596	8,190,076	10,214,154	102,253,481	7,999,130
Fixed interest rate liabilities	11,895,281	528,290	3,349,614	46,900,450	5,631,522
	$ 68,903,001	$ 52,992,946	$ 22,407,360	$151,252,482	$ 17,895,489

Non-derivative financial liabilities	On Demand or Less than 1 Month US$ (Note 4)	1 to 3 Months US$ (Note 4)	3 Months to 1 Year US$ (Note 4)	1 to 5 Years US$ (Note 4)	More than 5 Years US$ (Note 4)
Non-interest bearing	$ 1,535,306	$ 1,571,320	$ 292,866	$ 11,379	$ 6,287
Obligation under leases	3,694	5,410	22,077	63,356	145,595
Floating interest rate liabilities	491,189	291,669	363,752	3,641,506	284,869
Fixed interest rate liabilities	423,621	18,814	119,288	1,670,244	200,553
	$ 2,453,810	$ 1,887,213	$ 797,983	$ 5,386,485	$ 637,304

Further information for maturity analysis of obligation under leases was as follows:

	Less than 1 Year NT$	1 to 5 Years NT$	5 to 10 Years NT$	10 to 15 Years NT$	15 to 20 Years NT$	More than 20 Years NT$
Obligation under leases	$ 875,563	$ 1,779,041	$ 1,422,331	$ 776,735	$ 674,446	$ 1,214,789

	Less than 1 Year US$ (Note 4)	1 to 5 Years US$ (Note 4)	5 to 10 Years US$ (Note 4)	10 to 15 Years US$ (Note 4)	15 to 20 Years US$ (Note 4)	More than 20 Years US$ (Note 4)
Obligation under leases	$ 31,181	$ 63,356	$ 50,653	$ 27,661	$ 24,019	$ 43,262

The amounts included above for floating interest rate instruments for non-derivative financial liabilities were subject to change if changes in floating interest rates differ from those estimates of interest rates determined at each balance sheet date.

The following table detailed the Group's liquidity analysis for its derivative financial instruments. The table was based on the undiscounted contractual net cash inflows and outflows on derivative instruments settled on a net basis, and the undiscounted gross cash inflows and outflows on those derivatives that require gross settlement. When the amounts payable or receivable are not fixed, the amounts disclosed have been determined by reference to the projected interest rates as illustrated by the yield curves at each balance sheet date.

December 31, 2019	On Demand or Less than 1 Month NT$	1 to 3 Months NT$	3 Months to 1 Year NT$
Net settled			
Forward exchange contracts	$ (74,864)	$ (13,246)	$ -

(Continued)

	On Demand or Less than 1 Month	1 to 3 Months	3 Months to 1 Year
	NT$	NT$	NT$
Gross settled			
Forward exchange contracts			
Inflows	$ 9,296,123	$ 4,420,233	$ 230,354
Outflows	(9,248,333)	(4,392,070)	(227,848)
	47,790	28,163	2,506
Swap contracts			
Inflows	10,187,215	15,025,154	34,327,100
Outflows	(10,163,964)	(15,032,603)	(34,773,848)
	23,251	(7,449)	(446,748)
	$ 71,041	$ 20,714	$ (444,242)

(Concluded)

December 31, 2020	On Demand or Less than 1 Month	1 to 3 Months	3 Months to 1 Year	Over 1 Year
	NT$	NT$	NT$	NT$
Net settled				
Forward exchange contracts	$ 30,514	$ 18,429	$ -	$ -
Gross settled				
Forward exchange contracts				
Inflows	$ 8,862,682	$ 5,565,137	$ 531,336	$ -
Outflows	(8,798,238)	(5,518,153)	(526,880)	-
	64,444	46,984	4,456	-
Swap contracts				
Inflows	19,311,999	17,179,871	36,739,200	$ -
Outflows	(19,524,820)	(17,486,997)	(37,495,172)	-
	(212,821)	(307,124)	(755,972)	-
Target redemption forward contracts				
Inflows	42,720	96,120	416,520	227,128
Outflows	(44,471)	(100,060)	(433,595)	(236,081)
	(1,751)	(3,940)	(17,075)	(8,953)
	$ (150,128)	$ (264,080)	$ (768,591)	$ (8,953)

December 31, 2020	On Demand or Less than 1 Month	1 to 3 Months	3 Months to 1 Year	Over 1 Year
	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)	US$ (Note 4)
Net settled				
Forward exchange contracts	$ 1,087	$ 656	$ -	$ -
Gross settled				
Forward exchange contracts				
Inflows	$ 315,623	$ 198,189	$ 18,922	$ -
Outflows	(313,328)	(196,516)	(18,763)	-
	2,295	1,673	159	-

(Continued)

	On Demand or Less than 1 Month US$ (Note 4)	1 to 3 Months US$ (Note 4)	3 Months to 1 Year US$ (Note 4)	Over 1 Year US$ (Note 4)
Swap contracts				
Inflows	687,749	611,819	1,308,376	$ -
Outflows	(695,328)	(622,756)	(1,335,298)	-
	(7,579)	(10,937)	(26,922)	-
Target redemption forward contracts				
Inflows	1,522	3,423	14,833	8,089
Outflows	(1,584)	(3,563)	(15,441)	(8,408)
	(62)	(140)	(608)	(319)
	$ (5,346)	$ (9,404)	$ (27,371)	$ (319)

(Concluded)

35. RELATED PARTY TRANSACTIONS

Balances and transactions within the Group had been eliminated upon consolidation. Details of transactions between the Group and other related parties were disclosed as follows:

a. Related parties

In addition to those disclosed in Note 14, the related parties were as follows:

Related Parties	Relationship with the Company
ASE Cultural and Educational Foundation	Substantial related party
ASE Environmental Protection and Sustainability Foundation	Substantial related party

b. The Group contributed NT$100,000 thousand (US$3,561 thousand) to ASE Cultural and Educational Foundation in 2018, 2019 and 2020, respectively, for environmental charity in promoting the related domestic environmental protection and public service activities. In December 2020, the Group further resolved to make contributions in the amount of NT$100,000 thousand (US$3,561 thousand) through the ASE Environmental Protection and Sustainability Foundation to continuously implement the activities related to environmental protection projects (Note 37).

c. The subsidiary, ASE, and HC entered into a joint development agreement in June 2020 under the concept of joint construction. The agreement stipulates that HC will build the plant on the leasehold land and ASE and its affiliates will have the priority to purchase the plant after the completion of the plant construction. The final transaction price will be the purchase price less an amount based on the ratio calculated by independent professional appraisers.

d. As disclosed in Note 31, USIE repurchased its own 2,805 thousand and 2,685 thousand ordinary shares from the Group's key management personnel with approximately NT$1,247,187 thousand and NT$1,520,976 thousand (US$54,166 thousand) in July 2019 and September 2020, respectively.

e. In 2019, ASE purchased real estate properties from associates with the amount of NT$2,326,000 thousand, which was primarily based on the independent professional appraisal reports and has been fully paid in September 2019.

f. Compensation to key management personnel

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Short-term employee benefits	$ 1,041,216	$ 1,027,191	$ 1,264,980	$ 45,049
Post-employment benefits	3,884	2,208	2,007	72
Share-based payments	9,145	134,544	153,774	5,476
	$ 1,054,245	$ 1,163,943	$ 1,420,761	$ 50,597

The compensation to the Group's key management personnel was determined according to personal performance and market trends.

36. ASSETS PLEDGED AS COLLATERAL OR FOR SECURITY

The following assets were provided as collateral for bank borrowings, tariff guarantees of imported raw materials or collateral:

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Inventories related to real estate business	$ 6,063,303	$ 10,564,873	$ 376,242
Property, plant and equipment	138,831	124,124	4,420
Investment properties	12,167,772	11,847,145	421,907
Other financial assets (including current and non-current)	637,775	460,890	16,414
	$ 19,007,681	$ 22,997,032	$ 818,983

As of December 31, 2020, in addition to the abovementioned assets, 89.6% of ownership in FAFG was also provided as collateral for syndicated bank loans.

37. SIGNIFICANT CONTINGENT LIABILITIES AND UNRECOGNIZED COMMITMENTS

In addition to those disclosed in other notes, significant commitments and contingencies of the Group as of each balance sheet date were as follows:

a. As of December 31, 2019 and 2020, unused letters of credit of the Group were approximately NT$394,000 thousand and NT$2,000 thousand (US$71 thousand), respectively.

b. As of December 31, 2019 and 2020, the Group's commitments to purchase property, plant and equipment were approximately NT$25,119,371 thousand and NT$32,627,411 thousand (US$1,161,945 thousand), respectively, of which NT$5,145,345 thousand and NT$1,968,779 thousand (US$70,113 thousand) had been prepaid, respectively. As of December 31, 2019 and 2020, the commitment that the Group has contracted for the construction related to our real estate business were approximately NT$1,393,859 thousand and NT$602,548 thousand (US$21,458 thousand), respectively.

c. As of December 31, 2019 and 2020, letters of credits were provided to customs by banks for the importation of goods, and the banking facilities granted to the Group were approximately NT$952,001 thousand and NT$671,721 thousand (US$23,922 thousand), respectively.

d. In consideration of corporate social responsibility for environmental protection, the board of directors of ASE, in December 2013, approved contributions to be made in the next 30 years, at a total amount of NT$3,000,000 thousand (US$106,838 thousand), at the minimum, to environmental protection efforts in Taiwan.

38. OTHERS

a. There were five employees and a waste disposal supplier of a subsidiary in China accused by China People's Procuratorate (the "Procuratorate") for committing the crime of environmental pollution in 2018. During the trial, the Procuratorate claimed that the subsidiary should also be charged with corporate crime which caused the subsidiary received a change and addition indictment in October 2019. In June 2020, in the first trial, the court of first instance ruled that the subsidiary shall be imposed a fine of RMB400 thousand and return the benefit (RMB344 thousand) generated from such violation. Both of the fine and the return of benefit from violation were recognized by the subsidiary under the line item of other gains and losses. Because some of co-defendants have filed an appeal against the judgment and, pursuant to local applicable law, the whole case will be deemed appealed, this case was not yet final and moved to the court of second instance for trial. As of the date that the consolidated financial statements were authorized for issue, final results of the indemnification could not be reliably measured.

b. On December 20, 2013, the Kaohsiung Environmental Protection Bureau (the "KEPB") imposed an administrative fine of NT$102,014 thousand (the "Original Fine") upon ASE for violation of the Water Pollution Control Act. After ASE sought administrative remedies against the Original Fine, the Original Fine has been revoked by final judgment of Supreme Administrative Court on June 8, 2017, and KEPB is ordered to refund the Original Fine to ASE. On December 27, 2019, KEPB has refunded NT$55,062 thousand to ASE. On February 10, 2020, KEPB re-imposed an administrative fine of NT$46,952 thousand (US$1,672 thousand) (the "New Fine") upon ASE and offset the New Fine by the remaining amount which shall be refunded to ASE. Therefore, no additional payment that ASE should make for the New Fine. After ASE filed an administrative appeal against the New Fine, the Administrative Appeal Review Committee of Kaohsiung City Government has revoked the New Fine on December 15, 2020 and remanded to KEPB for another legitimate administrative action.

39. SIGNIFICANT SUBSEQUENT EVENTS

On March 1, 2021, the subsidiary, USISH, issued unsecured convertible corporate bonds of RMB3,450,000 thousand with a six-year term and the annual interest rates are 0.1%, 0.2%, 0.6%, 1.3%, 1.8% and 2.0%, respectively, for the respective year.

40. SIGNIFICANT ASSETS AND LIABILITIES DENOMINATED IN FOREIGN CURRENCIES

The following information was aggregated by the foreign currencies other than functional currencies of the group entities and the exchange rates between foreign currencies and respective functional currencies were disclosed. The significant financial assets and liabilities denominated in foreign currencies were as follows:

	Foreign Currencies (In Thousand)	Exchange Rate	Carrying Amount (In Thousand)
December 31, 2019			
Monetary financial assets			
US$	$ 4,125,872	US$1=NT$29.98	$ 123,693,628
US$	1,189,539	US$1=RMB6.9762	35,662,384
JPY	13,889,872	JPY1=NT$0.2760	3,833,605
JPY	771,392	JPY1=US$0.0092	212,904
Monetary financial liabilities			
US$	3,823,359	US$1=NT$29.98	114,624,313
US$	1,211,472	US$1=RMB6.9762	36,319,926
JPY	14,628,543	JPY1=NT$0.2760	4,037,478
JPY	815,929	JPY1=US$0.0092	225,197
December 31, 2020			
Monetary financial assets			
US$	4,269,075	US$1=NT$28.48	121,583,265
US$	1,527,381	US$1=RMB6.5249	43,499,803
US$	41,643	EUR1=US$0.8143	1,185,984
JPY	13,544,360	JPY1=NT$0.2763	3,742,306
JPY	1,174,208	JPY1=US$0.0097	324,434
HKD	174,765	HKD1=NT$3.6730	641,912
Monetary financial liabilities			
US$	4,439,915	US$1=NT$28.48	126,448,786
US$	1,517,568	US$1=RMB6.5249	43,220,325
US$	20,896	EUR1=US$0.8143	595,128
JPY	13,657,967	JPY1=NT$0.2763	3,773,695
JPY	1,188,650	JPY1=US$0.0097	328,424
HKD	18,814	HKD1=NT$3.6730	69,103

The significant realized and unrealized foreign exchange gain (loss) were as follows:

	For the Year Ended December 31						
	2018		2019		2020		
Functional Currencies	Exchange Rate	Net Foreign Exchange Loss	Exchange Rate	Net Foreign Exchange Gain (Loss)	Exchange Rate	Net Foreign Exchange Gain (Loss)	
		NT$		NT$		NT$	US$ (Note 4)
US$	US$1=NT$30.715	$ (67,476)	US$1=NT$29.98	$ (84,177)	US$1=NT$28.48	$ (143,804)	$ (5,121)
NT$		(849,234)		1,203,823		1,382,067	49,219
RMB	RMB1=NT$4.4753	(120,005)	RMB1=NT$4.2975	14,055	RMB1=NT$4.3648	(181,624)	(6,468)
		$ (1,036,715)		$ 1,133,701		$ 1,056,639	$ 37,630

41. OPERATING SEGMENTS INFORMATION

The Group has the following reportable segments: Packaging, Testing and EMS. The Group packages bare semiconductors into finished semiconductors with enhanced electrical and thermal characteristics; provides testing services, including front-end engineering testing, wafer probing and final testing services; engages in the designing, assembling, manufacturing and sale of electronic components and telecommunications equipment motherboards. Information about other business activities and operating segments that are not reportable are combined and disclosed in "Others." The Group engages in other activities such as substrate production as well as sale and leasing of real estate properties.

The accounting policies for segments are the same as those described in Note 4. The measurement basis for resources allocation and performance evaluation is based on profit before income tax.

a. Segment revenues and operation results

	Packaging NT$	Testing NT$	EMS NT$	Others NT$	Adjustments and Eliminations NT$	Total NT$
For the year ended December 31, 2018						
Revenue from external customers	178,308,222	35,903,202	151,890,384	4,990,613	-	371,092,421
Inter-group revenues (Note 1)	3,531,431	212,310	58,836,465	7,637,053	(70,217,259)	-
Segment revenues	181,839,653	36,115,512	210,726,849	12,627,666	-	441,309,680
Interest income	166,761	55,108	354,343	352,232	(462,233)	466,211
Interest expense	(3,647,601)	(101,338)	-	(249,180)	462,233	(3,535,886)
Depreciation and amortization	(29,491,977)	(9,560,610)	(2,065,590)	(1,570,726)	-	(42,688,903)
Share of the profit or loss of associates and joint ventures	(456,846)	(23,398)	-	-	-	(480,244)
Impairment loss	(654,081)	-	-	-	-	(654,081)
Segment profit before income tax	17,866,431	7,952,484	6,225,984	(107,221)	-	31,937,678
Expenditures for segment assets	22,787,190	12,991,023	2,529,771	784,254	-	39,092,238
December 31, 2018						
Investments accounted for using the equity method	9,152,290	160,018	-	-	-	9,312,308
Contract assets	3,488,372	1,000,128	-	-	-	4,488,500
For the year ended December 31, 2019						
Revenue from external customers	198,916,897	42,658,686	165,789,479	5,817,122	-	413,182,184
Inter-group revenues (Note 1)	5,370,963	231,399	60,638,567	7,431,399	(73,672,328)	-
Segment revenues	204,287,860	42,890,085	226,428,046	13,248,521	-	486,854,512
Interest income	186,291	90,091	249,487	284,458	(260,646)	549,681
Interest expense	(3,403,475)	(545,609)	(255,404)	(243,013)	260,646	(4,186,855)
Depreciation and amortization	(33,456,831)	(12,379,703)	(2,534,825)	(2,095,482)	-	(50,466,841)
Share of the profit or loss of associates and joint ventures	75,303	39,852	67,120	-	-	182,275
Impairment loss	(601,066)	(141)	-	-	-	(601,207)
Segment profit before income tax	7,572,763	10,321,537	6,082,106	(696,595)	-	23,279,811
Expenditures for segment assets	35,462,305	23,966,051	2,770,129	875,402	-	63,073,887
December 31, 2019						
Investments accounted for using the equity method	8,867,316	1,123,490	2,094,401	-	-	12,085,207
Contract assets	4,162,124	1,735,192	-	-	-	5,897,316
For the year ended December 31, 2020						
Revenue from external customers	218,666,071	47,271,074	204,690,669	6,350,896	-	476,978,710
Inter-group revenues (Note 1)	10,436,168	435,587	21,472,775	7,234,303	(39,578,833)	-
Segment revenues	229,102,239	47,706,661	226,163,444	13,585,199	-	516,557,543
Interest income	133,160	79,821	275,766	32,036	-	520,783
Interest expense	(2,244,280)	(564,269)	(443,519)	(185,160)	-	(3,437,228)
Depreciation and amortization	(32,333,229)	(14,189,024)	(2,877,546)	(1,859,266)	-	(51,259,065)
Share of the profit or loss of associates and joint ventures	362,133	99,670	85,809	-	-	547,612
Impairment loss	(218,600)	(773,673)	-	-	-	(992,273)
Segment profit before income tax	17,476,440	10,277,760	8,438,766	(424,168)	-	35,768,798
Expenditures for segment assets	38,643,303	14,275,397	5,614,409	491,092	-	59,024,201
December 31, 2020						
Investments accounted for using the equity method	9,146,344	1,340,307	2,320,022	-	-	12,806,673
Contract assets	3,641,244	1,141,660	-	-	-	4,782,904

	Packaging US$ (Note 4)	Testing US$ (Note 4)	EMS US$ (Note 4)	Others US$ (Note 4)	Adjustments and Eliminations US$ (Note 4)	Total US$ (Note 4)
For the year ended December 31, 2020						
Revenue from external customers	7,787,253	1,683,443	7,289,554	226,171	-	16,986,421
Inter-group revenues (Note 1)	371,659	15,512	764,700	257,632	(1,409,503)	-
Segment revenues	8,158,912	1,698,955	8,054,254	483,803	-	18,395,924
Interest income	4,742	2,842	9,821	1,141	-	18,546
Interest expense	(79,925)	(20,095)	(15,795)	(6,594)	-	(122,409)
Depreciation and amortization	(1,151,468)	(505,307)	(102,477)	(66,213)	-	(1,825,465)
Share of the profit or loss of associates and joint ventures	12,896	3,550	3,056	-	-	19,502
Impairment loss	(7,785)	(27,552)	-	-	-	(35,337)
Segment profit before income tax	622,380	366,017	300,526	(15,106)	-	1,273,817
Expenditures for segment assets	1,376,186	508,383	199,943	17,489	-	2,102,001
December 31, 2020						
Investments accounted for using the equity method	325,724	47,732	82,622	-	-	456,078
Contract assets	129,674	40,657	-	-	-	170,331

Note 1: Inter-group revenues were eliminated upon consolidation.

Note 2: The disaggregated product and service type from the Group's contract with customer is the same as those disclosed in above reportable segment.

b. Revenue from major products and services

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
Packaging service	$ 178,308,222	$ 198,916,897	$ 218,666,071	$ 7,787,253
Testing service	35,903,202	42,658,686	47,271,074	1,683,443
EMS	151,890,384	165,789,479	204,690,669	7,289,554
Others	4,990,613	5,817,122	6,350,896	226,171
	$ 371,092,421	$ 413,182,184	$ 476,978,710	$ 16,986,421

c. Geographical information

The Group’s revenue from external customers by location of headquarter and information about its non-current assets by location of assets are detailed below.

1) Net revenues from external customers

	For the Year Ended December 31			
	2018	2019	2020	
	NT$	NT$	NT$	US$ (Note 4)
United States	$ 230,791,164	$ 245,521,027	$ 297,117,001	$ 10,581,090
Taiwan	45,630,792	51,244,470	64,829,301	2,308,736
Asia	56,031,108	75,938,364	74,447,091	2,651,249
Europe	36,844,258	38,613,132	39,477,306	1,405,887
Others	1,795,099	1,865,191	1,108,011	39,459
	$ 371,092,421	$ 413,182,184	$ 476,978,710	$ 16,986,421

2) Non-current assets

	December 31		
	2019	2020	
	NT$	NT$	US$ (Note 4)
Taiwan	$ 239,532,971	$ 239,353,978	$ 8,524,002
China	68,747,648	63,907,990	2,275,926
Others	26,645,450	34,107,657	1,214,660
	$ 334,926,069	$ 337,369,625	$ 12,014,588

Non-current assets exclude financial instruments, post-employment benefit assets, and deferred tax assets.

d. Major customers

Except customer A from which the operating revenues generated from packaging and EMS segments were NT$92,117,839, NT$103,987,781 thousand and NT$145,952,908 thousand (US$5,197,753 thousand) for the years ended December 31, 2018, 2019 and 2020, respectively, and customer B from which the operating revenues generated from packaging and testing segments was NT$44,653,072 thousand for the year ended December 31, 2019, the Group did not have any other individual customer from which the operating revenues exceeded 10% of operating revenues for the years ended December 31, 2018, 2019 and 2020.