

ASE Technology Holding
Fourth Quarter 2021
Earnings Release

ASE Technology Holding Co., Ltd. February 10, 2022



Safe Harbor Notice

This presentation contains "forward-looking statements" within the meaning of Section 27A of the United States Securities Act of 1933, as amended, and Section 21E of the United States Securities Exchange Act of 1934, as amended. Although these forward-looking statements, which may include statements regarding our future results of operations, financial condition or business prospects, are based on our own information and information from other sources we believe to be reliable, you should not place undue reliance on these forward-looking statements, which apply only as of the date of this press release. The words "anticipate," "believe," "estimate," "expect," "intend," "plan" and similar expressions, as they relate to us, are intended to identify these forward-looking statements in this press release. These forward-looking statements are necessarily estimates reflecting the best judgment of our senior management and our actual results of operations, financial condition or business prospects may differ materially from those expressed or implied by the forward-looking statements for reasons including, among others, risks associated with cyclicality and market conditions in the semiconductor or electronic industry; changes in our regulatory environment, including our ability to comply with new or stricter environmental regulations and to resolve environmental liabilities; demand for the outsourced semiconductor packaging, testing and electronic manufacturing services we offer and for such outsourced services generally; the highly competitive semiconductor or manufacturing industry we are involved in; our ability to introduce new technologies in order to remain competitive; international business activities; our business strategy; our future expansion plans and capital expenditures; the strained relationship between the Republic of China and the People's Republic of China; general economic and political conditions; the recent shift in United States trade policies; possible disruptions in commercial activities caused by natural or human-induced disasters; fluctuations in foreign currency exchange rates; and other factors. For a discussion of these risks and other factors, please see the documents we file from time to time with the Securities and Exchange Commission, including the 2020 Annual Report on Form 20-F filed on April 6, 2021.





Consolidated Statements of Comprehensive Income

03/2021

Quarterly Comparison

04 / 2021

(unaudited)

(NTS Million)

(1413 IAIIIIIAI)	Q4 / 2021	/0	Q3 / ZUZI	/0	Q4 / 2020	/0	QUQ	101
Net Revenues:								
ATM	90,583	52.4%	88,791	58.9%	69,135	46.4%	2%	31%
EMS	81,541	47.2%	61,116	40.6%	79,141	53.2%	33%	3%
Others	812	0.4%	758	0.5%	601	0.4%	7%	35%
Total Net Revenues	172,936	100.0%	150,665	100.0%	148,877	100.0%	15%	16%
Gross Profit	32,894	19.0%	30,784	20.4%	23,299	15.6%	7%	41%
Operating Income (Loss)	19,615	11.3%	18,426	12.2%	11,246	7.6%	6%	74%
Pretax Income (Loss)	37,336	21.6%	18,474	12.3%	12,604	8.5%	102%	196%
Income Tax Benefit (Expense)	(5,592)	-3.2%	(3,630)	-2.4%	(1,839)	-1.2%		
Non-controlling Interest	(828)	-0.5%	(668)	-0.4%	(721)	-0.5%		
Net Income Attributable to								
Shareholders of the Parent	30,916	17.9%	14,176	9.4%	10,044	6.7%	118%	208%
Basic EPS	7.20		3.29		2.35		119%	206%
Diluted EPS	6.99		3.20		2.30		118%	204%
Additional Commentary From N	ianaaement	&2 .						
Gross Profit excl. PPA expenses	33,819	19.6%	31,716	20.3%	24,184	16.2%	7%	40%
Operating Profit excl. PPA expenses	20,802	12.0%	19,620	11.3%	12,383	8.3%	6%	68%
Net Profit excl. PPA expenses	32,105	18.6%	15,374	9.1%	11,239	7.5%	109%	186%
Basic EPS excl. PPA expenses	7.48		3.56		2.63		110%	184%

^{1:} PPA expenses are the P&L impacts from the accounting treatment of purchase price allocation in relation to the ASE/SPIL transaction, which resulted in increased asset values from purchase price premiums in PP&E, intangibles and right-of-use assets. The PPA expenses excluded are related to depreciation, amortization and other expenses \$1.14bn in 4Q21, \$1.15bn in 3Q21 and \$1.20bn in 4Q20.
2: PPA expenses are the P&L impacts from the accounting treatment of purchase price allocation in relation to the USI/Asteelflash transaction, which resulted in increased asset and liability values from purchase price premiums in PP&E, intangibles, right-of-use assets and deferred tax liability. The PPA expenses excluded are related to depreciation, amortization, other expenses, income tax benefit and non-controlling interest \$0.07bn in 4Q21 and \$0.06bn in 3Q21.





04/2020

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YoY

Consolidated Statements of Comprehensive Income

Yearly Comparison

(unaudited)

(NT\$ Million)	FY / 2021	%	FY / 2020	%	YoY
Net Revenues:					
ATM	327,718	57.5%	270,095	56.6%	21%
EMS	239,488	42.0%	204,691	42.9%	17%
Others	2,791	0.5%	2,192	0.5%	27%
Total Net Revenues	569,997	100.0%	476,978	100.0%	20%
Gross Profit	110,369	19.4%	77,984	16.3%	42%
Operating Income (Loss)	62,125	10.9%	34,877	7.3%	78%
Pretax Income (Loss)	80,336	14.1%	35,734	7.5%	125%
Income Tax Benefit (Expense)	(14,322)	-2.5%	(6,457)	-1.4%	
Non-controlling Interest	(2,106)	-0.4%	(1,684)	-0.4%	
Net Income Attributable to					
Shareholders of the Parent	63,908	11.2%	27,593	5.8%	132%
Basic EPS	14.84		6.47		129%
Diluted EPS	14.40		6.31		128%
Additional Commentary From I	Manaaement	182			
Gross Profit excl. PPA expenses	114,184	20.0%	81,692	17.1%	40%
Operating Profit excl. PPA expenses	66,996	11.8%	39,597	8.3%	69%
Net Profit excl. PPA expenses	68,734	12.1%	32,414	6.8%	112%
Basic EPS excl. PPA expenses	15.96		7.60		110 %

1: PPA expenses are the P&L impacts from the accounting treatment of purchase price allocation in relation to the ASE/SPIL transaction, which resulted in increased asset values from purchase price premiums in PP&E, intangibles and right-of-use assets. The PPA expenses excluded are related to depreciation, amortization and other expenses \$4.61bn in 2021 and \$4.82bn in 2020.
2: PPA expenses are the P&L impacts from the accounting treatment of purchase price allocation in relation to the USI/Asteelflash transaction, which resulted in increased asset and liability values from purchase price premiums in PP&E, intangibles, right-of-use assets and deferred tax liability. The PPA expenses excluded are related to depreciation, amortization, other expenses, income tax benefit non-controlling interest \$0.30bn in 2021.





ATM Statements of Comprehensive Income

Quarterly Comparison

(NT\$ Million)	Q4 / 2021	%	Q3 / 2021	%	Q4 / 2020	%	QoQ	YoY
Net Revenues:								
Packaging	76,664	83.4%	75,221	83.5%	60,825	83.6%	2%	26%
Testing	13,756	15.0%	13,416	14.9%	10,667	14.7%	3%	29%
Direct Material	1,502	1.6%	1,429	1.6%	1,229	1.7%	5%	22%
Others	36	0.0%	26	0.0%	31	0.0%	38%	16%
Total Net Revenues	91,958	100.0%	90,092	100.0%	72,752	100.0%	2%	26%
Gross Profit	25,741	28.0%	24,714	27.4%	16,478	22.6%	4%	56%
Operating Income (Loss)	16,056	17.5%	15,631	17.3%	8,002	11.0%	3%	101%
Additional Commentary From	Management	t ¹ :						
Gross Profit excl. PPA expenses	26,620	28.9%	25,594	28.4%	17,363	23.9%	4%	53%
Operating Profit excl. PPA expenses	17,185	18.7%	16,761	18.6%	9,139	12.6%	3%	88%

¹: PPA expenses are the P&L impacts from the accounting treatment of purchase price allocation in relation to the ASE/SPIL transaction, which resulted in increased asset values from purchase price premiums in PP&E, intangibles and right-of-use assets. The PPA expenses excluded are related to depreciation and amortization \$1.13bn in both 4Q21 and 3Q21 and \$1.14bn in 4Q20.





ATM Statements of Comprehensive Income

Yearly Comparison

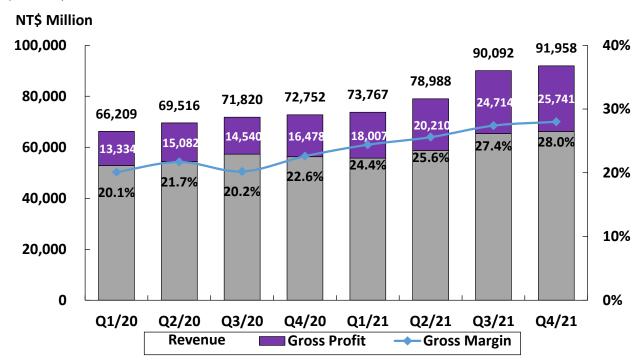
(NT\$ Million)	FY / 2021	%	FY / 2020	%	YoY
Net Revenues:					
Packaging	279,365	83.4%	228,574	81.5%	22%
Testing	49,981	14.9%	47,277	16.9%	6%
Direct Material	5,346	1.6%	4,314	1.5%	24%
Others	113	0.1%	132	0.1%	-14%
Total Net Revenues	334,805	100.0%	280,297	100.0%	19%
Gross Profit	88,672	26.5%	59,434	21.2%	49%
Operating Income (Loss)	53,432	16.0%	27,609	9.8%	94%
Additional Commentary From I	Management	: ¹ :			
Gross Profit excl. PPA expenses	92,194	27.5%	63,142	22.5%	46%
Operating Profit excl. PPA expenses	57,958	17.3 %	32,329	11.5%	79%

¹: PPA expenses are the P&L impacts from the accounting treatment of purchase price allocation in relation to the ASE/SPIL transaction, which resulted in increased asset values from purchase price premiums in PP&E, intangibles and right-of-use assets. The PPA expenses excluded are related to depreciation and amortization \$4.53bn in 2021 and \$4.72bn in 2020.





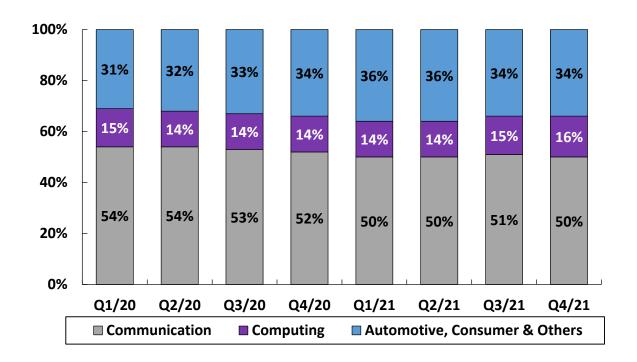
ATM Operations







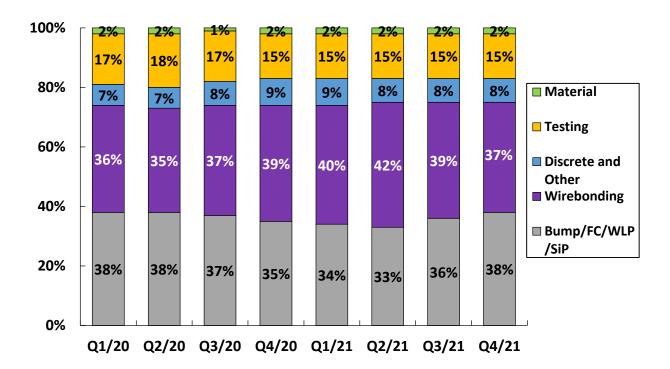
ATM Revenue by Application







ATM Revenue by Type







EMS Operations

Quarterly/Yearly Comparison

(NT\$ Million)	Q4 / 2021*	%	Q3 / 2021*	%	Q4 / 2020	%	QoQ	YoY
EMS Net Revenues	81,544	100.0%	61,127	100.0%	79,149	100.0%	33%	3%
Gross Profit	7,108	8.7%	5,883	9.6%	6,996	8.8%	21%	2%
Operating Income (Loss)	3,599	4.4%	2,658	4.3%	3,463	4.4%	35%	4%

(NT\$ Million)	FY / 2021*	%	FY / 2020	%	YoY
EMS Net Revenues	239,519	100.0%	204,723	100.0%	17%
Gross Profit	21,479	9.0%	18,921	9.2%	14%
Operating Income (Loss)	8,706	3.6%	7,802	3.8%	12%

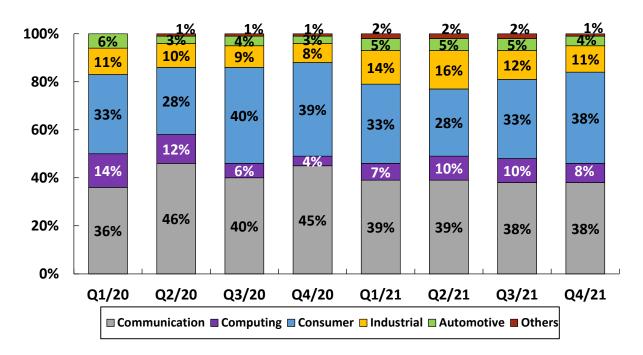
^{*:} PPA expenses are the P&L impacts from the accounting treatment of purchase price allocation in relation to the USI/ Asteelflash transaction, which resulted in increased asset and liability values from purchase price premiums in PP&E, intangibles, right-of-use assets and deferred tax liability. The PPA expenses excluded are related to depreciation and amortization \$0.06bn in 4Q21 and 3Q21 and \$0.35bn in 2021.





EMS Operations

Revenue By Application







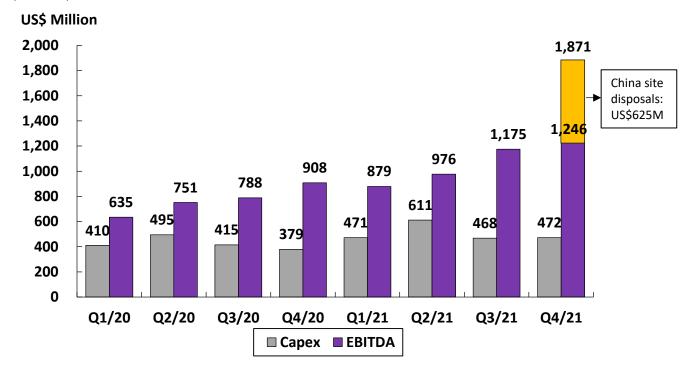
Key Balance Sheet Items & Indices

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(NT\$ Million)	Dec. 31, 2021	Sept. 30, 2021
Cash and cash equivalent	76,073	53,419
Financial assets - current	3,075	4,133
Financial assets - non current & investments - equity method	23,260	20,915
Property, plant & equipment	239,867	252,384
Total assets	672,934	650,259
Short-term loans	41,037	36,610
Current portion of bonds payable	9,903	3,699
Current portion of long-term loans	4,526	2,840
Bonds payable	42,365	48,498
Long-term loans & long-term bills payable	121,946	137,015
Total interest bearing debts	227,176	235,326
Total liabilities	398,301	399,420
Total equity (Including non-controlling interest)	274,633	250,839
Quarterly EBITDA	51,938	32,655
Current ratio	1.39	1.35
Net debt to equity ratio	0.54	0.71





Equipment Capital Expenditure vs. EBITDA







2021 Recap

2021 revenues and margin improvement better than target

- 2021 ATM revenues grew 26% year over year (all in USD terms), or 45% year over year excluding EAR-affected business
- 2021 ATM GM was 26.5%, approaching historical peak levels of 27%
- 2021 ASE consolidated revenues grew 26% year over year
- 2021 ASE consolidated operating margin improved 3.6 percentage points year over year versus target of 2.5-3 percentage points

Broad based growth with momentum

- 2021 Wirebond revenues grew 36% year over year, expecting double digit growth in 2022
- Even with EAR impact, 2021 Test revenues grew 12% year over year, expecting the growth rate to double in 2022
- 2021 Advanced Packaging revenues grew 23% year over year, expecting stronger growth rate in 2022
- 2021 ATM automotive revenues grew over 60% year over year, momentum to continue in 2022, expecting to achieve \$1B revenues milestone

Note: All numbers indicated are in USD terms. 2021 numbers are on a reported basis; 2022 numbers and forward-looking comments are stated on a pro forma basis, which excludes the 4 disposed China sites from year 2021.





2022 Outlook (1/2)

- Revenues and margin improvement to continue in 2022
 - Demands indicating a strong 2022 with another better-than-seasonal 1Q22, followed by quarter-to-quarter growth
 - Expect logic semiconductor industry to grow 5-10% year over year
 - Expect 2022 ATM revenues year over year growth to be 2x of the logic semiconductor industry driven by market share gain and IDM outsourcing
 - Expect a stable pricing environment, higher mix of testing and advanced packaging business
 - Expanding SiP customer portfolio with new SiP customers revenues to surpass half a billion mark in 2022
 - 2022 ATM gross and operating margin should surpass historical peak levels set in 2014 (27.0%/16.6%). Consolidated operating margin to further improve versus 2021

Note: All numbers indicated are in USD terms. 2022 numbers and forward-looking comments are stated on a pro forma basis, which excludes the 4 disposed China sites from year 2021.





2022 Outlook (2/2)

- Solid outlook for year 2022 and years beyond
 - Capacity and supply constraint will last beyond 2023
 - Scale, technology leadership, flexibility and proven record make ASE an indispensable manufacturing partner
 - Customer long term service agreements in place through 2023
 - IDM outsourcing ratio accelerating
 - Healthy growth of HPC, automotive, 5G migration, IoT and expanding silicon content leading to robust end demand and optimistic long-term prospects
 - A new round of smart factory, building and infrastructure investment started in 2021 aiming at supporting customers' long-term demand





China Site Disposals

- Deal closed on December 16, 2021
- Total consideration: US\$1.46 billion
- The disposed sites accounted for 7.6% of ATM revenues and 4.5% of consolidated revenues
- The disposed sites generated around NT\$0.79 of basic EPS in 2021
- Resource realignment to focus on the mega site (SPIL Suzhou) to address China opportunity
- More cash resources for organic expansion and strategic investments





First Quarter 2022 Outlook*

Based on our current business outlook and exchange rate assumptions, management projects overall performance for the first quarter of 2022 to be as follows:

- On a pro forma basis, in US dollar terms, our ATM 1st quarter 2022 business will be impacted by 4% versus 4th quarter 2021 levels due to lower working days and SiP seasonality;
- On a pro forma basis, our ATM 1st quarter 2022 gross margin should be slightly higher than our 2nd quarter 2021 gross margin;
- In US dollar terms, our EMS 1st quarter 2022 business level should be similar with the quarterly average of full year 2021;
- Our EMS 1st quarter 2022 operating margin should be close to the average of 2nd and 3rd quarter 2021 operating margin.

^{*:} Due to the impact of the COVID-19 outbreak, our outlook continues to be subject to a higher degree of risk. The information provided is done so as a reference of our current view as of the date of this presentation. Our business, financial condition and results of operations are of greater adverse risk; and, as a result, there may be a higher likelihood of material variances between our expected and actual results.





Thank You

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Appendix 1

Consolidated Statements of Comprehensive Income

Pro Forma Basis

(NT\$ Million)	Q1/2021	%	Q2/2021	%	Q3/2021	%	Q4/2021	%	FY/2021	%
Net Revenues:										
ATM	65,557	57.6%	70,919	58.8%	82,019	57.0%	83,805	50.4%	302,300	55.5%
EMS	47,684	41.9%	49,147	40.7%	61,116	42.5%	81,541	49.1%	239,488	44.0%
Others	602	0.5%	619	0.5%	758	0.5%	812	0.5%	2,791	0.5%
Total Net Revenues	113,843	100.0%	120,685	100.0%	143,893	100.0%	166,158	100.0%	544,579	100.0%
Gross Profit	20,868	18.3%	23,470	19.4%	29,251	20.3%	31,454	18.9%	105,043	19.3%
Operating Income (Loss)	10,405	9.1%	12,394	10.3%	17,463	12.1%	18,765	11.3%	59,027	10.8%
Pretax Income (Loss)	10,625	9.3%	12,440	10.3%	17,429	12.1%	36,320	21.9%	76,814	14.1%
Income Tax Benefit (Expense)	(2,392)	-2.1%	(2,543)	-2.1%	(3,505)	-2.4%	(5,767)	-3.5%	(14,207)	-2.6%
Non-controlling Interest	(252)	-0.2%	(358)	-0.3%	(668)	-0.5%	(828)	-0.5%	(2,106)	-0.4%
Net Income Attributable to										
Shareholders of the Parent	7,981	7.0%	9,539	7.9%	13,256	9.2%	29,725	17.9%	60,501	11.1%
Basic EPS	1.85		2.21		3.07		6.92		14.05	
Diluted EPS	1.80		2.12		2.99		6.72		13.62	
FX (NTD/USD)	28.30		28.03		27.79		27.78		27.98	





^{*:} Pro forma basis excludes the 4 disposed China Sites.

Appendix 2

ATM Statements of Comprehensive Income

Pro Forma Basis

(NT\$ Million)	Q1/2021	%	Q2/2021	%	Q3/2021	%	Q4/2021	%	FY/2021	%
Net Revenues:										
Packaging	56,844	83.4%	60,716	83.5%	69,512	83.4%	70,942	83.3%	258,014	83.4%
Testing	10,204	15.0%	10,656	14.6%	12,354	14.8%	12,700	14.9%	45,914	14.9%
Direct Material	1,044	1.5%	1,372	1.9%	1,429	1.7%	1,502	1.8%	5,347	1.7%
Others	47	0.1%	3	0.0%	26	0.0%	36	0.0%	112	0.0%
Total Net Revenues	68,139	100.0%	72,747	100.0%	83,321	100.0%	85,180	100.0%	309,387	100.0%
Gross Profit	16,989	24.9%	18,876	25.9%	23,181	27.8%	24,301	28.5%	83,346	26.9%
Operating Income (Loss)	9,415	13.8%	11,048	15.2%	14,667	17.6%	15,205	17.9%	50,334	16.3%
FX (NTD/USD)	28.30		28.03		27.79		27.78		27.98	





^{*:} Pro forma basis excludes the 4 disposed China Sites.

Appendix 3

Consolidated Statements of Comprehensive Income

(NT\$ Thousand)	Q1/2021	Q2/2021	Q3/2021	Q4/2021	FY/2021
Revenues	119,469,784	126,926,346	150,664,816	172,936,186	569,997,132
cogs	97,583,415	102,122,197	119,880,851	140,041,892	459,628,355
PPA under COGS	1,024,525	933,946	931,880	925,188	3,815,539
Gross profit	21,886,369	24,804,149	30,783,965	32,894,294	110,368,777
Gross profit excl. PPA	22,910,894	25,738,095	31,715,845	33,819,482	114,184,316
OPEX	10,977,703	11,630,191	12,357,669	13,278,865	48,244,428
PPA under OPEX	269,154	263,543	262,097	261,699	1,056,493
Operating income	10,908,666	13,173,958	18,426,296	19,615,429	62,124,349
Operating income excl. PPA	12,202,345	14,371,447	19,620,273	20,802,316	66,996,381
Non Op gain/(loss)	271,633	170,726	48,235	17,720,464	18,211,058
PPA under Non Op gain/ (loss)	43,225	2,813	39,929	40,799	126,766
Non Op gain/ (loss) excl. PPA	314,858	173,539	88,164	17,761,263	18,337,824
Pretax income	11,180,299	13,344,684	18,474,530	37,335,892	80,335,405
PPA under Pretax income	1,336,904	1,200,302	1,233,906	1,227,686	4,998,798
Pretax income excl. PPA	12,517,203	14,544,986	19,708,436	38,563,578	85,334,203
Tax expenses	2,451,096	2,648,128	3,630,545	5,592,057	14,321,826
PPA under Tax expense	(38,471)	(16,250)	(20,612)	(21,430)	(96,773)
Tax expense excl. PPA	2,489,567	2,664,378	3,651,157	5,613,487	14,418,599
Non-controlling interest	252,076	358,136	667,705	827,984	2,105,901
PPA under Non-controlling interest	30,714	12,788	15,661	16,695	75,858
Non-controlling interest excl. PPA	282,790	370,924	683,366	844,679	2,181,759
Net income attributable to shareholders	8,477,127	10,338,420	14,176,280	30,915,851	63,907,678
of the parent	0,4//,12/	10,556,420	14,170,200	30,913,631	03,907,076
PPA expenses under Net income	1,267,719	1,171,264	1,197,633	1,189,561	4,826,167
attributable to shareholders of the	1,207,713	1,1,1,20	1,137,000	2,203,302	1,020,107
Net income attributable to shareholders	9,744,846	11,509,684	15,373,913	32,105,412	68,733,845
of the parent excl. PPA					
Total PPA expenses	1,298,433	1,184,052	1,213,294	1,206,256	4,902,025
Basic EPS (NT\$)	1.97	2.40	3.29	7.20	14.84
Basic EPS (NT\$) excl. PPA	2.26	2.67	3.56	7.48	15.96
Diluted EPS (NT\$)	1.92	2.30	3.20	6.99	14.40
Diluted EPS (NT\$) excl. PPA	2.21	2.57	3.47	7.27	15.50



