

ADVANCED SEMICONDUCTOR ENGINEERING INC  
Form 20-F  
April 24, 2013

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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 20-F

REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
For the fiscal year ended December 31, 2012

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission file number: 001-16125

(Exact name of Registrant as specified in its charter)

Advanced Semiconductor Engineering, Inc.  
(Translation of Registrant's Name into English)

REPUBLIC OF CHINA  
(Jurisdiction of Incorporation or Organization)

26 Chin Third Road  
Nantze Export Processing Zone  
Nantze, Kaohsiung, Taiwan  
Republic of China  
(Address of Principal Executive Offices)

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Taipei, Taiwan, 110  
Republic of China  
Tel: 886-2-8780-5489  
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Email: ir@aseglobal.com

(Name, Telephone, Email and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

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Title of Each Class	Name of Each Exchange on which Registered
Common Shares, par value NT\$10.00 each	The New York Stock Exchange*

\*Traded in the form of American Depositary Receipts evidencing American Depositary Shares, each representing five Common Shares  
(Title of Class)

Securities registered or to be registered pursuant to Section 12(g) of the Act:  
None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:  
None  
(Title of Class)

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Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

7,602,121,666 Common Shares, par value NT\$10 each\*\*

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes  No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes  No

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days.

Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes  No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer  Accelerated filer  Non-accelerated filer

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP  International Financial Reporting Standards as issued by the International Accounting Standards Board  Other

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow:

Item 17  Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes  No

\*\* As a result of the exercise of employee stock options subsequent to December 31, 2012, as of March 31, 2013, we had 7,607,502,906 shares outstanding.

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## USE OF CERTAIN TERMS

All references herein to (i) the “Company,” “ASE Group,” “ASE Inc.,” “we,” “us,” or “our” are to Advanced Semiconductor Engineering, Inc. and, unless the context requires otherwise, its subsidiaries, (ii) “ASE Test Taiwan” are to ASE Test, Inc., a company incorporated under the laws of the ROC, (iii) “ASE Test Malaysia” are to ASE Electronics (M) Sdn. Bhd., a company incorporated under the laws of Malaysia, (iv) “ISE Labs” are to ISE Labs, Inc., a corporation incorporated under the laws of the State of California, (v) “ASE Korea” are to ASE (Korea) Inc., a company incorporated under the laws of the Republic of Korea, (vi) “ASE Japan” are to ASE Japan Co. Ltd., a company incorporated under the laws of Japan, (vii) “ASE Shanghai” are to ASE (Shanghai) Inc., a company incorporated under the laws of the PRC, (viii) “ASE Electronics” are to ASE Electronics Inc., a company incorporated under the laws of the ROC, (ix) “PowerASE” are to PowerASE Technology, Inc., a company incorporated under the laws of the ROC which was merged into ASE Inc. in May 2012, (x) “ASESH AT” are to ASE Assembly & Test (Shanghai) Limited, formerly known as Global Advanced Packaging Technology Limited, or GAP, a company incorporated under the laws of the PRC, (xi) “ASEN” are to Suzhou ASEN Semiconductors Co., Ltd., a company incorporated under the laws of the PRC, (xii) “ASEWH” are to ASE (Weihai), Inc., a company incorporated under the laws of the PRC, (xiii) “ASEKS” are to ASE (KunShan) Inc., a company incorporated under the laws of the PRC, (xiv) “Universal Scientific” or “USI” are to Universal Scientific Industrial Co., Ltd., a company incorporated under the laws of the ROC, and, unless the context requires otherwise, “Universal Scientific Group” are to Universal Scientific and its subsidiaries, (xv) “Universal Scientific Shanghai” are to Universal Scientific Industrial (Shanghai) Co., Ltd., a company incorporated under the laws of the PRC, (xvi) “Hung Ching” are to Hung Ching Development & Construction Co. Ltd., a company incorporated under the laws of the ROC, (xvii) “EEMS Test Singapore” are to EEMS Test Singapore Pte. Ltd., a company incorporated under the laws of Singapore, which changed its name to ASE Singapore II Pte. Ltd. and was subsequently merged into ASE Singapore Pte. Ltd. on January 1, 2011, (xviii) “ASE Material” are to ASE Material Inc., a company previously incorporated under the laws of the ROC that merged into ASE Inc. on August 1, 2004, (xix) “ASE Chung Li” are to ASE (Chung Li) Inc., a company previously incorporated under the laws of the ROC that merged into ASE Inc. on August 1, 2004, (xx) “Yang Ting” are to Yang Ting Tech Co., Ltd., a company incorporated under the laws of the ROC, (xxi) “ASE Test” are to ASE Test Limited, a company incorporated under the laws of Singapore, (xxii) the “SEC” are to the Securities and Exchange Commission of the U.S., (xxiii) the “Securities Act” are to the U.S. Securities Act of 1933, as amended, and (xxiv) the “Exchange Act” are to the U.S. Securities Exchange Act of 1934, as amended.

All references to the “Republic of China,” the “ROC” and “Taiwan” are to the Republic of China, including Taiwan and certain other possessions. All references to “Korea” or “South Korea” are to the Republic of Korea. All references to the “PRC” are to the People’s Republic of China and exclude Taiwan, Macau and Hong Kong.

We publish our financial statements in New Taiwan dollars, the lawful currency of the ROC. In this annual report, references to “United States dollars,” “U.S. dollars” and “US\$” are to the currency of the United States; references to “New Taiwan dollars,” “NT dollars” and “NT\$” are to the currency of the ROC; references to “RMB” are to the currency of the PRC; references to “JP¥” are to the currency of Japan; references to “MYR” are to the currency of Malaysia; references to “SGD” are to the currency of Republic of Singapore; references to “KRW” are to the currency of Republic of Korea; and references to “EUR” are to the currency of the European Union. Unless otherwise noted, all translations from NT dollars to U.S. dollars were made at the exchange rate as set forth in the H.10 weekly statistical release of the Federal Reserve System of the United States (the “Federal Reserve Board”) as of December 31, 2012, which was NT\$29.0500=US\$1.00, and all translations from RMB to U.S. dollars were made at the exchange rate as set forth in the H.10 weekly statistical release of the Federal Reserve Board as of December 31, 2012, which was RMB 6.2301=US\$1.00. All amounts translated into U.S. dollars in this annual report are provided solely for your convenience and no representation is made that the NT dollar/RMB or U.S. dollar amounts referred to herein could have been or could be converted into U.S. dollars or NT dollars/RMB, as the case may be, at any particular rate or at all. On April 12, 2013, the exchange rate between NT dollars and U.S. dollars as set forth in the H.10 weekly statistical release by the Federal Reserve Board was NT\$29.95=US\$1.00. On April 12, 2013, the exchange rate between RMB and U.S. dollars as set



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forth in the H.10 weekly statistical release by the Federal Reserve Board was RMB 6.1914=US\$1.00.

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## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This annual report on Form 20-F contains “forward-looking statements” within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, including statements regarding our future results of operations and business prospects. 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 annual report. We were not involved in the preparation of these projections. 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 annual report. Our actual results of operations, financial condition or business prospects may differ materially from those expressed or implied in these forward-looking statements for a variety of reasons, including risks associated with cyclical and market conditions in the semiconductor or electronic industry; 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 ROC and the PRC; general economic and political conditions; the recent global economic crisis; 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, see “Item 3. Key Information—Risk Factors.”

## PART I

## Item 1. Identity of Directors, Senior Management and Advisers

Not applicable.

## Item 2. Offer Statistics and Expected Timetable

Not applicable.

## Item 3. Key Information

## SELECTED FINANCIAL DATA

The selected consolidated statements of income data and cash flow data for the years ended December 31, 2010, 2011 and 2012, and the selected consolidated balance sheet data as of December 31, 2011 and 2012, set forth below are derived from our audited consolidated financial statements included in this annual report and should be read in conjunction with, and are qualified in their entirety by reference to, these consolidated financial statements, including the notes thereto. The selected consolidated statements of income data and cash flow data for the years ended December 31, 2008 and 2009 and the selected consolidated balance sheet data as of December 31, 2008, 2009 and 2010, set forth below, are derived from our audited consolidated financial statements not included herein and have been classified to conform to the presentation of the consolidated financial statements in this annual report. Our consolidated financial statements have been prepared and presented in accordance with accounting principles generally accepted in the ROC, or ROC GAAP, which differ in some material respects from accounting principles generally accepted in the United States of America, or U.S. GAAP. See note 32 to our consolidated financial statements for a description of the significant differences between ROC GAAP and U.S. GAAP for the periods covered by these consolidated financial statements.

	As of and for the Year Ended December 31,					
	2008	2009	2010	2011	2012	US\$
	NT\$	NT\$	NT\$	NT\$	NT\$	
	(in millions, except earnings per share and per ADS data)					
ROC GAAP:						
Income Statement Data:						
Net revenues	94,430.9	85,775.3	188,742.8	185,347.2	193,972.4	6,677.2
Cost of revenues(1)	(72,347.7)	(67,433.6)	(148,198.2)	(150,338.4)	(157,348.6)	(5,416.5)
Gross profit	22,083.2	18,341.7	40,544.6	35,008.8	36,623.8	1,260.7
Total operating expenses	(10,524.1)	(9,131.8)	(16,445.6)	(18,187.6)	(18,862.4)	(649.3)
Income from operations	11,559.1	9,209.9	24,099.0	16,821.2	17,761.4	611.4
Non-operating income (expense), net(1)	(2,083.3)	(821.5)	(1,275.4)	175.9	(1,170.9)	(40.3)
Income before income tax	9,475.8	8,388.4	22,823.6	16,997.1	16,590.5	571.1
Income tax expense	(2,268.3)	(1,484.9)	(3,628.7)	(3,018.2)	(3,041.6)	(104.7)
Net income	7,207.5	6,903.5	19,194.9	13,978.9	13,548.9	466.4
Attributable to						
Shareholders of the parent	6,160.1	6,744.6	18,337.5	13,726.0	13,091.4	450.7
Minority interest	1,047.4	158.9	857.4	252.9	457.5	15.7
	7,207.5	6,903.5	19,194.9	13,978.9	13,548.9	466.4
Earnings per common share(2):						

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Basic	0.82	0.93	2.44	1.83	1.76	0.06
Diluted	0.80	0.92	2.39	1.78	1.71	0.06
Dividends per common share(3)	2.00	0.50	1.36	1.80	2.05	0.07
Earnings per equivalent ADS(2):						
Basic	4.09	4.67	12.21	9.13	8.79	0.30
Diluted	4.00	4.61	11.97	8.91	8.57	0.30
Number of common shares(4):						
Basic	7,538.3	7,216.8	7,506.5	7,514.7	7,445.5	7,445.5
Diluted	7,628.4	7,279.3	7,601.9	7,700.0	7,575.9	7,575.9
Number of equivalent ADSs						
Basic	1,507.7	1,443.4	1,501.3	1,502.9	1,489.1	1,489.1
Diluted	1,525.7	1,455.9	1,520.4	1,540.0	1,515.2	1,515.2

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	As of and for the Year Ended December 31,					US\$
	2008 NT\$	2009 NT\$	2010 NT\$	2011 NT\$	2012 NT\$	
(in millions, except earnings per share and per ADS data)						
<b>Balance Sheet Data:</b>						
Current assets	46,347.2	61,398.7	85,598.9	90,131.7	98,042.3	3,375.0
Long-term investments	4,327.0	5,160.0	2,400.1	2,220.7	2,365.9	81.4
Property, plant and equipment, net	84,758.0	79,363.9	99,853.9	111,779.0	126,150.3	4,342.5
Intangible assets	12,592.0	12,232.7	15,248.1	15,772.5	15,801.9	544.0
Other assets	4,039.1	3,819.5	5,038.7	3,974.2	4,143.7	142.6
Total assets	152,063.3	161,974.8	208,139.7	223,878.1	246,504.1	8,485.5
Short-term borrowings(5)	11,473.2	13,960.3	17,173.5	26,426.1	40,098.7	1,380.3
Long-term liabilities(6)	51,495.5	49,306.0	52,533.8	50,425.1	44,591.7	1,535.0
Other liabilities(7)	17,133.8	23,994.8	46,593.1	44,744.4	49,354.6	1,699.0
Total liabilities	80,102.5	87,261.1	116,300.4	121,595.6	134,045.0	4,614.3
Capital stock	56,904.3	54,798.8	60,519.9	67,535.6	75,941.5	2,614.2
Minority interest in consolidated subsidiaries	2,288.7	3,097.7	3,283.0	1,113.0	2,944.2	101.4
Total shareholders' equity	71,960.8	74,713.7	91,839.3	102,282.5	112,459.1	3,871.2
<b>Cash Flow Data:</b>						
Net cash outflow from acquisition of property, plant and equipment	(18,583.3 )	(11,445.6 )	(34,109.1 )	(29,417.9 )	(39,301.3 )	(1,352.9 )
Depreciation and amortization	17,244.9	17,638.0	19,854.5	22,945.4	23,414.3	806.0
Net cash inflow from operating activities	30,728.8	15,517.2	36,965.1	31,936.7	29,017.9	998.9
Net cash outflow from investing activities	(36,359.2 )	(15,980.7 )	(36,085.5 )	(32,030.7 )	(40,094.0 )	(1,380.2 )
Net cash inflow (outflow) from financing activities	13,862.4	(2,778.5 )	1,701.5	(342.6 )	8,455.8	291.1
<b>Segment Data:</b>						
<b>Net revenues:</b>						
Packaging	73,391.6	67,935.5	101,071.3	102,677.3	104,298.3	3,590.3
Testing	19,021.4	15,795.1	21,957.0	21,932.2	22,657.0	779.9
Electronic manufacturing services(8)	–	–	59,577.4	57,850.4	62,747.7	2,160.0
Others	2,017.9	2,044.7	6,137.1	2,887.3	4,269.4	147.0
<b>Gross profit:</b>						
Packaging	14,474.6	12,547.9	21,320.6	20,206.4	19,827.6	682.5
Testing	6,255.3	4,453.0	8,245.7	6,978.6	7,604.5	261.8
Electronic manufacturing services(8)	–	–	6,482.2	6,350.4	7,283.1	250.7
Others	1,353.3	1,340.8	4,496.1	1,473.4	1,908.5	65.7

	As of and for the Year Ended December 31,					US\$
	2008 NT\$	2009 NT\$	2010 NT\$	2011 NT\$	2012 NT\$	
(in millions, except earnings per share and per ADS data)						
<b>U.S. GAAP</b>						
<b>Income Statement Data:</b>						
Net revenues	94,430.9	85,775.3	188,742.8	185,347.2	193,972.4	6,677.2
Cost of revenues	(73,001.9)	(68,350.9)	(148,887.5)	(150,793.7)	(157,773.2)	(5,431.1 )

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Gross profit	21,429.0	17,424.4	39,855.3	34,553.5	36,199.2	1,246.1
Total operating expenses	(10,615.0)	(9,431.5 )	(16,877.3 )	(18,450.9 )	(19,203.1 )	(661.0 )
Income from operations	10,814.0	7,992.9	22,978.0	16,102.6	16,996.1	585.1
Non-operating income (expense), net	(1,664.9 )	(679.5 )	504.5	647.4	(1,202.8 )	(41.4 )
Income before income tax	9,149.1	7,313.4	23,482.5	16,750.0	15,793.3	543.7
Income tax expense	(2,503.5 )	(1,793.0 )	(4,581.5 )	(2,969.6 )	(2,866.0 )	(98.7 )
Net income	6,645.6	5,520.4	18,901.0	13,780.4	12,927.3	445.0
Attributable to						
Shareholders of the parent	5,492.1	5,317.5	18,158.2	13,532.5	12,477.6	429.5
Noncontrolling interest	1,153.5	202.9	742.8	247.9	449.7	15.5
	6,645.6	5,520.4	18,901.0	13,780.4	12,927.3	445.0

	As of and for the Year Ended December 31,					US\$
	2008 NT\$	2009 NT\$	2010 NT\$	2011 NT\$	2012 NT\$	
(in millions, except earnings per share and per ADS data)						
Earnings per common share(2):						
Basic	0.73	0.74	2.42	1.80	1.68	0.06
Diluted	0.72	0.73	2.39	1.79	1.67	0.06
Earnings per equivalent ADS(2):						
Basic	3.66	3.68	12.09	9.00	8.38	0.29
Diluted	3.61	3.65	11.97	8.93	8.33	0.29
Number of common shares(9):						
Basic	7,504.5	7,216.8	7,506.5	7,514.7	7,445.5	7,445.5
Diluted	7,555.6	7,241.7	7,542.8	7,575.7	7,490.6	7,490.6
Number of equivalent ADSs(9):						
Basic	1,500.9	1,443.4	1,501.3	1,502.9	1,489.1	1,489.1
Diluted	1,511.1	1,448.3	1,508.6	1,515.1	1,498.1	1,498.1
Balance Sheet Data:						
Current assets	46,347.2	61,398.7	85,598.9	89,610.0	97,638.2	3,361.0
Long-term investments	2,842.7	3,341.2	1,343.4	1,185.6	1,250.7	43.1
Property, plant and equipment, net	82,694.5	77,927.1	99,216.9	110,927.5	125,165.0	4,308.6
Intangible assets	12,940.6	12,522.8	15,360.8	15,896.2	15,848.0	545.6
Other assets	3,856.5	2,684.5	3,453.2	2,472.1	2,754.8	94.8
Total assets	148,681.5	157,874.3	204,973.2	220,091.4	242,656.7	8,353.1
Short-term borrowings(5)	11,473.2	13,960.3	17,173.5	26,426.1	40,098.7	1,380.3
Long-term liabilities(6)	51,495.5	49,306.0	52,533.8	50,225.1	44,591.7	1,535.0
Other liabilities(7)	18,307.1	25,092.3	48,813.7	46,822.3	51,522.1	1,773.6
Total liabilities	81,275.8	88,358.6	118,521.0	123,473.5	136,212.5	4,688.9
Capital stock	56,904.3	54,798.8	60,519.9	67,535.6	75,941.5	2,614.2
Equity attributable to shareholders of the parent	65,303.0	66,555.5	82,959.0	95,334.4	103,337.4	3,557.2
Noncontrolling interest in consolidated subsidiaries	2,102.7	2,960.2	3,493.2	1,283.5	3,106.8	107.0

- (1) Effective January 1, 2009, we adopted the revised ROC Statement of Financial Accounting Standards, or SFAS, No. 10 "Accounting for Inventories." Abnormal cost, write-downs of inventories and any reversal of write-downs are recorded as cost of revenues from non-operating expenses. Information in this annual report from our consolidated statements of income for the year ended December 31, 2008 has been adjusted to reflect the reclassification.
- (2) The denominators for diluted earnings per common share and diluted earnings per equivalent ADS are calculated to account for the potential diluted factors, such as the exercise of options and conversion of our convertible bonds into our common shares and American depositary shares, or ADSs.
- (3) Dividends per common share issued as a cash dividend, a stock dividend and distribution from capital surplus.
- (4) Represents the weighted average number of shares after retroactive adjustments to give effect to stock dividends. Common shares held by consolidated subsidiaries are classified as "treasury stock," and are deducted from the number of common shares outstanding.
- (5) Includes current portions of bonds payable, long-term bank loans and capital lease obligations.

- (6) Excludes current portions of bonds payable, long-term bank loans and capital lease obligations.
- (7) Includes current liabilities other than short-term borrowings.
- (8) We began providing electronic manufacturing services as a result of our acquisition of the controlling interest of Universal Scientific in February 2010.
- (9) Represents the weighted average number of common shares after retroactive adjustments to give effect to stock dividends.



## Exchange Rates

Fluctuations in the exchange rate between NT dollars and U.S. dollars will affect the U.S. dollar equivalent of the NT dollar price of the common shares on the Taiwan Stock Exchange and, as a result, will likely affect the market price of the ADSs. Fluctuations will also affect the U.S. dollar conversion by the depositary under our ADS deposit agreement referred to below of cash dividends paid in NT dollars on, and the NT dollar proceeds received by the depositary from any sale of, common shares represented by ADSs, in each case, according to the terms of the deposit agreement dated September 29, 2000 and as amended and supplemented from time to time among us, Citibank N.A., as depositary, and the holders and beneficial owners from time to time of the ADSs, which we refer to as the deposit agreement.

The following table sets forth, for the periods indicated, information concerning the number of NT dollars for which one U.S. dollar could be exchanged. For periods prior to January 1, 2009, the exchange rates reflected the noon buying rate for cable transfers in NT dollars as certified for customs purposes by the Federal Reserve Bank of New York. For periods after January 1, 2009, the exchange rates reflect the exchange rates set forth in the H.10 statistical release of the Federal Reserve Board.

	Exchange Rate			Period-End
	Average(1)	High	Low	
2008	31.51	33.58	29.99	32.76
2009	32.96	35.21	31.95	31.95
2010	31.40	32.43	29.14	29.14
2011	29.42	30.67	28.50	30.27
2012	29.47	30.28	28.96	29.05
October	29.24	29.31	29.15	29.20
November	29.11	29.26	28.96	29.07
December	29.04	29.10	29.00	29.05
2013				
January	29.10	29.54	28.93	29.54
February	29.63	29.73	29.52	29.67
March	29.74	29.88	29.63	29.81
April (through April 12, 2013)	29.74	30.06	29.86	29.95

(1) Annual averages were calculated by using the average of the exchange rates on the last day of each month during the relevant year. Monthly averages were calculated by using the average of the daily rates during the relevant month.

On April 12, 2013, the exchange rate as set forth in the H.10 weekly statistical release by the Federal Reserve Board was NT\$29.95 =US\$1.00.

## CAPITALIZATION AND INDEBTEDNESS

Not applicable.

## REASON FOR THE OFFER AND USE OF PROCEEDS

Not applicable.



## RISK FACTORS

### Risks Relating to Our Business

Since we are dependent on the highly cyclical semiconductor and electronic industries and conditions in the markets for the end-use applications of our products, our revenues and net income may fluctuate significantly.

Our business is affected by market conditions in the highly cyclical semiconductor and electronic industries. Most of our customers operate in this industry, and variations in order levels from our customers and service fee rates may result in volatility in our revenues and net income. From time to time, the semiconductor and electronic industries have experienced significant, and sometimes prolonged, downturns. As our business is, and will continue to be, dependent on the requirements for independent packaging, testing and electronic manufacturing services, any future downturn in the industry would reduce demand for our services. For example, in the fourth quarter of 2008, the global economic crisis resulted in a significant deterioration in demand for our customers' products, which in turn affected demand for our services and adversely affected our operating results. Although demand has recovered, we expect there to be continued downward pressure on our average selling prices and continued volatility with respect to our sales volumes in the future. If we cannot reduce our costs or adjust our product mix to sufficiently offset any decline in sales volumes, our profitability will suffer and we may incur losses.

Market conditions in the semiconductor and electronic industries depend to a large degree on conditions in the markets for the end-use applications of various products, such as communications, computing and consumer electronics products. Any deterioration of conditions in the markets for the end-use applications would reduce demand for our services, and would likely have a material adverse effect on our financial condition and results of operations. In 2012, approximately 51.9%, 12.2% and 35.5% of our net revenues from packaging and testing were attributed to the packaging and testing of semiconductors used in communications, computing and consumer electronics/industrial/automotive applications, respectively. In the same year, approximately 36.8%, 24.3%, 14.2% , 15.5% and 7.9% of our net revenues from electronic manufacturing services were attributed to the communications, computing, consumer electronics applications, industrial and automotive applications, respectively. Each of the markets for end-use applications is subject to intense competition and significant shifts in demand, which could put pricing pressure on our services and adversely affect our revenues and net income.

A reversal or slowdown in the outsourcing trend for semiconductor packaging and testing services and electronic manufacturing services could adversely affect our growth prospects and profitability.

Semiconductor manufacturers that have their own in-house packaging and testing capabilities, known as integrated device manufacturers and original equipment manufacturers, have increasingly outsourced stages of the production process, including packaging, testing, electronic manufacturing and assembly, to independent companies in order to reduce costs, eliminate product complexity and meet fast-to-market requirements. In addition, the availability of advanced independent semiconductor manufacturing services has also enabled the growth of so-called "fabless" semiconductor companies that focus exclusively on design and marketing and outsource their manufacturing, packaging and testing requirements to independent companies. We cannot assure you that these manufacturers and companies will continue to outsource their packaging, testing and manufacturing requirements to third parties like us. Furthermore, during an economic downturn, these integrated device manufacturers typically rely more on their own in-house packaging and testing capabilities, therefore decreasing their need to outsource. A reversal of, or a slowdown in, this outsourcing trend could result in reduced demand for our services and adversely affect our growth prospects and profitability.

Any global economic downturn could adversely affect the demand for our products and services, and a protracted global economic crisis would have a material adverse effect on us.

The global financial markets experienced significant disruptions in 2008 and the United States, Europe and other economies went into recession. The recovery from the lows of 2008 and 2009 was uneven and it is facing new challenges, including the escalation of the European sovereign debt crisis since 2011. It is unclear whether the European sovereign debt crisis will be contained and what effects it may have. There is considerable uncertainty over the long-term effects of the expansionary monetary and fiscal policies that have been adopted by the central banks and financial authorities of some of the world's leading economies. There have also been concerns over unrest

in the Middle East and Africa, which have resulted in higher oil prices and significant market volatility. Any economic downturn or crisis may also cause our customers to do the following:

- cancel or reduce planned expenditures for our products and services;
- seek to lower their costs by renegotiating their contracts with us;
- consolidate the number of suppliers they use which may result in our loss of customers; and
- switch to lower-priced products or services provided by our competitors.

Any uncertainty or significant volatility in global economic conditions may also make it difficult for our customers to accurately forecast and plan future business activities and may have a material adverse effect on us.

If we are unable to compete favorably in the highly competitive markets of semiconductor packaging and testing and electronic manufacturing services, our revenues and net income may decrease.

The markets of semiconductor packaging and testing and electronic manufacturing services are very competitive. We face competition from a number of sources, including other independent semiconductor packaging and testing companies, especially those that offer turnkey packaging and testing services, and other electronic manufacturing services providers which may have large-scale manufacturing capabilities and can quickly react to market changes. We believe that the principal competitive factors are:

- technological expertise;
- price;
- the ability to provide total solutions to our customers, including integrated design, manufacturing, packaging and testing and electronic manufacturing services;
  - range of package types and testing platforms available;
  - the ability to work closely with our customers at the product development stage;
    - responsiveness and flexibility;
    - fast-to-market product development;
    - capacity;
    - diversity in facility locations; and
    - production yield.

We face increasing competition, as most of our customers obtain services from more than one source. In addition, some of our competitors may have access to more advanced technologies and greater financial and other resources than we do. Any erosion in the prices for our services and/or products could cause our revenues and net income to decrease and have a material adverse effect on our financial condition and results of operations.

Our profitability depends on our ability to respond to rapid technological changes in the semiconductor industry.

The semiconductor industry is characterized by rapid increases in the diversity and complexity of semiconductors. As a result, we expect that we will need to constantly offer more sophisticated packaging and testing technologies and processes in order to respond to competitive industry conditions and customer requirements. If we fail to develop, or obtain access to, advances in packaging or testing technologies or processes, we may become less competitive and less profitable. In addition, advances in technology typically lead to declining average selling prices for semiconductors packaged or tested with older technologies or processes. As a result, if we

cannot reduce the costs associated with our services, the profitability of a given service and our overall profitability may decrease over time.

Our operating results are subject to significant fluctuations, which could adversely affect the market value of your investment.

Our operating results have varied significantly from period to period and may continue to vary in the future. Downward fluctuations in our operating results may result in decreases in the market price of our common shares and the ADSs. Among the more important factors affecting our quarterly and annual operating results are the following:

- changes in general economic and business conditions, particularly the cyclical nature of the semiconductor and electronic industries and the markets served by our customers;
  - our ability to quickly adjust to unanticipated declines or shortfalls in demand and market prices;
    - changes in prices for our products or services;
  - volume of orders relative to our packaging, testing and manufacturing capacity;
    - changes in costs and availability of raw materials, equipment and labor;
    - our ability to obtain or develop substitute raw materials with lower cost;
    - timing of capital expenditures in anticipation of future orders;
  - our ability to acquire or design and produce advanced and cost-competitive interconnect materials, and provide integrated solutions for electronic manufacturing services;
- fluctuations in the exchange rate between the NT dollar and foreign currencies, especially the U.S. dollar; and
- typhoons, earthquakes, drought, epidemics, tsunamis and other natural disasters, as well as industrial and other incidents such as fires and power outages.

Due to the factors listed above, our future operating results or growth rates may be below the expectations of research analysts and investors. If so, the market price of our common shares and the ADSs, and thus the market value of your investment, may fall.

If we are not successful in maintaining our in-house interconnect materials capabilities, our margins and profitability may be adversely affected.

We expect that we will need to maintain our interconnect materials designs and production processes in order to respond to competitive industry conditions and customer requirements. In particular, our competitive position will depend on our ability to design and produce interconnect materials that are comparable to or better than those produced by independent suppliers and others. Many of these independent suppliers have dedicated greater resources than we have for the research and development and design and production of interconnect materials. In addition, we may not be able to acquire the technology and personnel that would enable us to maintain our in-house expertise and our design and production capabilities. For more information on our interconnect materials operations, see “Item 4. Information on the Company—Business Overview—Principal Products and Services—Packaging Services—Interconnect Materials.” If we are unable to maintain our in-house interconnect materials expertise to offer interconnect materials

that meet the requirements of our customers, we may become less competitive and our margins and profitability may suffer as a result.



Due to our high percentage of fixed costs, we may be unable to maintain our gross margin at past levels if we are unable to achieve relatively high capacity utilization rates.

Our operations, in particular our testing operations, are characterized by relatively high fixed costs. We expect to continue to incur substantial depreciation and other expenses in connection with our acquisitions of equipment and facilities. Our profitability depends not only on the pricing levels for our services or products, but also on utilization rates for our machinery and equipment, commonly referred to as “capacity utilization rates.” In particular, increases or decreases in our capacity utilization rates can significantly affect gross margins since the unit cost generally decreases as fixed costs are allocated over a larger number of units. In periods of low demand, we experience relatively low capacity utilization rates in our operations, which leads to reduced margins. For example, in the fourth quarter of 2008, we experienced lower than anticipated utilization rates in our operations due to a significant decline in worldwide demand for our packaging and testing services, which resulted in reduced margins during that period. Although capacity utilization rates have recovered since 2009, we cannot assure you that we will be able to maintain or surpass our past gross margin levels if we cannot consistently achieve or maintain relatively high capacity utilization rates.

If we are unable to manage our expansion or investments effectively, our growth prospects may be limited and our future profitability and core business operations may be adversely affected.

We have significantly expanded our operations through both organic growth and acquisitions in recent years. For example, we acquired the controlling interest of Universal Scientific through a tender offer in February 2010 and EEMS Test Singapore in August 2010 (EEMS Test Singapore was subsequently merged into ASE Singapore Pte. Ltd. on January 1, 2011). We also acquired Yang Ting in January 2012 and merged our subsidiary PowerASE Technology Inc. into ASE Inc. in May 2012. We expect that we will continue to expand our operations in the future. The purpose of our expansion is mainly to provide total solutions to existing customers or attract new customers and broaden our product range for a variety of end-use applications. However, rapid expansion may place a strain on our managerial, technical, financial, operational and other resources. As a result of our expansion, we have implemented and will continue to implement additional operational and financial controls and hire and train additional personnel. Any failure to manage our growth effectively could lead to inefficiencies and redundancies and result in reduced growth prospects and profitability.

In addition, we have recently made investments in real estate development businesses mostly in China. The PRC property market is volatile and may experience undersupply or oversupply and property price fluctuations. The central and local governments frequently adjust monetary and other economic policies to prevent and curtail the overheating of the economy. Such policies may lead to changes in market conditions, including price instability and imbalance of supply and demand in respect of office, residential, retail, entertainment, cultural and intellectual properties. We may continue to make investments in this area in the future and our diversification in this industry may put pressure on our managerial, financial, operational and other resources. Our exposure to risks related to real estate development may also increase over time as a result of our expansion into such a business. There can be no assurance that our investments in such a business will yield the anticipated returns and that our expansion into such a business, including the resulting diversion of management’s attention, will not adversely affect our core business operations.

The packaging and testing businesses are capital intensive. If we cannot obtain additional capital when we need it, our growth prospects and future profitability may be adversely affected.

The packaging and testing businesses are capital intensive. We will need capital to fund the expansion of our facilities as well as fund our research and development activities in order to remain competitive. We believe that our existing cash, marketable securities, expected cash flow from operations and existing credit lines under our loan facilities will be sufficient to meet our capital expenditures, working capital, cash obligations under our existing debt and lease

arrangements, and other requirements for at least the next twelve months. However, future capacity expansions or market or other developments may cause us to require additional funds. Our ability to obtain external financing in the future is subject to a variety of uncertainties, including:

- our future financial condition, results of operations and cash flows;

- general market conditions for financing activities by semiconductor or electronics companies; and
  - economic, political and other conditions in Taiwan and elsewhere.

If we are unable to obtain funding in a timely manner or on acceptable terms, our growth prospects and future profitability may decline.

Restrictive covenants and broad default provisions in our existing debt agreements may materially restrict our operations as well as adversely affect our liquidity, financial condition and results of operations.

We are a party to numerous loan and other agreements relating to the incurrence of debt, many of which include restrictive covenants and broad default provisions. In general, covenants in the agreements governing our existing debt, and debt we may incur in the future, may materially restrict our operations, including our ability to incur debt, pay dividends, make certain investments and payments, other than in connection with restructurings of consolidated entities, and encumber or dispose of assets. In addition, any global economic deterioration or ineffective expansion may cause us to incur significant net losses or force us to assume considerable liabilities. We cannot assure you that we will be able to remain in compliance with our financial covenants which, as a result, may lead to a default. This may thereby restrict our ability to access unutilized credit facilities or the global capital markets to meet our liquidity needs. Furthermore, a default under one agreement by us or one of our subsidiaries may also trigger cross-defaults under our other agreements. In the event of default, we may not be able to cure the default or obtain a waiver on a timely basis. An event of default under any agreement timely governing our existing or future debt, if not cured or waived, could have a material adverse effect on our liquidity, financial condition and results of operations.

We have on occasion failed to comply with certain financial covenants in some of our loan agreements. Such non-compliance may also have, through broadly worded cross-default provisions, resulted in default under some of the agreements governing our other existing debt. For example, we failed to comply with certain financial covenants in some of our loan agreements as a result of our acquisition of the controlling interest of Universal Scientific in February 2010, for which we have timely obtained waivers from our counterparties. If we are unable to timely remedy any of our non-compliance under such loan agreements or obtain applicable waivers or amendments, we would breach our financial covenants and our financial condition would be adversely affected. As of March 31, 2013, no lender has sought to declare a default or enforce remedies in respect of our existing debt as a result of cross-default provisions, breaches of financial covenants or otherwise, although we cannot provide any assurance that they will not take action in the future.

We depend on select personnel and could be affected by the loss of their services.

We depend on the continued service of our executive officers and skilled technical and other personnel. Our business could suffer if we lose the services of any of these personnel and cannot adequately replace them. Although some of these management personnel have entered into employment agreements with us, they may nevertheless leave before the expiration of these agreements. We are not insured against the loss of any of our personnel. In addition, we may be required to increase substantially the number of these employees in connection with our expansion plans, and there is intense competition for their services in this industry. We may not be able to either retain our present personnel or attract additional qualified personnel as and when needed. In addition, we may need to increase employee compensation levels in order to attract and retain our existing officers and employees and the additional personnel that we expect to require. Furthermore, a portion of the workforce at our facilities in Taiwan are foreign workers employed by us under work permits which are subject to government regulations on renewal and other terms. Consequently, our business could also suffer if the Taiwan regulations relating to the employment of foreign workers were to become significantly more restrictive or if we are otherwise unable to attract or retain these workers at a reasonable cost.

If we are unable to obtain additional packaging and testing equipment or facilities in a timely manner and at a reasonable cost, our competitiveness and future profitability may be adversely affected.

The semiconductor packaging and testing businesses are capital intensive and require significant investment in expensive equipment manufactured by a limited number of suppliers. The market for semiconductor packaging and testing equipment is characterized, from time to time, by intense demand, limited supply and long delivery cycles.

Our operations and expansion plans depend on our ability to obtain a significant amount of such equipment from a limited number of suppliers. From time to time we have also leased certain equipment. We have no binding supply agreements with any of our suppliers and acquire our packaging and testing equipment on a purchase order basis, which exposes us to changing market conditions and other substantial risks. For example, shortages of capital equipment could result in an increase in the price of equipment and longer delivery times. Semiconductor packaging and testing also require us to operate sizeable facilities. If we are unable to obtain equipment or facilities in a timely manner, we may be unable to fulfill our customers' orders, which could adversely affect our growth prospects as well as financial condition and results of operations. See "Item 4. Information on the Company—Business Overview—Equipment."

Fluctuations in exchange rates could result in foreign exchange losses.

Currently, the majority of our revenues are denominated in U.S. dollars, with a portion denominated in NT dollars and Japanese yen. Our cost of revenues and operating expenses, on the other hand, are incurred in several currencies, primarily NT dollars, U.S. dollars, RMB, Japanese yen, Korean won, as well as, to a lesser extent, Singapore dollars and Malaysian ringgit. In addition, a substantial portion of our capital expenditures, primarily for the purchase of packaging and testing equipment, has been, and is expected to continue to be, denominated in U.S. dollars, with the remainder in Japanese yen. Fluctuations in exchange rates, primarily among the U.S. dollar against the NT dollar, the Japanese yen and RMB, will affect our costs and operating margins. In addition, these fluctuations could result in exchange losses and increased costs in NT dollar and other local currency terms. Despite hedging and mitigating techniques implemented by us, fluctuations in exchange rates have affected, and may continue to affect, our financial condition and results of operations. Although we recognized net foreign exchange gains of NT\$317.6 million, NT\$36.2 million and NT\$965.4 million (US\$33.2 million) in 2010, 2011 and 2012, respectively, we cannot assure you that we will achieve or sustain foreign exchange gains in the future. See "Item 11. Quantitative and Qualitative Disclosures about Market Risk—Market Risk—Foreign Currency Exchange Rate Risk."

The loss of a large customer or disruption of our strategic alliance or other commercial arrangements with semiconductor foundries and providers of other complementary semiconductor manufacturing services may result in a decline in our revenues and profitability.

Although we have over 200 customers for our businesses, we have derived and expect to continue to derive a large portion of our revenues from a small group of customers during any particular period due in part to the concentration of market share in the semiconductor and electronic industries. Our five largest customers together accounted for approximately 26.0%, 26.8% and 31.2% of our net revenues in 2010, 2011 and 2012, respectively. No single customer accounted for more than 10% of our net revenues in 2010, 2011 and 2012. The demand for our services from a customer is directly dependent upon that customer's level of business activity, which could vary significantly from year to year. Our key customers typically operate in the cyclical semiconductor and electronic business and, in the past, have varied, and may vary in the future, order levels significantly from period to period. Some of these companies are relatively small, have limited operating histories and financial resources, and are highly exposed to the cyclicity of the industry. We cannot assure you that these customers or any other customers will continue to place orders with us in the future at the same levels as in past periods. The loss of one or more of our significant customers, or reduced orders by any one of them, and our inability to replace these customers or make up for such orders could adversely affect our revenues and profitability. In addition, we have in the past reduced, and may in the future be requested to reduce, our prices to limit the level of order cancellations. Any price reduction would likely reduce our margins and profitability.

Since 1997, we have maintained a strategic alliance with Taiwan Semiconductor Manufacturing Company Limited, or TSMC, one of the world's largest dedicated semiconductor foundries. TSMC designates us as their non-exclusive preferred provider of packaging and testing services for semiconductors manufactured by TSMC. Any strategic

alliances, as well as our other commercial arrangements with providers of other complementary semiconductor manufacturing services, enable us to offer total semiconductor manufacturing solutions to our customers. Any strategic alliances and our other commercial arrangements may be terminated at any time. Any such termination, and our failure to enter into substantially similar strategic alliances or commercial arrangements, may adversely affect our competitiveness and our revenues and profitability.

Our revenues and profitability may decline if we are unable to obtain adequate supplies of raw materials in a timely manner and at a reasonable price.

Our operations, such as packaging operations, substrate operations and electronic manufacturing services, require that we obtain adequate supplies of raw materials on a timely basis. Shortages in the supply of raw materials have in the past resulted in occasional price increases and delivery delays. In addition, the operations of some of our suppliers are vulnerable to natural disasters, such as earthquakes and typhoons, the occurrences of which may deteriorate and prolong the shortage or increase the uncertainty of the supply of raw materials. For example, on March 11, 2011, a major earthquake occurred off the coast of Japan resulting in a large tsunami and radiation leak at the Fukushima nuclear power plant. We experienced a disruption to the supply of raw materials from Japan for about three to four weeks due to the fear of radiation contamination and the reduction or postponement in production by some of our Japanese suppliers. Although the purchase of supplies from Japan has been restored to the previous level, we cannot assure you that we will not suffer long-term from the impact of the earthquake and the tsunami. In addition, further earthquakes, aftershocks thereof or other disasters in Japan or affecting any regions in which we operate may cause a decline in our sales. Any of the above events or developments may have a material adverse effect on our business, results of operations and financial condition.

Raw materials such as advanced substrates are prone to supply shortages since such materials are produced by a limited number of suppliers such as Kinsus Interconnect Technology Corporation, Nanya Printed Circuit Board Corporation and Unimicron Technology Corp. Our operations conducted through our wholly-owned subsidiaries ASE Electronics and ASE Shanghai have improved our ability to obtain advanced substrates on a timely basis and at a reasonable cost. In 2012, our interconnect materials operations supplied approximately 29.8% of our consolidated substrate requirements by value. We do not expect that our internal interconnect materials operations will be able to meet all of our interconnect materials requirements. Consequently, we will remain dependent on market supply and demand for our raw materials. In addition, recent fluctuations in prices of precious metals, such as gold, have also affected the price at which we have been able to purchase the principal raw materials we use in our packaging processes. We cannot guarantee that we will not experience shortages in the near future or that we will be able to obtain adequate supplies of raw materials in a timely manner or at a reasonable price. Our revenues and net income could decline if we are unable to obtain adequate supplies of high quality raw materials in a timely manner or if there are significant increases in the costs of raw materials that we cannot pass on to our customers.

New regulations related to conflict minerals could adversely affect our business, financial condition and results of operations.

The Dodd-Frank Wall Street Reform and Consumer Protection Act contains provisions to improve transparency and accountability concerning the supply of certain minerals, known as conflict minerals, which are defined as cassiterite, columbite-tantalite, gold, wolframite or their derivatives and other minerals determined by the U.S. government to be financing conflict in the Democratic Republic of Congo and adjoining countries. As a result, in August 2012 the SEC adopted annual disclosure and reporting requirements for those companies who use conflict minerals in their products. These new requirements will require companies that manufacture or contract to manufacture products for which conflict minerals are necessary to the functionality or production to begin scrutinizing the origin of conflict minerals in their products starting from January 1, 2013, and file a new form, Form SD, containing the conflict minerals disclosure by May 31 for the prior calendar year, beginning May 31, 2014. We believe certain conflict minerals identified under the conflict minerals rules issued by the SEC are used in our products, and therefore we are subject to the new disclosure requirements related to the conflict minerals. There will be costs associated with complying with these disclosure requirements, including costs for diligence to determine the sources of conflict minerals used in our products and other potential changes to products, processes or sources of supply as a consequence of such verification activities. The implementation of these rules could adversely affect the sourcing, supply and pricing of materials used in our products. As there may be only a limited number of suppliers offering “conflict free” minerals, we cannot be sure

that we will be able to obtain necessary “conflict free” minerals from such suppliers in sufficient quantities or at competitive prices. Also, we may face adverse effects to our reputation if we determine that certain of our products contain minerals not determined to be conflict free or if we are unable to sufficiently verify the origins for all conflict minerals used in our products through the procedures we may implement.



System failures could harm our business, financial condition and results of operations.

Our systems are vulnerable to damage or interruption from earthquakes, terrorist attacks, floods, fires, power loss, telecommunications failures, computer viruses, computer denial of service attacks or other attempts to harm our system, and similar events. Some of our data centers are located in areas with a high risk of major earthquakes. Our data centers are also subject to break-ins, sabotage and intentional acts of vandalism, and to potential disruptions if the operators of these facilities have financial difficulties. Some of our systems are not fully redundant, and our disaster recovery planning cannot account for all eventualities. The occurrence of a natural disaster, a decision to close a facility we are using without adequate notice for financial reasons or other unanticipated problems at our data centers could result in lengthy interruptions in our service. Any damage to or failure of our systems could result in interruptions in our service. Interruptions in our service could materially and adversely affect our business, financial condition and results of operations.

Any environmental claims or failure to comply with any present or future environmental regulations, as well as any fire or other industrial accident, may require us to spend additional funds and may materially and adversely affect our financial condition and results of operations.

We are subject to various laws and regulations relating to the use, storage, discharge and disposal of chemical by-products of, and water used in, our packaging and interconnect materials production processes, and the emission of volatile organic compounds and the discharge and disposal of solid industrial wastes from electronic manufacturing services operations. Although we have not suffered material environmental claims in the past, the failure to comply with any present or future regulations could result in the assessment of damages or imposition of fines against us, suspension of production or a cessation of our operations. New regulations could require us to acquire costly equipment or to incur other significant expenses that we may not be able to pass on to our customers. Additionally, any failure on our part to control the use, or adequately restrict the discharge, of hazardous substances could subject us to future liabilities that may have a material adverse effect on our financial condition and results of operations. Any failures to comply with the environmental standards for our products, such as Directive 2002/95/EC, see “Item 4. Business Overview—Raw Materials and Suppliers—Packaging,” may have a material adverse effect on our results of operations.

Climate change, other environmental concerns and green initiatives also presents other commercial challenges, economic risks and physical risks that could harm our results of operations or affect the manner in which we conduct our business.

Increasing climate change and environmental concerns could affect the results of our operations if any of our customers request that we exceed any standards set for environmentally compliant products and services, or if raw materials and/or products are required to meet strict inspection standards with respect to any radioactive contamination as a result of concerns arising from radiation leaking incidents, such as the radiation leak which occurred in March 2011 in Japan. If we are unable to offer such products or offer products that are compliant, but are not as reliable due to the lack of reasonably available alternative technologies, it may harm our results of operations.

Furthermore, energy costs in general could increase significantly due to climate change regulations. Therefore, our energy costs may increase substantially if utility or power companies pass on their costs, fully or partially, such as those associated with carbon taxes, emission cap and carbon credit trading programs.

We may be subject to intellectual property rights disputes, which could materially adversely affect our business.

Our ability to compete successfully and achieve future growth depends, in part, on our ability to develop and protect our proprietary technologies and to secure on commercially acceptable terms certain technologies that we do not own.

We cannot assure you that we will be able to independently develop, obtain patents for, protect or secure from any third party, the technologies required.

Our ability to compete successfully also depends, in part, on our ability to operate without infringing the proprietary rights of others. In particular, the semiconductor and electronic industries are characterized by frequent litigation regarding patent and other intellectual property rights. In February 2006, Tessera Inc. filed a suit against us

and others alleging patent infringement. See “Item 8. Financial Information—Legal Proceedings.” Any litigation, whether as plaintiff or defendant and regardless of the outcome, is costly and diverts company resources.

Any of the foregoing could harm our competitive position and render us unable to provide some of our services operations.

Our major shareholders may take actions that are not in, or may conflict with, our public shareholders’ best interest.

Members of the Chang family own, directly or indirectly, a significant interest in our outstanding common shares. See “Item 7. Major Shareholders and Related Party Transactions—Major Shareholders.” Accordingly, these shareholders will continue to have the ability to exercise a significant influence over our business, including matters relating to:

- our management and policies;
- the timing and distribution of dividends; and
- the election of our directors and supervisors.

Members of the Chang family may take actions that you may not agree with or that are not in our or our public shareholders’ best interests.

We are an ROC company and, because the rights of shareholders under ROC law differ from those under U.S. law and the laws of certain other countries, you may have difficulty protecting your shareholder rights.

Our corporate affairs are governed by our Articles of Incorporation and by the laws governing corporations incorporated in the ROC. The rights of shareholders and the responsibilities of management and the members of the board of directors under ROC law are different from those applicable to a corporation incorporated in the United States and certain other countries. As a result, public shareholders of ROC companies may have more difficulty in protecting their interests in connection with actions taken by management or members of the board of directors than they would as public shareholders of a corporation in the United States or certain other countries.

We face risks associated with uncertainties in PRC laws and regulations.

We operate packaging and testing facilities, electronic manufacturing services and real estate in the PRC through our subsidiaries incorporated in the PRC. Under PRC laws and regulations, foreign investment projects, such as our subsidiaries, must obtain certain approvals from the relevant governmental authorities in the provinces or special economic zones in which they are located and, in some circumstances, from the relevant authorities in the PRC’s central government. Foreign investment projects must also comply with certain regulatory requirements. However, PRC laws and regulations are often subject to varying interpretations and means of enforcement, and additional approvals from the relevant governmental authorities may be required for the operations of our PRC subsidiaries. If required, we cannot assure you that we will be able to obtain these approvals in a timely manner, if at all. Because the PRC government holds significant discretion in determining matters relating to foreign investment, we cannot assure you that the relevant governmental authorities will not take action that is materially adverse to our PRC operations.

Escalations in tensions with North Korea could have a material adverse effect on our business and results of operations.

Relations between Korea and North Korea have been tense throughout Korea’s modern history. The level of tension between the two Koreas has fluctuated and may increase abruptly as a result of future events. In particular, there have

been heightened security concerns in recent years stemming from North Korea's nuclear weapon and long-range missile programs as well as its hostile military actions against Korea. North Korea renounced its obligations under the Nuclear Non-Proliferation Treaty in January 2003 and conducted a nuclear test in October 2006, which increased tensions in the region and elicited strong objections worldwide. North Korea continued to

conduct the second and third nuclear test in May 2009 and February 2013 despite of the condemnation from the United Nations and international community.

Revenue from our subsidiary, ASE Korea, accounts for 11.4% of the revenue generated from our packaging and testing business in 2012. There can be no assurance that the level of tension on the Korean peninsula will not escalate in the future. Any further increase in tensions, which may occur, for example, if North Korea experiences a leadership crisis, high level contacts between Korea and North Korea break down or military hostilities occur, could have a material adverse effect on ASE Korea, which in turn, will have a material adverse effect on our packaging and testing business, and our results of operations.

Any impairment charges may have a material adverse effect on our net income.

Under ROC GAAP and U.S. GAAP, we are required to evaluate our assets, such as equipment, goodwill and investments, for possible impairment at least annually or whenever there is an indication of impairment. If certain criteria are met, we are required to record an impairment charge.

With respect to assets, we recognized impairment charges of NT\$251.4 million, NT\$448.1 million and NT\$97.2 million (US\$3.3 million) in 2010, 2011 and 2012, respectively, primarily as a result of an impairment charge related to buildings and improvement, and impaired idle equipment and investment. As of December 31, 2012, goodwill under ROC GAAP and U.S. GAAP amounted to NT\$10,306.8 million (US\$354.8 million) and NT\$10,181.1 million (US\$350.5 million), respectively. See “Item 5. Operating and Financial Review and Prospects—Operating Results and Trend Information—Critical Accounting Policies and Estimates—Realizability of Long-Lived Assets” and “—Goodwill.”

We are unable to estimate the extent and timing of any impairment charges for future years and we cannot give any assurance that impairment charges will not be required in periods subsequent to December 31, 2012. Any impairment charge could have a material adverse effect on our net income. The determination of an impairment charge at any given time is based significantly on our expected results of operations over a number of years in the future. As a result, an impairment charge is more likely to occur during a period in which our operating results and outlook are otherwise already depressed.

Our adoption of International Financial Reporting Standards (“IFRS”), effective January 1, 2013, may have material impact on our financial statements thereafter

We have historically presented our consolidated financial statements, including our consolidated financial statements for the year ended December 31, 2012, in accordance with ROC GAAP for purposes of our filings with the Taiwan Stock Exchange, with reconciliation to U.S. GAAP for certain filings with the SEC. According to the announcement of the Financial Supervisory Commission of the ROC, or the FSC, on May 14, 2009, effective January 1, 2013, companies listed on the Taiwan Stock Exchange, including us, must report their financial statements under Guidelines Governing the Preparation of Financial Reports by Securities Issuers and the IFRS, International Accounting Standards, and the Interpretations as well as related guidance translated by the Accounting Research and Development Foundation and issued by the FSC (collectively, the “Taiwan-IFRS”). See “Item 5. Operating and Financial Review and Prospects—Recent ROC GAAP Accounting Pronouncements.” Accordingly, we have adopted Taiwan-IFRS in the ROC for our interim quarterly earnings releases beginning in the first quarter of 2013 and our annual consolidated financial statements beginning in 2013. While we have adopted Taiwan-IFRS for ROC reporting purposes, we plan to adopt IFRS issued by International Accounting Standards Board for certain filings with the SEC, including our annual report on Form 20-F for the year ending December 31, 2013 and thereafter. Following our adoption of IFRS for SEC filing purposes, we will no longer be required to reconcile our consolidated financial statements with U.S. GAAP.

Taiwan-IFRS differs from IFRS in certain respects, including, but not limited to the extent that any new or amended standards or interpretations applicable under IFRS may not be timely endorsed by the FSC. In addition, Taiwan IFRS and IFRS differ in certain significant respects from ROC GAAP. Because of the differences in accounting treatments, the adoption of Taiwan IFRS and IFRS may have material impact on our results of operations and financial condition in our reported financial statements going forward. It is difficult for us to evaluate the precise impact of the adoption of Taiwan-IFRS and IFRS on our financial reporting generally, or on our financial

statements for the year ending December 31, 2013 or the year ended December 31, 2012. In addition, under the Taiwan-IFRS or IFRS, we are required to present the opening balance sheet on the transition date of January 1, 2012 with adjusted opening balances prepared under the Taiwan-IFRS or IFRS. Consequently, our consolidated financial statements for the year ended December 31, 2012 to be included in our annual report for the year ending December 31, 2013 may differ materially from those included in this annual report, even though they relate to the same fiscal year.

Any failure to achieve and maintain effective internal controls could have a material adverse effect on our business and results of operations.

We are subject to reporting obligations under the U.S. securities laws. The SEC as required by Section 404 of the Sarbanes-Oxley Act of 2002 adopted rules requiring every public company to include a management report on the effectiveness of such company's internal control over financial reporting in its annual report. In addition, an independent registered public accounting firm must report on such company's internal control over financial reporting.

Our management concluded that our internal control over financial reporting was effective as of December 31, 2012 and our independent registered public accounting firm has issued an attestation report concluding that our internal control over financial reporting was effective in all material aspects. As effective internal control over financial reporting is necessary for us to produce reliable financial reports and is important to help prevent fraud, any failure to maintain effective internal control over financial reporting could harm our business and result in a loss of investor confidence in the reliability of our financial statements, which in turn could negatively impact the trading price of our common shares and ADSs. Furthermore, we may need to incur additional costs and use additional management and other resources in an effort to comply with Section 404 of the Sarbanes-Oxley Act and other requirements going forward.

#### Risks Relating to Taiwan, ROC

Strained relations between the ROC and the PRC could negatively affect our business and the market value of your investment.

Our principal executive offices and our principal facilities are located in Taiwan and approximately 49.8%, 50.8% and 45.2% of our net revenues in 2010, 2011 and 2012, respectively, were derived from our operations in Taiwan. The ROC has a unique international political status. The government of the PRC asserts sovereignty over all of China, including Taiwan, and does not recognize the legitimacy of the ROC government. Although significant economic and cultural relations have been established in recent years between the ROC and the PRC, relations have often been strained and the PRC government has indicated that it may use military force to gain control over Taiwan in some circumstances, such as the declaration of independence by the ROC. Political uncertainty could adversely affect the prices of our common shares and ADSs. Relations between the ROC and the PRC and other factors affecting the political or economic conditions in Taiwan could have a material adverse effect on our financial condition and results of operations, as well as the market price and the liquidity of our common shares and ADSs.

Currently, we manufacture interconnect materials in the PRC through our wholly-owned subsidiary, ASE Shanghai. We also provide packaging and testing services in the PRC through some of our subsidiaries. In addition, we engage in the PRC in real estate development and the manufacturing of computer peripherals and electronic components through our subsidiaries in the PRC. See "Item 4. Information on the Company—Organizational Structure—Our Consolidated Subsidiaries." In the past, ROC companies, including ourselves, were prohibited from investing in facilities for the packaging and testing of semiconductors in the PRC. Although the prohibitions have been relaxed since February 2010, the ROC government currently still restricts certain types of investments by ROC companies, including ourselves, in the PRC. We do not know when or if such laws and policies governing investment in the PRC

will be amended, and we cannot assure you that such ROC investment laws and policies will permit us to make further investments of certain types in the PRC in the future that we consider beneficial to us. Our growth prospects and profitability may be adversely affected if we are restricted from making certain additional investments in the PRC and are not able to fully capitalize on the growth of the semiconductor industry in the PRC.



As a substantial portion of our business and operations is located in Taiwan, we are vulnerable to earthquakes, typhoons, drought and other natural disasters, as well as power outages and other industrial incidents, which could severely disrupt the normal operation of our business and adversely affect our results of operations.

Taiwan is susceptible to earthquakes and has experienced severe earthquakes which caused significant property damage and loss of life, particularly in the central and eastern parts of Taiwan. Earthquakes have damaged production facilities and adversely affected the operations of many companies involved in the semiconductor and other industries. We have never experienced structural damage to our facilities or damage to our machinery and equipment as a result of these earthquakes. In the past, however, we have experienced interruptions to our production schedule primarily as a result of power outages caused by earthquakes.

Taiwan is also susceptible to typhoons, which may cause damage and business interruptions to companies with facilities located in Taiwan. For example, in 2012, Taiwan experienced severe damage from typhoons, including typhoon Saola on August 3, 2012 that caused several deaths, severe flooding and extensive property damage.

Taiwan has experienced severe droughts in the past. Although we have not been directly affected by droughts, we are dependent upon water for our packaging and substrates operations and a drought could interrupt such operations. In addition, a drought could interrupt the manufacturing process of the foundries located in Taiwan, in turn disrupting some of our customers' production, which could result in a decline in the demand for our services. In addition, the supply of electrical power in Taiwan, which is primarily provided by Taiwan Power Company, the state-owned electric utility, is susceptible to disruption that could be prolonged and frequent, caused by overload as a result of high demand or other reasons.

Our production facilities as well as many of our suppliers and customers and providers of complementary semiconductor manufacturing services, including foundries, are located in Taiwan. If our customers are affected by an earthquake, a typhoon, a drought or any other natural disasters, or power outage or other industrial incidents, it could result in a decline in the demand for our services. If our suppliers or providers of complementary semiconductor manufacturing services are affected, our production schedule could be interrupted or delayed. As a result, a major earthquake, typhoon, drought or other natural disaster in Taiwan, or a power outage or other industrial incident could severely disrupt the normal operation of our business and have a material adverse effect on our financial condition and results of operations.

We face risks related to health epidemics and outbreaks of contagious diseases, including H1N1 influenza, H5N1 influenza, H7N9 influenza and Severe Acute Respiratory Syndrome, or SARS.

There have been reports of outbreaks of a highly pathogenic influenza caused by the H1N1 virus, as well as an influenza caused by the H5N1 virus, in certain regions of Asia and other parts of the world. In addition, there have been recent reports of outbreaks of an avian flu caused by the H7N9 virus, including confirmed human cases, in the PRC. An outbreak of such contagious diseases in the human population could result in a widespread health crisis that could adversely affect the economies and financial markets of many countries. Additionally, a recurrence of SARS, a highly contagious form of atypical pneumonia, similar to the occurrence in 2003 which affected the PRC, Hong Kong, Taiwan, Singapore, Vietnam and certain other countries, would also have similar adverse effects. Since most of our operations and customers and suppliers are based in Asia (mainly in Taiwan), an outbreak of H1N1 influenza, H5N1 influenza, H7N9 influenza, SARS or other contagious diseases in Asia or elsewhere, or the perception that such an outbreak could occur, and the measures taken by the governments of countries affected, including the ROC and the PRC, could adversely affect our business, financial condition or results of operations.

Risks Relating to Ownership of the ADSs

The market for the common shares and the ADSs may not be liquid.

Active, liquid trading markets generally result in lower price volatility and more efficient execution of buy and sell orders for investors, compared to less active and less liquid markets. Liquidity of a securities market is often a function of the volume of the underlying shares that are publicly held by unrelated parties.

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There has been no trading market outside the ROC for the common shares and the only trading market for the common shares is the Taiwan Stock Exchange. The outstanding ADSs are listed on the New York Stock Exchange. There is no assurance that the market for the common shares or the ADSs will be active or liquid.

Although ADS holders are entitled to withdraw the common shares underlying the ADSs from the depositary at any time, ROC law requires that the common shares be held in an account in the ROC or sold for the benefit of the holder on the Taiwan Stock Exchange. In connection with any withdrawal of common shares from our ADS facility, the ADSs evidencing these common shares will be cancelled. Unless additional ADSs are issued, the effect of withdrawals will be to reduce the number of outstanding ADSs. If a significant number of withdrawals are effected, the liquidity of our ADSs will be substantially reduced. We cannot assure you that the ADS depositary will be able to arrange for a sale of deposited shares in a timely manner or at a specified price, particularly during periods of illiquidity or volatility.

If a non-ROC holder of ADSs withdraws and holds common shares, such holder of ADSs will be required to appoint a tax guarantor, local agent and custodian bank in the ROC and register with the Taiwan Stock Exchange in order to buy and sell securities on the Taiwan Stock Exchange.

When a non-ROC holder of ADSs elects to withdraw and hold common shares represented by ADSs, such holder of the ADSs will be required to appoint an agent for filing tax returns and making tax payments in the ROC. Such agent will be required to meet the qualifications set by the ROC Ministry of Finance and, upon appointment, becomes the guarantor of the withdrawing holder's tax payment obligations. Evidence of the appointment of a tax guarantor, the approval of such appointment by the ROC tax authorities and tax clearance certificates or evidentiary documents issued by such tax guarantor may be required as conditions to such holder repatriating the profits derived from the sale of common shares. We cannot assure you that a withdrawing holder will be able to appoint, and obtain approval for, a tax guarantor in a timely manner.

In addition, under current ROC law, such withdrawing holder is required to register with the Taiwan Stock Exchange and appoint a local agent in the ROC to, among other things, open a bank account and open a securities trading account with a local securities brokerage firm, pay taxes, remit funds and exercise such holder's rights as a shareholder. Furthermore, such withdrawing holder must appoint a local bank to act as custodian for confirmation and settlement of trades, safekeeping of securities and cash proceeds and reporting and declaration of information. Without satisfying these requirements, non-ROC withdrawing holders of ADSs would not be able to hold or otherwise subsequently sell the common shares on the Taiwan Stock Exchange or otherwise.

Pursuant to the Regulations Governing Securities Investment and Futures Trading in Taiwan by Mainland Area Investors (the "Mainland Investors Regulations"), only qualified domestic institutional investors ("QDIIs") or persons that have otherwise obtained the approval from the ROC Investment Commission of Ministry of Economic Affairs ("MOEAIC") and registered with the Taiwan Stock Exchange are permitted to withdraw and hold our shares from a depositary receipt facility. In order to hold our shares, such QDIIs are required to appoint an agent and custodian as required by the Mainland Investors Regulations. If the aggregate amount of our shares held by any QDII or shares received by any QDII upon a single withdrawal accounts for 10% of our total issued and outstanding shares, such QDII must obtain the prior approval from the MOEAIC. We cannot assure you that such approval would be granted.

The market value of your investment may fluctuate due to the volatility of the ROC securities market.

The trading price of our ADSs may be affected by the trading price of our common shares on the Taiwan Stock Exchange. The ROC securities market is smaller and more volatile than the securities markets in the United States and in many European countries. The Taiwan Stock Exchange has experienced substantial fluctuations in the prices and volumes of sales of listed securities and there are currently limits on the range of daily price movements on the

Taiwan Stock Exchange. The Taiwan Stock Exchange Index peaked at 12,495.3 in February 1990, and subsequently fell to a low of 2,560.5 in October 1990. On March 13, 2000, the Taiwan Stock Exchange Index experienced a 617-point drop, which represented the single largest decrease in the Taiwan Stock Exchange Index in its history. During the period from January 1, 2012 to December 31, 2012, the Taiwan Stock Exchange Index peaked at 8,144.04 on March 2, 2012, and reached a low of 6,894.66 on June 4, 2012. Over the same period, the trading price of our

common shares ranged from NT\$31.20 per share to NT\$20.05 per share. On April 12, 2013, the Taiwan Stock Exchange Index closed at 7,821.63, and the closing value of our common shares was NT\$24.30 per share.

The Taiwan Stock Exchange is particularly volatile during times of political instability, including when relations between Taiwan and the PRC are strained. Several investment funds affiliated with the ROC government have also from time to time purchased securities from the Taiwan Stock Exchange to support the trading level of the Taiwan Stock Exchange. Moreover, the Taiwan Stock Exchange has experienced problems such as market manipulation, insider trading and settlement defaults. The recurrence of these or similar problems could have an adverse effect on the market price and liquidity of the securities of ROC companies, including our common shares and ADSs, in both the domestic and international markets.

Holders of common shares and ADSs may incur dilution as a result of the practice among ROC technology companies of issuing stock bonuses and stock options to employees or selling additional equity-linked securities.

Similar to other ROC technology companies, we issue bonuses from time to time in the form of common shares. Prior to 2009, bonuses issued in the form of our common shares were valued at par. Beginning in 2009, bonuses in the form of our common shares are valued at the closing price of the common shares on the day prior to our shareholders' meeting. In addition, under the ROC Company Law we may, upon approval from our board of directors and the ROC Securities and Futures Bureau of the Financial Supervisory Commission, establish employee stock option plans. We currently maintain four employee stock option plans pursuant to which our full-time employees, including our domestic and foreign subsidiaries, are eligible to receive stock option grants. As of December 31, 2012, 344,331,580 options granted by ASE Inc. were outstanding. See "Item 6. Directors, Senior Management and Employees—Compensation—ASE Inc. Employee Bonus and Stock Option Plans." The issuance of our common shares pursuant to stock bonuses or stock options may have a dilutive effect on the holders of outstanding common shares and ADSs.

Restrictions on the ability to deposit our common shares into our ADS facility may adversely affect the liquidity and price of our ADSs.

The ability to deposit common shares into our ADS facility is restricted by ROC law. A significant number of withdrawals of common shares underlying our ADSs would reduce the liquidity of the ADSs by reducing the number of ADSs outstanding. As a result, the prevailing market price of our ADSs may differ from the prevailing market price of our common shares on the Taiwan Stock Exchange. Under current ROC law, no person or entity, including you and us, may deposit our common shares in our ADS facility without specific approval of the ROC Financial Supervisory Commission, unless:

- (1) we pay stock dividends on our common shares;
- (2) we make a free distribution of common shares;
- (3) holders of ADSs exercise preemptive rights in the event of capital increases; or
- (4) to the extent permitted under the deposit agreement and the relevant custody agreement, investors purchase our common shares, directly or through the depository, on the Taiwan Stock Exchange, and deliver our common shares to the custodian for deposit into our ADS facility, or our existing shareholders deliver our common shares to the custodian for deposit into our ADS facility.

With respect to item (4) above, the depository may issue ADSs against the deposit of those common shares only if the total number of ADSs outstanding following the deposit will not exceed the number of ADSs previously approved by

the ROC Financial Supervisory Commission, plus any ADSs issued pursuant to the events described in items (1), (2) and (3) above.

In addition, in the case of a deposit of our common shares requested under item (4) above, the depositary will refuse to accept deposit of our common shares if such deposit is not permitted under any legal, regulatory or other restrictions notified by us to the depositary from time to time, which restrictions may include blackout periods during which deposits may not be made, minimum and maximum amounts and frequency of deposits.

The depositary will not offer holders of ADSs preemptive rights unless the distribution of both the rights and the underlying common shares to our ADS holders are either registered under the Securities Act or exempt from registration under the Securities Act.

Holders of ADSs will not have the same voting rights as our shareholders, which may affect the value of their ADSs.

The voting rights of a holder of ADSs as to the common shares represented by its ADSs are governed by the deposit agreement. Holders of ADSs will not be able to exercise voting rights on an individual basis. If holders representing at least 51% of the ADSs outstanding at the relevant record date instruct the depositary to vote in the same manner regarding a resolution, including the election of directors and supervisors, the depositary will cause all common shares represented by the ADSs to be voted in that manner. If the depositary does not receive timely instructions representing at least 51% of the ADSs outstanding at the relevant record date to vote in the same manner for any resolution, including the election of directors and supervisors, holders of ADSs will be deemed to have instructed the depositary or its nominee to authorize all the common shares represented by the ADSs to be voted at the discretion of our chairman or his designee, which may not be in the interest of holders of ADSs. Moreover, while shareholders who own 1% or more of our outstanding shares are entitled to submit one proposal to be considered at our annual general meetings of shareholders, only holders representing at least 51% of our ADSs outstanding at the relevant record date are entitled to submit one proposal to be considered at our annual general meetings of shareholders. Hence, only one proposal may be submitted on behalf of all ADS holders.

The right of holders of ADSs to participate in our rights offerings is limited, which could cause dilution to your holdings.

We may from time to time distribute rights to our shareholders, including rights to acquire our securities. Under the deposit agreement, the depositary will not offer holders of ADSs those rights unless both the distribution of the rights and the underlying securities to all our ADS holders are either registered under the Securities Act or exempt from registration under the Securities Act. Although we may be eligible to take advantage of certain exemptions under the Securities Act available to certain foreign issuers for rights offerings, we can give no assurances that we will be able to establish an exemption from registration under the Securities Act, and we are under no obligation to file a registration statement for any of these rights. Accordingly, holders of ADSs may be unable to participate in our rights offerings and may experience dilution of their holdings.

If the depositary is unable to sell rights that are not exercised or not distributed or if the sale is not lawful or reasonably practicable, it will allow the rights to lapse, in which case holders of ADSs will receive no value for these rights.

Changes in exchange controls which restrict your ability to convert proceeds received from your ownership of ADSs may have an adverse effect on the value of your investment.

Under current ROC law, the depositary, without obtaining approvals from the Central Bank of the Republic of China (Taiwan) or any other governmental authority or agency of the ROC, may convert NT dollars into other currencies, including U.S. dollars, for:

- the proceeds of the sale of common shares represented by ADSs or received as stock dividends from the common shares and deposited into the depositary receipt facility; and
  - any cash dividends or distributions received from the common shares.

In addition, the depositary may also convert into NT dollars incoming payments for purchases of common shares for deposit in the ADS facility against the creation of additional ADSs. The depositary may be required to obtain foreign exchange approval from the Central Bank of the Republic of China (Taiwan) on a payment-by-payment basis for conversion from NT dollars into foreign currencies of the proceeds from the sale of subscription rights for new common shares. Although it is expected that the Central Bank of the Republic of China (Taiwan) will grant this approval as a routine matter, we cannot assure you that in the future any approval will be obtained in a timely manner, or at all.



Under current ROC law, a holder of the ADSs, without obtaining further approval from the Central Bank of the Republic of China (Taiwan), may convert from NT dollars into other currencies, including U.S. dollars, the following:

- the proceeds of the sale of any underlying common shares withdrawn from the depositary receipt facility or received as a stock dividend that has been deposited into the depositary receipt facility; and
- any cash dividends or distribution received from the common shares.

However, such holder may be required to obtain foreign exchange approval from the Central Bank of the Republic of China (Taiwan) on a payment-by-payment basis for conversion from NT dollars into foreign currencies of the proceeds from the sale of subscription rights for new common shares. Although the Central Bank of the Republic of China (Taiwan) is generally expected to grant this approval as a routine matter, we cannot assure you that you will actually obtain this approval in a timely manner, or at all.

Under the ROC Foreign Exchange Control Law, the Executive Yuan of the ROC government may, without prior notice but subject to subsequent legislative approval, impose foreign exchange controls in the event of, among other things, a material change in international economic conditions. We cannot assure you that foreign exchange controls or other restrictions will not be introduced in the future.

The value of your investment may be reduced by possible future sales of common shares or ADSs by us or our shareholders.

While we are not aware of any plans by any major shareholders to dispose of significant numbers of common shares, we cannot assure you that one or more existing shareholders or owners of securities convertible or exchangeable into or exercisable for our common shares or ADSs will not dispose of significant numbers of common shares or ADSs. In addition, several of our subsidiaries and affiliates hold common shares, depositary shares representing common shares and options to purchase common shares or ADSs. They may decide to sell those securities in the future. See “Item 7. Major Shareholders and Related Party Transactions—Major Shareholders” for a description of our significant shareholders and affiliates that hold our common shares.

We cannot predict the effect, if any, that future sales of common shares or ADSs, or the availability of common shares or ADSs for future sale, will have on the market price of the common shares or the ADSs prevailing from time to time. Sales of substantial numbers of common shares or ADSs in the public market, or the perception that such sales may occur, could depress the prevailing market prices of the common shares or the ADSs.

#### Item 4. Information on the Company

##### HISTORY AND DEVELOPMENT OF THE COMPANY

Advanced Semiconductor Engineering, Inc. was incorporated on March 23, 1984 as a company limited by shares under the ROC Company Law, with facilities in the Nantze Export Processing Zone located in Kaohsiung, Taiwan. Our principal executive offices are located at 26 Chin Third Road, Nantze Export Processing Zone, Nantze, Kaohsiung, Taiwan, ROC and our telephone number at the above address is (886) 7361-7131. Our common shares have been listed on the Taiwan Stock Exchange under the symbol “2311” since July 1989 and ADSs representing our common shares have been listed on the New York Stock Exchange under the symbol “ASX” since September 2000.

##### Acquisition of Shares of Universal Scientific

In February 2010, we, along with our two subsidiaries, J&R Holding Limited and ASE Test, through a cash and stock tender offer, acquired 641,669,316 common shares of Universal Scientific at NT\$21 per share, amounting to NT\$13,475.1 million in total, resulting in our controlled ownership over Universal Scientific. As a result, Universal Scientific became our consolidated subsidiary. In August 2010, we acquired additional 222,243,661 shares of Universal Scientific through another tender offer at NT\$21 per share, amounting to NT\$4,667.1 million in total. We owned 99.2 % of the outstanding common shares of Universal Scientific as of March 31, 2013.

#### Acquisition of EEMS Test Singapore

On August 2, 2010, we, through our subsidiary ASE Singapore Pte. Ltd., entered into a share purchase agreement with EEMS Asia Pte. Ltd., a subsidiary of EEMS Italia S.p.A., in connection with the acquisition of 100.0% of EEMS Test Singapore, a Singapore-based provider of test solutions for the semiconductor industry, for a purchase price of US\$72.2 million. On August 27, 2010, EEMS Test Singapore changed its name to ASE Singapore II Pte. Ltd., which was subsequently merged into ASE Singapore Pte. Ltd. on January 1, 2011.

#### Acquisition and Merger of PowerASE

In addition to our previous holding of a 55.7% equity interest in PowerASE, in November and December 2011, we acquired 106,808,182 shares of PowerASE, accounting for 43.9% of its equity interest, mainly through tender offers, for a total consideration of NT\$1,972.2 million. Following the tender offer and the acquisition of the remaining outstanding shares of PowerASE in May 2012, PowerASE was merged into ASE Inc.

#### Acquisition of Yang Ting

On January 13, 2012, we entered into share purchase agreement with the shareholders of Yang Ting, a ROC-based provider of semiconductor packaging and testing services, in connection with the acquisition of 100.0% of Yang Ting, for a total consideration of NT\$300.0 million (US\$10.3 million).

#### IPO of Universal Scientific Shanghai

In February 2012, Universal Scientific Shanghai, a subsidiary of Universal Scientific, completed its initial public offering, or IPO, on the Shanghai Stock Exchange. Total proceeds from the IPO were approximately RMB 811.7 million (US\$130.3 million) prior to deducting underwriting discounts and commissions. As of March 31, 2013, we indirectly held 88.6% of the total outstanding shares of Universal Scientific Shanghai through our subsidiaries Universal Scientific and ASE Shanghai.

For more information on our history and development, see “—Organizational Structure.”

#### BUSINESS OVERVIEW

ASE is the world’s largest independent provider of semiconductor packaging and testing services based on 2012 revenues. Our services include semiconductor packaging, production of interconnect materials, front-end engineering testing, wafer probing and final testing services, as well as integrated solutions for electronics manufacturing services in relation to computers, peripherals, communications, industrial, automotive, and storage and server applications. We believe that, as a result of the following, we are well positioned than our competitors to meet customers’ requirements across a wide range of end-use applications:

- our ability to provide a broad range of cost-effective semiconductor packaging and testing services on a large-scale turnkey basis within key centers of semiconductor manufacturing;
- our expertise in developing and providing cost-effective packaging, interconnect materials and testing technologies and solutions;
- our ability to provide proactive original design manufacturing services using innovative solution-based designs;
-

our scale of operations and financial position, which enable us to make significant investments in capacity expansion and research and development as well as to make selective acquisitions;

- our geographic presence in key centers of outsourced semiconductor and electronics manufacturing; and
- our long-term relationships with providers of complementary semiconductor manufacturing services, including our strategic alliance with TSMC, one of the world's largest dedicated semiconductor foundries.

We believe that it is still the trend for semiconductor companies to outsource their packaging, testing and manufacturing requirements as semiconductor companies rely on independent providers of foundry, advanced packaging, testing and electronic manufacturing services. In response to the increased pace of new product development and shortened product life and production cycles, semiconductor companies are increasingly seeking independent packaging and testing companies that can provide turnkey services in order to reduce time-to-market as well as electronic manufacturing companies that can provide large-scale production and have the proactive original design capabilities. We believe that our expertise and scale in advanced technology and our ability to integrate our broad range of solutions into turnkey services and electronic manufacturing services allow us to benefit from the accelerated outsourcing trend and better serve our existing and potential customers.

We believe that we have benefited, and will continue to benefit, from our geographic location in Taiwan. Taiwan is currently the largest center for outsourced semiconductor manufacturing in the world and has a high concentration of electronics manufacturing service providers. Our close proximity to foundries and other providers of complementary semiconductor manufacturing services is attractive to our customers who wish to take advantage of the efficiencies of a total semiconductor manufacturing solution by outsourcing several stages of their manufacturing requirements. We believe that, as a result, we are well positioned to meet the advanced semiconductor engineering and manufacturing requirements of our customers.

## Industry Background

### General

Semiconductors are the basic building blocks used to create an increasing variety of electronic products and systems. Continuous improvements in semiconductor process and design technologies have led to smaller, more complex and more reliable semiconductors at a lower cost per function. These improvements have resulted in significant performance and price benefits to manufacturers of electronic products. As a result, semiconductor demand has grown substantially in our primary end-user markets for communications, computing and consumer electronics, and has experienced increased growth in other markets such as automotive products and industrial automation and control systems.

The semiconductor industry is characterized by strong long-term growth, with periodic and sometimes severe cyclical downturns. The Semiconductor Industry Association reported that worldwide sales of semiconductors increased from approximately US\$51 billion in 1990 to approximately US\$291.6 billion in 2012. We believe that overall growth and cyclical fluctuations will continue over the long-term in the semiconductor industry.

### Electronic Manufacturing Services

Electronics manufacturing service providers typically achieve large economies of scale in manufacturing by pooling together product design techniques and also provide value-added services such as warranties and repairs. Companies who do not need to manufacture a constant supply of products have increasingly outsourced their manufacturing to these service providers so that they are no longer forced to maintain large inventories of products. Outsourcing will also enable them to still respond quickly and efficiently to sudden spikes in demand.

Electronics manufacturing services are sought by companies in a wide range of industries including, among others, information, communications, consumer electronics, automotive electronics, medical treatment, industrial applications, aviation, navigation, national defense and transportation. Although affected by global economic fluctuations, we expect the electronics manufacturing services industry to continue to grow in the long-term and we have enhanced our presence in the industry through our acquisition of the controlling interest of Universal Scientific since 2010.

#### Outsourcing Trends in Semiconductor Manufacturing

Historically, semiconductor companies designed, manufactured, packaged and tested semiconductors primarily within their own facilities. However, there is a clear trend in the industry to outsource stages in the manufacturing process. Virtually every significant stage of the manufacturing process can be outsourced. Wafer foundry services, semiconductor packaging and testing services, and electronic manufacturing services are currently the largest segments of the independent semiconductor manufacturing services market.

The availability of technologically advanced independent manufacturing services has also enabled the growth of “fabless” semiconductor companies that focus on semiconductor design and marketing, while outsourcing their wafer fabrication, packaging and testing requirements to independent companies. We believe that the growth in the number and scale of fabless semiconductor companies that rely solely on independent companies to meet their manufacturing requirements will continue to be a driver of growth in the market for independent foundry, packaging and testing services. Similarly, the availability of technologically advanced independent manufacturing services has encouraged integrated device manufacturers, which had traditionally relied on in-house semiconductor manufacturing capacity, to increasingly outsource their manufacturing requirements to independent semiconductor manufacturing companies.

We believe the outsourcing of semiconductor manufacturing services will increase in the future for many reasons, including the following:

- **Technological Expertise and Significant Capital Expenditure.** Semiconductor manufacturing processes have become highly complex, requiring substantial investment in specialized equipment and facilities and sophisticated engineering and manufacturing expertise. In addition, product life cycles have been shortening, magnifying the need to continuously upgrade or replace manufacturing equipment to accommodate new products. As a result, new investments in in-house facilities are becoming less desirable to integrated device manufacturers because of the high investment costs as well as the inability to achieve sufficient economies of scale and utilization rates necessary to be competitive with the independent service providers. Independent packaging, testing, foundry and electronic manufacturing services companies, on the other hand, are able to realize the benefits of specialization and achieve economies of scale by providing services to a large base of customers across a wide range of products. This enables them to reduce costs and shorten production cycles through high capacity utilization and process expertise. In the process, they are also able to focus on discrete stages of semiconductor manufacturing and deliver services of superior quality.

In recent years, semiconductor companies have significantly reduced their investment in in-house technology capacities. As a result, some semiconductor companies may have limited in-house expertise and capacity to accommodate large orders following a recovery in demand, particularly in the area of advanced technology. On the other hand, some semiconductor companies with in-house operations are under increasing pressure to rationalize these operations by relocating to locations with lower costs or better infrastructure, in order to lower manufacturing costs and shorten production cycle time. We expect semiconductor companies to increasingly outsource their requirements to take advantage of the advanced technology and scale of operations of independent packaging companies and electronic manufacturing services providers.

- Increased Adoption of Copper Wire Bonding. With significant cost saving benefits over conventional gold wiring technology, semiconductor companies have been qualifying and converting volumes to copper wire based packages at a steady pace. Independent packaging companies have been more aggressive in building copper bonding capacity than integrated device manufacturers and have accumulated

significantly more experience and acumen with regards to the new technology. Due to the inherent cost savings and comparable yield of copper and their lack of in-house capacity and experience, we believe that integrated device manufacturers will increase outsourcing of their manufacturing services for copper wire packages to independent packaging and testing companies.

- **Focus on Core Competencies.** As the semiconductor industry becomes more competitive, semiconductor companies are expected to further outsource their semiconductor manufacturing requirements in order to focus their resources on core competencies, such as semiconductor design and marketing.
- **Time-to-Market Pressure.** The increasingly short product life cycle has accelerated time-to-market pressure for semiconductor companies, leading them to rely increasingly on outsourced suppliers as a key source for effective manufacturing solutions.
- **Capitalize on the High Growth Rates in Emerging Markets.** Emerging markets, and China in particular, have become both major manufacturing centers for the technology industry and growing markets for technology-based products. Thus, in order to gain direct access to the Chinese market, many semiconductor companies are seeking to establish manufacturing facilities in China by partnering with local subcontractors. As a result, certain stages of the semiconductor manufacturing process that were previously handled in-house will be increasingly outsourced in order to improve efficiency.

#### The Semiconductor Industry in Taiwan

The semiconductor industry in Taiwan has been a leader in, and a major beneficiary of, the trend in outsourcing. The growth of the semiconductor industry in Taiwan has been the result of several factors. First, semiconductor manufacturing companies in Taiwan typically focus on one or two stages of the semiconductor manufacturing process. As a result, these companies tend to be more efficient and are better able to achieve economies of scale and maintain higher capacity utilization rates. Second, semiconductor manufacturing companies in Taiwan that provide the major stages of the manufacturing process are located close to each other and typically enjoy close working relationships. This close network is attractive to customers who wish to outsource multiple stages of the semiconductor manufacturing process. For instance, a customer could reduce production cycle time and unit cost and streamline logistics by outsourcing its foundry, packaging, testing and drop shipment services to electronics manufacturing companies in Taiwan. Third, Taiwan has an educated labor pool and a large number of engineers suitable for sophisticated manufacturing industries such as semiconductors.

The semiconductor industry in Taiwan has over the past decade made significant capital expenditures to expand capacity and technological capabilities. The ROC government has also provided tax incentives and research and development support, both directly and indirectly through support of research institutes and universities. As a result of investments made in recent years, Taiwan has achieved substantial market share in the outsourced semiconductor manufacturing industry. Furthermore, the growth of Taiwan's electronics manufacturing industry, particularly in personal computer, mobile handset and digital camera design and manufacturing, has created substantial local demand for semiconductor.

#### The Semiconductor Industry in Other Asian Regions

Many of the factors that contributed to the growth of the semiconductor industry in Taiwan have also contributed to the recent development of the semiconductor industry in Southeast Asia. Access to expanding semiconductor foundry services in Singapore, convenient proximity to major downstream electronics manufacturing operations in Malaysia, Singapore and Thailand, government-sponsored infrastructure support, tax incentives and pools of skilled engineers and labor at relatively low cost have all encouraged the development of back-end semiconductor service operations in



Southeast Asia. The downstream electronics manufacturers in Southeast Asia have typically focused on products used in the communications, industrial and consumer electronics and personal computer peripheral sectors. The proximity to both semiconductor foundries and end users has influenced local and international semiconductor companies increasingly to obtain packaging, testing and drop shipment services from companies in Southeast Asia.

In addition, the world's leading electronics manufacturing service providers, many of them from Taiwan, are increasingly establishing manufacturing facilities in the PRC and Vietnam in order to take advantage of lower labor costs, government incentives for investment and the potential size of the domestic market for end users of electronics products. Many of the factors that contributed to the growth of the semiconductor industry in Taiwan are beginning to emerge in the PRC and may play an increasingly important role in the growth of its semiconductor industry over the long term.

#### Overview of Semiconductor Manufacturing Process

The manufacturing of semiconductors is a complex process that requires increasingly sophisticated engineering and manufacturing expertise. The manufacturing process may be divided into the following stages:

We are involved in all stages of the semiconductor manufacturing process except circuit design and wafer fabrication.

Process	Description
1. Circuit Design	The design of a semiconductor is developed by laying out circuit components and interconnections.
2. Engineering Test	Throughout and following the design process, prototype semiconductors undergo engineering testing, which involves software development, electrical design validation and reliability and failure analysis.
3. Wafer Fabrication	Process begins with the generation of a photomask through the definition of the circuit design pattern on a photographic negative, known as a mask, by an electron beam or laser beam writer. These circuit patterns are transferred to the wafers using various advanced processes.
4. Wafer Probe	Each individual die is electrically tested, or probed, for defects. Dies that fail this test are marked to be discarded.
5. Packaging (or Assembly)	Packaging, also called assembly, is the processing of bare semiconductors into finished semiconductors and serves to protect

Process

Description

the die and facilitate electrical connections and heat dissipation. The patterned silicon wafers received from our customers are diced by means of diamond saws into separate dies, also called chips. Basically each die is attached to a leadframe or a laminate (plastic or tape) substrate by epoxy resin. A leadframe is a miniature sheet of metal, generally made of copper and silver alloys, on which the pattern of input/output leads has been cut. On a laminate substrate, typically used in ball grid array, or BGA, packages, the leads take the shape of small bumps or balls. Leads on the leadframe or the substrate are connected by extremely fine gold or copper wires or bumps to the input/output terminals on the chips, through the use of automated machines known as “bonders.” Each chip is then encapsulated, generally in a plastic casing molded from a molding compound, with only the leads protruding from the finished casing, either from the edges of the package as in the case of the leadframe-based packages, or in the form of small bumps on a surface of the package as in the case of BGA or other substrate-based packages.

6. Final Test

Final testing is conducted to ensure that the packaged semiconductor meets performance specifications. Final testing involves using sophisticated testing equipment known as testers and customized software to electrically test a number of attributes of packaged semiconductors, including functionality, speed, predicted endurance and power consumption. The final testing of semiconductors is categorized by the functions of the semiconductors tested into logic/mixed-signal/RF/3D IC/discrete final testing and memory final testing. Memory final testing typically requires simpler test software but longer testing time per device tested.

7. Module, Board Assembly and Test

Module, board assembly and test refers to the combination of one or more packaged semiconductors with other components in an integrated module or board to enable increased functionality.

8. Material

Material refers to the interconnection of materials which connect the input/output on the semiconductor dies to the printed circuit board, such as substrate, leadframe and flip-chip.

Strategy

Our objective is to provide integrated solutions, including packaging, testing services, interconnect materials design and production capabilities, which set industry standards and to lead and facilitate the industry trend towards

outsourcing semiconductor manufacturing requirements. The principal elements of our strategy are to:

Grow Our Advanced Packaging Services and Expand into the Legacy Packaging Market

We believe that an important factor in our ability to attract leading semiconductor companies as our customers has been our ability to fulfill demand for a broad range of packaging solutions on a large scale. We intend to continue to develop process and product technologies to meet the requirements of clients using our advanced packaging services. Our expertise in packaging technology has enabled us to develop advanced solutions such as flip-chip packaging, bump chip carrier packaging, stacked die packaging and fine-pitch wire bonding. We are continuously investing in research and development in response to and in anticipation of migrations in technology and intend to continue to acquire access to new technologies through strategic alliances and licensing arrangements.

We also intend to expand our legacy leadframe-based packaging product offerings and services. We believe that our clients will continue to outsource their legacy packaging requirements. To capitalize on this trend, we plan to continuously grow our legacy packaging production and discrete packaging businesses.

The increasing miniaturization of semiconductors and the growing complexity of interconnect technology have also resulted in the blurring of the traditional distinctions among assembly at different levels of integration: chip, module, board and system. We have provided module assembly services. In addition, our subsidiary Universal Scientific has provided us with access to process and product technologies at the levels of module, board and system assembly and testing, which helps us to better anticipate industry trends and take advantage of potential growth opportunities. We expect to combine our packaging, testing and materials technologies with the expertise of Universal Scientific at the systems level to develop our system-in-package (SiP) business.

#### Strategically Expand and Streamline Production Capacity

To capitalize on the growing demand for advanced and legacy packaging and testing services, we intend to strategically expand our production capacity, both through internal growth and selective acquisitions and joint ventures, with a focus on providing cost competitive and innovative packaging and testing services.

For our advanced packaging and testing businesses, we intend to invest in trends that are essential to the development of the industry. We plan to expand our capacity with respect to, but not limited to, 12-inch wafer process, bumping, FC-CSP and system-in-a-package products to meet demand for smaller form factors, higher performance and higher packaging density.

In addition, we intend to promote our copper wire solutions to our customers in addition to gold wire. Gold wire is a significant raw material for us. Gold prices, however, are subject to intense fluctuations and have in the past impacted our profitability. We believe that replacing gold wire in some of our packages with the copper wire technology will not only improve our profitability but will also enable us to provide more value to our customers by providing lower cost solutions, which could enhance our competitiveness and market share. We are currently the industry leader in terms of copper wire capacity. We thus plan to capitalize on the overall industry trend of copper conversion by maintaining our leadership and focusing on integrating copper wire into a wider range of traditional leadframe-based packages and higher end substrate-based packages.

We expect to focus our legacy packaging and testing on providing cost competitive services through better management of capacity utilization and efficiency improvements and offer our services on a large scale with the intention of driving more integrated device manufacturer outsourcing in the long-run.

We evaluate acquisition and joint venture opportunities on the basis of access to new markets and technology, the enhancement of our production capacity, economies of scale and management resources, and closer proximity to existing and potential customers. In 2008, we completed the acquisition of ASEWH, a company that also engages in semiconductor packaging and testing services. In February and August, 2010, we acquired an aggregate of 863,912,977 common shares of Universal Scientific through two tender offers, and we owned 99.2 % of its outstanding common shares as of March 31, 2013. Universal Scientific is an electronics manufacturing services company that provides integrated solutions for electronic manufacturing services in relation to computers, peripherals, communications, industrial, automotive, and storage and server applications. We intend to provide our customers with more value-added products through Universal Scientific. In addition, on August 2, 2010, we also completed the acquisition of 100.0% of EEMS Test Singapore from EEMS Asia Pte. Ltd., a subsidiary of EEMS Italia S.p.A. EEMS Test Singapore is a Singapore-based provider of test solutions for the semiconductor industry. On August 27, 2010, EEMS Test Singapore changed its name to ASE Singapore II Pte. Ltd., which was subsequently merged into ASE Singapore Pte. Ltd. on January 1, 2011. We also acquired Yang Ting in January 2012 to enhance our capacity to

provide packaging and testing services on discrete products.

Continue to Leverage Our Presence in Key Centers of Semiconductor and Electronics Manufacturing

We intend to continue leveraging our presence in key centers of semiconductor and electronics manufacturing to further grow our business. We have significant packaging, testing and electronics manufacturing services

operations in Taiwan, currently the largest center for outsourced semiconductor and electronics manufacturing in the world. This presence enables our engineers to work closely with our customers as well as foundries and other providers of complementary semiconductor and electronics manufacturing services early in the design process, enhances our responsiveness to the requirements of our customers and shortens production cycles. In addition, as a turnkey service provider, we are able to offer our products to our customers and complementary service providers within relatively close geographic proximity. Besides our current operations in Taiwan, we intend to expand our operations in our other subsidiaries.

We have primary operations in the following locations besides our locations in Taiwan:

- PRC — a fast-growing market for semiconductor and electronics manufacturing in the world;
- Korea — an important center for the manufacturing of memory and communications devices;
- Malaysia and Singapore — a center for outsourced semiconductor manufacturing in Southeast Asia;
- Silicon Valley in California — the preeminent center for semiconductor design, with a concentration of fabless customers; and
- Japan — an emerging market for packaging and testing outsourcing services as Japanese integrated device manufacturers increasingly outsource their semiconductor manufacturing requirements.

#### Strengthen and Develop Strategic Relationships with Our Customers and Providers of Complementary Semiconductor Manufacturing Services

We intend to strengthen existing and develop new strategic relationships with our customers and providers of other complementary semiconductor manufacturing services, such as foundries, as well as equipment vendors, raw material suppliers and technology research institutes, in order to offer our customers total semiconductor manufacturing solutions covering all stages of the manufacturing of their products from design to shipment. In addition, we are working with our customers to co-develop new packaging technologies and designs.

Since 1997, we have maintained a strategic alliance with TSMC, currently one of the world's largest dedicated semiconductor foundries, which designates us as their non-exclusive preferred provider of packaging and testing services for semiconductors manufactured by TSMC. Through our strategic alliance with and close geographic proximity to TSMC, we are able to offer our customers a total semiconductor manufacturing solution that includes access to foundry services in addition to our packaging, testing and direct shipment services.

#### Principal Products and Services

We offer a broad range of advanced and legacy semiconductor packaging and testing services. In addition, we have provided electronic manufacturing services since our acquisition of the controlling interest of Universal Scientific in February 2010. Our package types employ general either leadframes or substrates as interconnect materials. The semiconductors we package are used in a wide range of end-use applications, including communications, computing, consumer electronics, industrial, automotive and other applications. Our testing services include front-end engineering test, which is performed during and following the initial circuit design stage of the semiconductor manufacturing process, wafer probe, final testing and other related semiconductor testing services. We focus on packaging and testing semiconductors. We offer our customers turnkey services which consist of packaging, testing and direct shipment of semiconductors to end users designated by our customers. Our electronics manufacturing services are used in a wide range of end-use applications, including, but not limited to, computers, peripherals, communications,

industrial applications, automotive electronics, and storage and server applications. In 2012, our revenues generated from packaging, testing and electronic manufacturing services accounted for 53.8%, 11.7% and 32.3% of our net revenues, respectively.

#### Packaging Services

We offer a broad range of package types to meet the requirements of our customers, with a focus on advanced packaging solutions. These include advanced packages such as flip-chip BGA, flip-chip CSP, aCSP (advanced chip



scale packages) and IC wirebonding packages, including leadframe-based package types such as quad flat packages (QFP), thin quad flat packages (TQFP), bump chip carrier (BCC) and quad flat no-lead (QFN) packages, aQFN (advanced QFN) and package types based on substrates, such as Plastic BGA. Besides, we provide 3D chip packages, such as MAP POP (package on package) and aMAP POP (advanced, laser ablation type), which enable our customers to mount packages more easily. We also offer other forms of stacked die solutions in different package types, e.g., stacked die QFN, hybrid BGAs containing stacked wire bond and fc die. We are also developing the latest generation of stacked die packages based on TSV (Through Silicon Via) technology. Our first product has been a CMOS image sensor with TSV to minimize the form factor. In addition, to meet current trends towards low cost solutions, we provide copper wire bonding solutions which can be applied to current gold wire products. We believe we are among the leaders in such advanced packaging processes and technologies and are well positioned to lead the technology migration in the semiconductor packaging industry.

**Advanced Packages.** The semiconductor packaging industry has evolved to meet the requirements of high-performance electronics products. We believe that there will continue to be growing demand for packaging solutions with increased input/output density, smaller size and better heat dissipation characteristics. We assemble system-in-a-package (SiP) products, which involve the integration of more than one chip into the same package. In addition, we have focused on developing our capabilities in some advanced packaging solutions, such as aCSP (Wafer level chip scale package), flip-chip BGA, Heat-Spreader FCBGA, flip-chip CSP, Hybrid FCCSP (Flip-Chip + W/B), Flip-Chip PiP (Package in Package) and aS3™ (Advanced Single Sided Substrate, which is currently under development). Flip-chip BGA technology replaces wire bonding with wafer bumping for interconnections within the package. Wafer bumping involves the placing of tiny solder balls, instead of wires, on top of dies for connection to substrates. As compared with more traditional packages, which allow input/output connection only on the boundaries of the dies, flip-chip packages significantly enhance the input/output flow by allowing input/output connection over the entire surface of the dies.

Chip scale packages typically have an area no greater than 1.2 times of the silicon die. For wafer level package, the electrical connections are plated or printed directly onto the wafer itself, resulting in a package very close to the size of the silicon die. Wafer-level packages do not include an interposer so they are unlike substrate-based packages, where the die is usually mounted on an interposer which contains electrical connections in the form of small bumps or balls.

We provide numerous technologies to meet various customer demands. The following table sets forth our principal advanced packages.

Package Types	Number of Leads	Description	End-Use Applications
Wafer Level Chip Scale Package (aCSP)	6-100	A wafer level chip scale package that can be directly attached to the circuit board. Provides shortest electrical path from the die pad to the circuit board, thereby enhancing electrical performance.	Cellular phones, personal digital assistants, watches, MP3 players, digital cameras and camcorders.
Flip-Chip Chip Scale Package (FC-CSP, a-fCSP)	16-560	A lightweight package with a small, thin profile that provides better protection for chips and better solder joint reliability than other comparable package	RFICs and memory ICs such as digital cameras, DVDs, devices that utilize WiMAX technology, cellular phones, GPS devices and personal

Flip-Chip PiP (Package in Package) (FC-CSP PiP)	500-980	types. System In Package for Flip-Chip+Memory die inside with a better electrical performance package types.	computer peripherals. Application processor for smartphone, data modern on portable devices.
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Package Types	Number of Leads	Description	End-Use Applications
Flip-Chip BGA	16-2916	Using advanced interconnect technology, the flip-chip BGA package allows higher density of input/output connection over the entire surface of the dies. Designed for high-performance semiconductors that require high density of interconnects in a small package.	High-performance networking, graphics and processor applications.
Hybrid (Flip-Chip and Wire Bonding)	49-608	A package technology which stacks a die on top of a probed good die to integrate ASIC and memory (flash, SRAM and DDR) into one package and interconnects them with wire bonding and molding. This technology suffers from known good die issues (i.e., one bad die will ruin the entire module). Rework is also not an option in hybrid packages.	Digital cameras, smartphones, bluetooth applications and personal digital assistants.
aS3	up to 300	Ultra-thin profile package which is excellent on middle pin count alternative solution; standard BT material and manufacturing equipment; and lower cost via on pad.	High I/O and short wire length package solution in high performance requirement.

IC Wirebonding. We provide IC wirebonding, including leadframe-based packages and substrate-based packages. Leadframe-based packages are packaged by connecting the die, using wire bonders, to the leadframe with gold wire or copper wire. As packaging technology improves, the number of leads per package increases. In addition, improvements in leadframe-based packages have reduced the footprint of the package on the circuit board and improved the electrical performance of the package. To have higher interconnect density and better electrical performance, semiconductor packages have evolved from leadframe-based packages to substrate-based packages. The key differences of these package types are: the size of the package; the density of electrical connections the package can support; flexibility at lower costs; the thermal and electrical characteristics of the package; and environmentally conscious designs. Substrate-based packages generally employ the BGA design. Whereas traditional leadframe technology places the electrical connection around the perimeter of the package, the BGA package type places the electrical connection at the bottom of the package surface in the form of small bumps or balls. These small bumps or balls are typically distributed evenly across the bottom surface of the package, allowing greater distance between individual leads and higher pin-counts. Our expertise in BGA packages also includes capabilities in stacked-die BGA, which assembles multiple dies into a single package.

3D packaging has recently received a lot of publicity because of the advent of TSV (Through Silicon Via) based chip stacking. Chip stacking has been implemented for many years, albeit without TSVs. Wire bond die is routinely stacked on leadframes as well as BGA substrates. A more recent implementation is the stacking of packages as

package on package (PoP) and the more specialized package in package (PiP). ASE has advanced PoP by the invention of aMAPPoP which provides the package interconnects by exposing a molded in solder ball with a laser via. Aside from being cost effective due to block molding, this PoP also has much lower warpage, greatly improving the stacking yield.

The following table sets forth our principal IC wirebonding packages.

Package Types	Number of Leads	Description	End-Use Applications
Advanced Quad Flat No-Lead Package (aQFN)	104-276	aQFN allows for leadless, multi-row and fine-pitch leadframe packaging and is characterized by enhanced thermal and electrical performance. aQFN is a cost-effective packaging solution due to its cost-effective materials and simpler packaging process.	Telecommunications products, wireless local access networks, personal digital assistants, digital cameras, low to medium lead count packaging information appliances.
Quad Flat Package (QFP)/Thin Quad Flat Package (TQFP)	44-256	Designed for advanced processors and controllers, application-specific integrated circuits and digital signal processors.	Multimedia applications, cellular phones, personal computers, automotive and industrial products, hard disk drives, communication boards such as ethernet, integrated services digital networks and notebook computers.
Quad Flat No-Lead Package (QFN)/Microchip Carrier (MCC)	12-84	QFN, also known as MCC, uses half-encapsulation technology to expose the rear side of the die pad and the tiny fingers, which are used to connect the chip and bonding wire with printed circuit boards.	Cellular phones, wireless local access networks, personal digital assistant devices and digital cameras.
Bump Chip Carrier (BCC)	16-156	BCC packages use plating metal pads to connect with printed circuit boards, creating enhanced thermal and electrical performance.	Cellular phones, wireless local access networks, personal digital assistant devices and digital cameras.
Small Outline Plastic Package (SOP)/Thin Small Outline Plastic Package (TSOP)	8-56	Designed for memory devices including static random access memory, or SRAM, dynamic random access memory, or DRAM, fast static RAM, also called FSRAM, and flash memory devices.	Consumer audio/video and entertainment products, cordless telephones, pagers, fax machines, printers, copiers, personal computer peripherals, automotive parts, telecommunications products, recordable optical disks and hard disk drives.
Small Outline Plastic J-Bend Package (SOJ)	20-44	Designed for memory and low pin-count applications.	DRAM memory devices, microcontrollers, digital analog conversions and audio/video

applications.

Plastic Leaded Chip  
Carrier (PLCC)

28-84

Designed for applications that  
do not require low-profile  
packages with high density of  
interconnects.

Personal computers, scanners,  
electronic games and monitors.

Plastic Dual In-line  
Package (PDIP)

8-64

Designed for consumer  
electronic products.

Telephones, televisions,  
audio/video applications and  
computer peripherals.

Package Types	Number of Leads	Description	End-Use Applications
Plastic BGA	119-1520	Designed for semiconductors which require the enhanced performance provided by plastic BGA, including personal computer chipsets, graphic controllers and microprocessors, application-specific integrated circuits, digital signal processors and memory devices.	Telecommunications products, global positioning systems, notebook computers, disk drives and video cameras.
Stacked-Die BGA	120-1520	Combination of multiple dies in a single package enables package to have multiple functions within a small surface area.	Telecommunications products, local area networks, graphics processor applications, digital cameras and pagers.
Package-on-Package (POP, aMAP POP)	136-904	This technology places one package on top of another to integrate different functionalities while maintaining a compact size. It offers procurement flexibility, low cost of ownership, better total system cost and faster time to market. Designers typically use the topmost package for memory applications and the bottommost package for ASICs. By using this technology, the memory known good die issue can be mitigated and the development cycle time and cost can be reduced.	Cellular phones, personal digital assistants and system boards.
Land Grid Array (LGA)	10-72	Leadless package which is essentially a BGA package without the solder balls. Based on laminate substrate, land grid array packages allow flexible routing and are capable of multichip module functions.	High frequency integrated circuits such as wireless communications products, computers servers and personal computer peripherals.

System in Package or Modules. As miniaturization requirements for electronic devices increase, smaller and lighter SiPs are garnering much attention within the industry. Wafer level integration-passive device technology has become increasingly important. Passive devices such as inductors, capacitors, resistors, filters and diplexers are those

components occupying the largest area in printed circuit boards; therefore, miniaturization and integration is key to advanced SiPs. This can be achieved through integrating passive components on an individual substrate using a thin film process known as MCM-D or IPD (Integrated Passive Device). The IPD can then be used as a package substrate or interposer for SiP. This manufacturing method will enhance product performance and also reduce overall costs. The extension of our current RDL (Redistribution) process can be used to build high quality factor (Q) inductor and RF circuits on top of CMOS (Complementary Metal–Oxide–Semiconductor) wafers. IPD is an enabling technology for advanced SiP. It can be used in the following three approaches to enhance product performance: several solutions to replace discrete components such as Balun, Filter, etc. or to integrate certain passive components and act as interposer, or to replace PWB and act as a substrate of the module.

We also offer module assembly services, which combine one or more packaged semiconductors with other components in an integrated module to enable increased functionality, typically using automated surface mount



technology, or SMT, machines and other machinery and equipment for system-level assembly. End-use applications for modules include cellular phones, PDAs, wireless LAN applications, Bluetooth applications, camera modules, automotive applications and toys.

**Interconnect Materials.** Interconnect materials connect the input/output on the semiconductor dies to the printed circuit board. Interconnect materials include substrate, which is a multi-layer miniature printed circuit board, and is an important element of the electrical characteristics and overall performance of semiconductors. We produce substrates for use in our packaging operations.

The demand for higher performance semiconductors in smaller packages will continue to spur the development of advanced substrates that can support the advancement in circuit design and fabrication. As a result, we believe that the market for substrates will grow and the cost of substrates as a percentage of the total packaging process will increase. In the past, substrates we designed for our customers were produced by independent substrate manufacturers. Since 1997, we have been designing and producing a portion of our interconnect materials in-house. In 2012, our interconnect materials operations supplied approximately 29.8% of our consolidated substrate requirements by value.

The following table sets forth, for the periods indicated, the percentage of our packaging revenues accounted for by each principal type of packaging products or services.

	Year Ended December 31,					
	2010		2011		2012	
	(percentage of packaging revenues)					
Advanced packaging(1)	16.3	%	19.5	%	23.6	%
IC Wirebonding(2)	73.3		69.4		65.9	
Discrete and other	10.4		11.1		10.5	
Total	100.0	%	100.0	%	100.0	%

(1) Includes bumping, flip chip and chip scale package.

(2) Includes leadframe-based packages such as QFP/TQFP, QFN/MCC and PLCC/PDIP and substrate-based packages, such as various BGA package types and LGA.

### Testing Services

We provide a complete range of semiconductor testing services, including front-end engineering test, wafer probing, final testing of logic/mixed-signal/RF/3D IC/Discrete and other test-related services.

The testing of semiconductors requires technical expertise and knowledge of the specific applications and functions of the semiconductors tested as well as the testing equipment utilized. We believe that our testing services employ technology and expertise which are among the most advanced in the semiconductor industry. In addition to maintaining different types of testing equipment, which enables us to test a variety of semiconductor functions, we work closely with our customers to design effective testing solutions on multiple equipment platforms for particular semiconductors.

In recent years, complex, high-performance logic/mixed-signal/RF/3D IC semiconductors have accounted for an increasing portion of our testing revenues. As the testing of complex, high-performance semiconductors requires a large number of functions to be tested using more advanced testing equipment, these products generate higher revenues per unit of testing time, as measured in central processing unit seconds.

Front-End Engineering Testing. We provide front-end engineering testing services, including customized software development, electrical design validation, and reliability and failure analysis.

- **Customized Software Development.** Test engineers develop customized software to test the semiconductor using advanced testing equipment. Customized software, developed on specific test platforms, is required to test the conformity of each particular semiconductor type to its unique functionality and specification.
- **Electrical Design Validation.** A prototype of the designed semiconductor is subjected to electrical tests using advanced test equipment and customized software. These tests assess whether the prototype semiconductor complies with a variety of different operating specifications, including functionality, frequency, voltage, current, timing and temperature range.
- **Reliability Analysis.** Reliability analysis is designed to assess the long-term reliability of the semiconductor and its suitability of use for intended applications. Reliability testing can include “burn-in” services, which electrically stress a device, usually at high temperature and voltage, for a period of time long enough to cause the failure of marginal devices.
- **Failure Analysis.** In the event that the prototype semiconductor does not function to specifications during either the electrical design validation or reliability testing processes, it is typically subjected to failure analysis to determine the cause of the failure to perform as anticipated. As part of this analysis, the prototype semiconductor may be subjected to a variety of analyses, including electron beam probing and electrical testing.

**Wafer Probing.** Wafer probing is the step immediately before the packaging of semiconductors and involves visual inspection and electrical testing of the processed wafer for defects to ensure that it meets our customers’ specifications. Wafer probing services require expertise and testing equipment similar to that used in final testing, and most of our testers can also be used for wafer probing.

**Logic/Mixed-signal/RF/3D IC/Discrete Final Testing.** We conduct final tests of a wide variety of logic/mixed-signal/RF/3D IC/discrete semiconductors, with the number of leads or bumps ranging from the single digits to over ten thousand and operating frequencies of over 10 Gbps for digital semiconductors and 6 GHz for radio frequency semiconductors, which are at the high end of the range for the industry. The products we test include semiconductors used for wired, wireless and mobile communications, home entertainment and personal computer applications, as well as a variety of consumer and application-specific integrated circuits for various specialized applications.

**Other Test-Related Services.** We provide a broad range of additional test-related services, including:

- **Electric Interface Board and Mechanical Test Tool Design.** Process of designing individualized testing apparatuses such as test load boards, sockets, handler change kits, and probe cards for unique semiconductor devices and packages.
- **Program Conversion.** Process of converting program from one test platform to different test platforms to reduce cost of test.
- **Program Efficiency Improvement.** Process of optimizing the program code or increasing site count of parallel test to improve test throughput.
- **Remote Program Debugging.** Process of allowing the customer to debug their test program remotely through internet connection.
- **Burn-in Testing.** Burn-in testing is the process of electrically stressing a device, usually at high temperature and voltage, for a period of time to simulate the continuous use of the device to determine whether this use would

cause the failure of marginal devices.

- **Module SiP Testing.** We provide module SiP testing through integrated bench solution or automatic test equipment to our customers with a complete solution with respect to wireless connectivity devices, global positioning system devices, personal navigation devices and digital video broadcasting devices.

- Dry Pack. Process which involves heating semiconductors in order to remove moisture before packaging and shipping to customers.
- Tape and Reel. Process which involves transferring semiconductors from a tray or tube into a tape-like carrier for shipment to customers.

Drop Shipment Services. We offer drop shipment services for shipment of semiconductors directly to end users designated by our customers. Drop shipment services are provided mostly in conjunction with logic/mixed-signal/RF/3D IC/discrete testing. We provide drop shipment services to a significant percentage of our testing customers. A substantial portion of our customers at each of our facilities have qualified these facilities for drop shipment services. Since drop shipment eliminates the additional step of inspection by the customer before shipment to the end user, quality of service is a key consideration. We believe that our ability to successfully execute our full range of services, including drop shipment services, is an important factor in maintaining existing customers as well as attracting new customers.

The following table sets forth, for the periods indicated, the percentage of our testing revenues accounted for by each type of testing service.

	Year Ended December 31,					
	2010		2011		2012	
	(percentage of testing revenues)					
Testing Services:						
Front-end engineering testing	2.2	%	2.1	%	2.3	%
Wafer probing	13.8		12.6		17.2	
Final testing	84.0		85.3		80.5	
Total	100.0	%	100.0	%	100.0	%

Electronic Manufacturing Services. Since our acquisition of the controlling interest of Universal Scientific in February 2010, we also provide integrated solutions for electronics manufacturing services in relation to computers, peripherals, communications, industrial, automotive, and storage and server applications. The key products and services we offer to our customers, for instance, include:

- Computers: motherboards for server & desktop PC; peripheral; port replicator; network attached storage; and technical services;
  - Communications: Wi-Fi; WiMAX; SiP and Hybrid SiP;
  - Consumer products: control boards for flat panel devices;
- Automotive electronics: automotive electronic manufacturing services; car LED lighting; regulator/rectifier; and
  - Industrial products: point-of-sale systems; smart handheld devices.

#### Seasonality

See “Item 5. Operating and Financial Review and Prospects—Operating Results and Trend Information—Quarterly Net Revenues, Gross Profit and Gross Margin.”

#### Sales and Marketing

### Sales and Marketing Offices

We maintain sales and marketing offices in Taiwan, the United States, Austria, Belgium, France, Germany, Singapore, the Philippines, the PRC, Korea, Malaysia, Japan, Mexico and other countries. Our sales and marketing offices in Taiwan are located in Hsinchu and Kaohsiung. We conduct marketing research through our customer

service personnel and through our relationships with our customers and suppliers to keep abreast of market trends and developments. We also provide advice in the area of production process technology to our major customers planning the introduction of new products. In placing orders with us, our customers specify which of our facilities these orders will go to. Our customers conduct separate qualification and correlation processes for each of our facilities that they use. See “—Qualification and Correlation by Customers.”

#### Customers

Our five largest customers together accounted for approximately 26.0%, 26.8% and 31.2% of our net revenues in 2010, 2011 and 2012, respectively. No single customer accounted for more than 10% of our net revenues in 2010, 2011 and 2012.

We package and test for our customers a wide range of products with end-use applications in the communications, computing, and consumer electronics/industrial/automotive sectors. The following table sets forth a breakdown of the percentage of our net revenues generated from our packaging and testing services, for the periods indicated, by the principal end-use applications of the products which we packaged and tested.

	Year Ended December 31,					
	2010		2011		2012	
Communications	47.5	%	52.3	%	51.9	%
Computing	16.9		14.2		12.2	
Consumer electronics/industrial/automotive	35.2		33.0		35.5	
Other	0.4		0.5		0.4	
Total	100.0	%	100.0	%	100.0	%

In addition, we have provided electronic manufacturing services since our acquisition of the controlling interest of Universal Scientific in February 2010. Our electronic manufacturing services provide a wide range of products with end-use applications. The following table sets forth a breakdown of the percentage of our net revenues generated from our electronic manufacturing services for the periods indicated by the principal end-use applications.

	Year Ended December 31,					
	2010		2011		2012	
Communications	34.7	%	36.1	%	36.8	%
Computing	25.9		22.1		24.3	
Consumer electronics	19.4		18.5		14.2	
Industrial	12.5		13.4		15.5	
Automotive	7.0		9.2		7.9	
Other	0.5		0.7		1.3	
Total	100.0	%	100.0	%	100.0	%

We categorize our revenues geographically based on the country in which the customer is headquartered. The following table sets forth, for the periods indicated, the percentage breakdown by geographic regions of our revenues.

	Year Ended December 31,					
	2010		2011		2012	
America	55.9	%	58.1	%	61.4	%
Taiwan	19.7		20.0		17.3	
Asia	13.6		11.3		11.5	
Europe	10.8		10.6		9.8	
Total	100.0	%	100.0	%	100.0	%

#### Qualification and Correlation by Customers

Customers generally require that our facilities undergo a stringent qualification process during which the customer evaluates our operations and production processes, including engineering, delivery control and testing capabilities. The qualification process typically takes up to several weeks, but can take longer depending on the requirements of the customer. In the case of our testing operations, after we have been qualified by a customer and before the customer delivers semiconductors to us for testing in volume, a process known as correlation is undertaken. During the correlation process, the customer provides us with sample semiconductors to be tested and either provides us with the test program or requests that we develop a conversion program. In some cases, the customer also provides us with a data log of results of any testing of the semiconductors which the customer may have conducted previously. The correlation process typically takes up to two weeks, but can take longer depending on the requirements of the customer. We believe our ability to provide turnkey services reduces the amount of time spent by our customers in the qualification and correlation process. As a result, customers utilizing our turnkey services are able to achieve shorter production cycles.

#### Pricing

We price our packaging services and electronic manufacturing services, taking into account the actual costs, with reference to prevailing market prices. We price our testing services primarily on the basis of the amount of time, measured in central processing unit seconds, taken by the automated testing equipment to execute the test programs specific to the products being tested, as well as the cost of the equipment, with reference to prevailing market prices. Prices for our packaging, testing and electronic manufacturing services are confirmed at the time orders are received from customers, which is typically several weeks before delivery.



## Raw Materials and Suppliers

### Packaging

The principal raw materials used in our packaging processes are interconnect materials such as leadframes and substrates, gold wire and molding compound. The silicon die, which is the functional unit of the semiconductor to be packaged, is supplied in the form of silicon wafers. Each silicon wafer contains a number of identical dies. We receive the wafers from the customers or the foundries on a consignment basis. Consequently, we generally do not incur inventory costs relating to the silicon wafers used in our packaging process.

We do not maintain large inventories of leadframes, substrates, gold wire or molding compound, but generally maintain sufficient stock of each principal raw material based on blanket orders and rolling forecasts of near-term requirements received from customers. In addition, several of our principal suppliers dedicate portions of their inventories as reserves to meet our production requirements. However, shortages in the supply of materials experienced by the semiconductor industry have in the past resulted in occasional price adjustments and delivery delays. For example, in the first half of 2000, the industry experienced a shortage in the supply of advanced substrates used in BGA packages, which, at the time, were only available from a limited number of suppliers located primarily in Japan. In addition, recent fluctuations in gold prices have affected the price at which we have been able to purchase our principal raw materials. In order to reduce the adverse impact caused by the price fluctuations of raw materials, we have developed substitute raw materials, such as copper, the cost of which is much cheaper than that of gold. However, we cannot guarantee that we will not experience shortages or price increase in the near future or that we will be able to obtain adequate supplies of raw materials in a timely manner and at a reasonable price or to develop any substitute raw materials. In the event of a shortage and/or price increase, we generally inform our customers and work together to accommodate changes in delivery schedules and/or the price increase of raw materials.

We produce substrates for use in our packaging operations. In 2012, our interconnect materials operations supplied approximately 29.8% of our consolidated substrate requirements by value. See “—Principal Products and Services—Packaging Services—Interconnect Materials.”

As a result of the “Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment,” or RoHS, which became effective on July 1, 2006, we have adjusted our purchases of raw materials and our production processes in order to use raw materials that comply with this legislation for part of our production. This legislation restricts the use in the European Union, or EU, of certain substances the EU deems harmful to consumers, which includes certain grades of molding compounds, solder and other raw materials that are used in our products. Manufacturers of electrical and electronic equipment must comply with this legislation in order to sell their products in an EU member state. Any failure on the environmental requests on our products, such as Directive 2002/95/EC may have a material adverse effect on our results of operations.

### Testing

For the functional and burn-in testing of semiconductors, no other raw materials are needed. However, we often design and outsource manufacturing of test interface products such as load boards, probe cards and burn-in boards.

### Electronic Manufacturing Services

Our manufacturing processes use many raw materials in our electronic manufacturing services. For 2012, the raw materials costs accounted for 78.4% of our net revenues from electronic manufacturing services. Our principal raw materials include, among others, printed circuit boards, integrated chips, ink, semiconductor devices, computer peripherals and related accessories and electronic components. Our principal raw materials varied in the past,

depending on the end-use products we provided.

To ensure the quality, on-time delivery and pricing competitiveness, we have established both a standardized supplier assessment system and an evaluation mechanism, continued to maintain close working relationships with our suppliers and jointly created a stable and sustainable supply chain. In addition, we adjusted the procurement strategy in line with industry trends as well as the nature of raw materials and decentralized the sources of raw materials to lower the concentration risk of supply. However, we cannot assure you that we will not experience any

shortage or price increase in the near future. See “Item 3. Key Information -Risk Factor - Our revenues and profitability may decline if we are unable to obtain adequate supplies of raw materials in a timely manner and at a reasonable price.”

#### Equipment

#### Packaging

The most important equipment used in the semiconductor packaging process is the wire bonder. Wire bonders connect the input/output terminals on the silicon die using extremely fine gold wire to leads on leadframes or substrates. Typically, a wire bonder may be used, with minor modifications, for the packaging of different products. We purchase our wire bonders principally from Kulicke & Soffa Industries Inc. and others. As of February 28, 2013, we operated an aggregate of 15,559 wire bonders, of which 15,314 were fine-pitch wire bonders. As of the same date, 31 of the wire bonders operated by us were consigned by customers. For the packaging of certain types of substrate-based packages, die bonders are used in place of wire bonders. We purchase our die bonders principally from Esec AG, ASM Assembly Automation Ltd. and Hitachi High Technologies Corporation. The number of bonders at a given facility is commonly used as a measure of the packaging capacity of the facility. In addition to bonders, we maintain a variety of other types of packaging equipment, such as wafer grind, wafer mount, wafer saw, automated molding machines, laser markers, solder plate, pad printers, dejunkers, trimmers, formers, substrate saws and scanners. We purchase our molding machines principally from ASM Assembly Automation Ltd., Towa Corporation and Fico B.V.

#### Testing

Testing equipment is the most capital intensive component of the testing process. We generally seek to purchase testers from different suppliers with similar functionality and the ability to test a variety of different semiconductors. We purchase testers from major international manufacturers, including Advantest Ltd., Teradyne, Inc., LTX-Credence Corporation, Seiko Epson and Tokyo Electron Limited. Upon acquisition of new testers, we install, configure, calibrate, perform burn-in diagnostic tests on and establish parameters for the testers based on the anticipated requirements of existing and potential customers and considerations relating to market trends. As of February 28, 2013, we operated an aggregate of 2,907 testers, of which 700 were consigned by customers and 90 were leased under operating leases. In addition to testers, we maintain a variety of other types of testing equipment, such as automated handlers and probers (special handlers for wafer probing), scanners, reformers and computer workstations for use in software development. Each tester may be attached to a handler or prober. Handlers attach to testers and transport individual packaged semiconductor to the tester interface. Probers similarly attach to the tester and align each individual die on a wafer with the interface to the tester.

For the majority of our testing equipment, we often base our purchases on prior discussions with our customers about their forecast requirements. The balance consists of testing equipment on consignment from customers and which are dedicated exclusively to the testing of these customers' specific products.

Test programs, which are the softwares that drive the testing of specific semiconductors, are written for a specific testing platform. We sometimes perform test program conversions that enable us to test semiconductors on multiple test platforms. This portability between testers enables us to allocate semiconductors tested across our available test capabilities and thereby improve capacity utilization rates. In cases where a customer requires the testing of a semiconductor product that is not yet fully developed, the customer may provide computer workstations to us to test specific functions. In cases where a customer has specified testing equipment that was not widely applicable to other products which we test, we have required the customer to furnish the equipment on a consignment basis.

#### Electronic Manufacturing Services

The SMT (Surface Mount Technology) assembly line is the key facility of our electronic manufacturing operations, and generally includes a printer and one or two high-speed mounters and/or a multi-function mounter. The SMT assembly process primarily consists of the following three manufacturing steps: (i) solder paste stencil printing, (ii) component placement and (iii) solder reflow. High-speed SMT assembly systems offer both

economical and technical advantages which may reduce both production cost and time while meeting quality requirements. Thus, SMT has become the most popular assembly method for sophisticated electronic devices. We had 116 SMT lines as of February 28, 2013.

### Intellectual Property

As of February 28, 2013, we held 1,916 Taiwan patents, 791 U.S. patents, 725 PRC patents and 12 patents in other countries related to various semiconductor packaging technologies and invention, utility and design on our electronic manufacturing services. In addition, we also filed several trademarks applications in Taiwan, the United States, China and European Union. For example, “ASE”, “aCSP”, “a\_EASI”, “a-fcCSP”, “aQFN” “a-QFN”, “a-TiV”, “iSiP” and “iWLP” h registered in Taiwan.

We have also entered into various non-exclusive technology license agreements with other companies involved in the semiconductor manufacturing process, including Tessera Inc., Fujitsu Limited, Flip Chip International, L.L.C., Mitsui High-Tec, Inc., Infineon Technologies AG, Siliconware Precision Industries Co., Ltd., and STATS Chippac Ltd. The technology we license from these companies includes solder bumping, redistribution, ultra CSP assembly, advanced QFN assembly, wafer level packaging and other technologies used in the production of package types, such as BCC, flip-chip BGA, film BGA, aQFN, Package-in-Package (PiP) and chip embedding. The license agreement with Tessera Inc. will not expire until the expiration of the Tessera Inc. patents licensed by the agreement. For information regarding our intellectual property dispute with Tessera Inc., see “Item 8. Financial Information—Legal Proceedings.” Our license agreements with Flip Chip International, L.L.C. and Siliconware Precision Industries Co., Ltd. will not expire until the expiration of the patents licensed by the agreement. Our one license agreement with Infineon Technologies AG will expire on November 5, 2017, and another license agreement with Infineon Technologies AG will remain effect until expiration of the Infineon's patents licensed by the agreement. Our license agreement with Mitsui High-Tec, Inc. expired on June 24, 2012, and our license agreement with Fujitsu Limited renews automatically each year unless the parties to the agreement agree otherwise. Our license agreement with STATS Chippac Ltd. will expire on December 31, 2016.

Our success depends in part on our ability to obtain, maintain and protect our patents, licenses and other intellectual property rights, including rights under our license agreements with third parties.

### Quality Control

We believe that our advanced process technology and reputation for high quality and reliable services have been important factors in attracting and retaining leading international semiconductor companies as customers for our services and/or products. We maintain a quality control staff at each of our facilities. Our quality control staff typically includes engineers, technicians and other employees who monitor the processes in order to ensure high quality. Our quality assurance systems impose strict process controls, statistical in-line monitors, supplier control, data review and management, quality controls and corrective action systems. Our quality control employees operate quality control stations along production lines, monitor clean room environments and follow up on quality through outgoing product inspection and interaction with customer service staff. We have established quality control systems which are designed to ensure high quality products/service to customers, high testing reliability and high production yields at our facilities. We also have established an environmental management system in order to ensure that we can comply with the environmental standards of our customers and the countries within which they operate. See “—Raw Materials and Suppliers—Packaging.” In addition, our facilities have been qualified by all of our major customers after satisfying stringent quality standards prescribed by these customers.

Our packaging and testing operations are undertaken in clean rooms where air purity, temperature and humidity are controlled. To ensure stability and integrity of our operations, we maintain clean rooms at our facilities that meet U.S.

Federal Standard 209E class 1,000, 10,000 and 100,000 standards.

ISE Labs's testing facilities in Fremont, California, are considered suitably equipped by the Defense Logistics Agency to perform the MIL-STD-833 tests on monolithic microcircuits in accordance with the requirements of military specification MIL-PRF-38535.

We have also obtained many certifications on our packaging, testing and interconnect materials facilities. Some of these certifications are required by some semiconductor manufacturers as a threshold indicator of company's quality control standards or needed by many countries in connection with sales of industrial products. The table below sets forth the certifications we have for our packaging, testing and interconnect materials.

Location	ISO/TS 16949(1)	ISO 9001(2)	ISO 14001(3)	ISO 17025(4)	ISO 14064-1(5)	IECQ HSPM QC080000(6)	Sony Green(7)	OHSAS 18001(8)	TOSHMS and SA8000(9)
Taiwan	3	3	3	3	3	3	3	3	3
Shanghai, PRC	3	3	3		3	3	3	3	
Suzhou/Kunshan/Weihai, PRC	3	3	3			3	3	3	
Korea	3	3	3			3	3	3	
Japan	3	3	3			3	3		
Malaysia	3	3	3			3	3		
Singapore	3	3	3				3	3	
California		3	3	3					

- (1) ISO/TS16949 standards were originally created by the International Automotive Task Force in conjunction with the International Standards Organization, or ISO. These standards provide for continuous improvement with an emphasis on the prevention of defects and reduction of variation and waste in the supply chain.
- (2) ISO 9001 quality standards, set by the ISO, are related to quality management systems and designed to help organizations ensure that they meet the needs of customers and other stakeholders while meeting statutory and regulatory requirements related to the product.
- (3) ISO 14001 sets out the criteria for an environmental management system. It can be used by any organization that wants to improve resource efficiency, reduce waste and drive down costs.
- (4) ISO 17025 is the main ISO standard used by testing and calibration laboratories.
- (5) ISO 14064-1 standard is part of the ISO 14000 series of International Standards for environmental management. The ISO 14064 standard provides governments, businesses, regions and other organizations with a complementary set of tools for programs to quantify, monitor, report and verify greenhouse gas emissions.
- (6) IECQ HSPM QC080000 is a certification designed to manage, reduce and eliminate hazardous substances.
- (7) "Sony Green Partner" indicates our compliance with the "Sony Green Package" standard requirements.
- (8) OHSAS 18001 is a set of standards designed upon collaboration with occupational health and safety experts and now offered by many certification organizations as an indication of compliance with certain standards for occupational health and safety.
- (9) Taiwan Occupational and Health Management System, or TOSHMS, and SA8000, is the most widely recognized global standard for managing human rights in the workspace.

Since our acquisition of the controlling interest of Universal Scientific in February 2010, we began providing electronics manufacturing services, for which we also have strict process controls. The table below sets forth the

certifications we have obtained for our electronics manufacturing services facilities.

Location	ISO/TS 16949	ISO 9001	ISO 14001	ISO 14064-1	IECQ		OHSAS 18001
					QC 080000	TL 9000(1)	
Taiwan	3	3	3	3	3		3
Shenzhen, PRC	3	3	3	3	3	3	3
Shanghai, PRC	3	3	3	3	3	3	3
Kunshan, PRC		3	3		3		3
Mexico	3	3	3		3		

(1) TL 9000 quality management system sets forth the supply chain quality requirements of the global communications industry.

In addition, we have received various vendor awards from our customers for the quality of our products and services.



## Competition

We compete in the highly competitive independent semiconductor packaging and testing markets. We face competition from a number of sources, including other independent semiconductor packaging and testing companies. More importantly, we compete for the business of integrated device manufacturers with in-house packaging and testing capabilities and fabless semiconductor design companies with their own in-house testing capabilities. Some of these integrated device manufacturers have commenced, or may commence, in-house packaging and testing operations in Asia. Substantially all of the independent packaging and testing companies that compete with us have established operations in Taiwan.

Integrated device manufacturers that use our services continuously evaluate our performance against their own in-house packaging and testing capabilities. These integrated device manufacturers may have access to more advanced technologies and greater financial and other resources than we do. We believe, however, that we can offer greater efficiency at lower cost while maintaining equivalent or higher quality for several reasons. First, as we benefit from specialization and economies of scale by providing services to a large base of customers across a wide range of products, we are better able to reduce costs and shorten production cycles through high capacity utilization and process expertise. Second, as a result of our customer base and product offerings, our equipment generally has a longer useful life. Third, as a result of the continuing reduction of investments in in-house packaging and testing capacity and technology at integrated device manufacturers, we are better positioned to meet their advanced packaging and testing requirements on a large scale.

In addition, we have provided electronic manufacturing services since our acquisition of the controlling interest of Universal Scientific in February 2010. We face significant competition from other electronics manufacturing services providers, such as Hon Hai Precision Ind. Co., Ltd, with comprehensive integration, wide geographic coverage and large production capabilities that enable them to achieve economies of scale. We believe, however, that we can still achieve satisfactory performance in the market given that we have been able to provide products with high quality and we are capable of designing new products by cooperating with our customers.

## Environmental Matters

Our operations of packaging, interconnect materials and electronic manufacturing services generate environmental wastes, including gaseous chemical, liquid and solid industrial wastes. We have installed various types of anti-pollution equipment for the treatment of liquid and gaseous chemical waste generated at our facilities. We believe that we have adopted adequate anti-pollution measures for the effective maintenance of environmental protection standards that are consistent with the industry practice in the countries in which our facilities are located. In addition, we think we are in compliance in all material respects with present environmental laws and regulations applicable to our operations and facilities.

## Insurance

We have insurance policies covering property damage and damage to our production facilities, buildings and machinery. In addition, we have insurance policies covering our public and product liabilities. Significant damage to any of our production facilities would have a material adverse effect on our results of operations.

We are not insured against the loss of key personnel.

## ORGANIZATIONAL STRUCTURE

The following chart illustrates our corporate structure including our principal manufacturing subsidiaries as of March 31, 2013. The following chart does not include wholly-owned intermediate holding companies, internal trading companies and those companies without active operations.

### Our Consolidated Subsidiaries

#### ASE Test Taiwan

ASE Test Taiwan, which was acquired in 1990, is our wholly-owned subsidiary. It is incorporated in Taiwan and is engaged in the testing of integrated circuits.

#### ASE Test Malaysia

ASE Test Malaysia, which was established in 1991, is our wholly-owned subsidiary. It is incorporated in Malaysia and is engaged in the packaging and testing of integrated circuits.

#### ISE Labs

ISE Labs is our wholly-owned subsidiary. It is a semiconductor company specializing in front-end engineering testing that is incorporated in the United States and has its principal facilities located in Fremont, California. We acquired 70.0% of the outstanding shares of ISE Labs in 1999 through ASE Test, and increased our holding to 100.0% through purchases made in 2000 and 2002.

#### ASE Singapore Pte. Ltd.

ASE Singapore Pte. Ltd., our wholly-owned subsidiary, is incorporated in Singapore and provides packaging and testing services. We acquired ASE Singapore Pte. Ltd., which was wholly-owned by ISE Lab, through our acquisition of ISE Lab in 1999. In January 2011, ASE Singapore II Pte. Ltd. (formerly, EEMS Test Singapore) merged into ASE Singapore Pte. Ltd. after we acquired ASE Singapore II Pte. Ltd. in August 2010. See “Item 4 – History and Development of the Company – Acquisition of EEMS Test Singapore.”

#### ASE Electronics

ASE Material was established in 1997 as an ROC company for the production of interconnect materials, such as substrates, used in the packaging of semiconductors. We initially held a majority stake in ASE Material, but

acquired the remaining equity by means of a merger of ASE Material with and into us in August 2004. In August 2006, we spun off the operations originally conducted through ASE Material into our wholly-owned subsidiary ASE Electronics. ASE Electronics currently supplies our packaging operations with a substantial portion of our substrate requirements. The facilities of ASE Electronics are primarily located in the Nantze Export Processing Zone near our packaging and testing facilities in Kaohsiung, Taiwan.

#### ASE Chung Li and ASE Korea

In July 1999, we purchased Motorola's Semiconductor Products Sector operations in Chung Li, Taiwan and Paju, South Korea for the packaging and testing of semiconductors, thereby forming ASE Chung Li and ASE Korea. In August 2004, we acquired the remaining outstanding shares of ASE Chung Li that we did not already own and merged ASE Chung Li into us.

#### ASE Japan

ASE Japan, which we acquired from NEC Electronics Corporation in May 2004, is our wholly-owned subsidiary. It is incorporated in Japan and is engaged in the packaging and testing of semiconductors.

#### ASE Shanghai

ASE Shanghai was established in 2001 as a wholly-owned subsidiary of ASE Inc. and began operations in June 2004. ASE Shanghai primarily manufactures and supplies interconnect materials for our packaging operations.

#### ASESH AT

We acquired 100.0% of GAPTECH, now known as ASESH AT, in January 2007 for a purchase price of US\$60.0 million. ASESH AT is a PRC company based in Shanghai, China that provides packaging and testing services for a wide range of semiconductors.

#### ASEN

In September 2007, we acquired 60.0% of ASEN, formerly known as NXP Semiconductors Suzhou Ltd., from NXP Semiconductors for a purchase price of US\$21.6 million. NXP Semiconductors holds the remaining 40.0% of ASEN. ASEN is based in Suzhou, China and is engaged in semiconductor packaging and testing.

#### ASEWH

In May 2008, we acquired 100.0% of the shares of ASEWH from Aimhigh Global Corp. and TCC Steel. ASEWH is based in Weihai, Shandong, China and is engaged in semiconductor packaging and testing.

#### ASEKS

ASEKS was set up in 2004 and began operating in 2010. ASEKS is based in Kunshan, China and is engaged in semiconductor packaging and testing.

#### Yang Ting

We acquired 100.0% of the shares of Yang Ting in January 2012. Yang Ting is based in Taichung, ROC, and specializes in semiconductor packaging and testing services.

### Universal Scientific Group

Universal Scientific is incorporated in ROC and provides electronic manufacturing services in relation to computers, consumer electronics, communications, industrial and automotive. Its subsidiaries include, among others, Universal Scientific Shanghai, Universal Global Scientific Industrial Co. Ltd, or UGTW, Universal Electronics (Shenzhen) Co. Ltd., or USISZ, Universal Global Technology (Kunshan) Co. Ltd., or UGKS, and Universal Scientific Industrial De Mexico S.A. DE C.V., or USI Mexico.

We purchased 22.6% of the outstanding shares of Universal Scientific in 1999. We subsequently increased our holding to 23.3% in 2000. As of December 31, 2009, we held approximately 18.1% of Universal Scientific's outstanding equity shares, which allowed us to exercise significant influence over Universal Scientific and therefore accounted for this investment by the equity method.

In February 2010, we, along with our two subsidiaries, J&R Holding Limited and ASE Test, through a cash and stock tender offer, acquired 641,669,316 common shares of Universal Scientific at NT\$21 per share, amounting to NT\$13,475.1 million in total, resulting in our controlling ownership over Universal Scientific. As a result, Universal Scientific became our subsidiary. The shares of Universal Scientific were delisted from the Taiwan Stock Exchange on June 17, 2010, which were previously listed under the symbol "2350". In August 2010, we acquired additional 222,243,661 shares of Universal Scientific through another tender offer at NT\$21 per share, amounting to NT\$4,667.1 million in total. We owned 99.2% of the outstanding common shares of Universal Scientific as of March 31, 2013.

In February 2012, Universal Scientific Shanghai completed its IPO on the Shanghai Stock Exchange. Total proceeds from the IPO was approximately RMB 811.7 million (US\$130.3 million) prior to deducting underwriting discounts and commissions. As of March 31, 2013, we indirectly held 88.6% of the total outstanding shares of Universal Scientific Shanghai through our subsidiaries Universal Scientific and ASE Shanghai.

#### PROPERTY, PLANTS AND EQUIPMENT

We operate a number of packaging, testing and electronic manufacturing facilities in Asia and the United States. Our facilities provide varying types or levels of services with respect to different end-product focus, customers, technologies and geographic locations. With our diverse facilities we are able to tailor our packaging, testing and electronic manufacturing solutions closely to our customers' needs. The following table sets forth the location, commencement of operation, primary use, approximate floor space and ownership of our principal facilities as of February 28, 2013.

Facility	Location	Commencement of Operation	Primary Use	Approximate Floor Space (in sq. ft.)	Owned or Leased
ASE Inc.	Kaohsiung, ROC	March 1984	Our primary packaging facility, which offers complete semiconductor manufacturing solutions in conjunction with ASE Test Taiwan and foundries located in Taiwan. Focuses primarily on advanced packaging services, including flip-chip, wafer bumping and fine-pitch wire bonding.	3,946,000	Land: leased Buildings: owned and leased
	Chung Li, ROC	Acquired in July 1999	An integrated packaging and testing	1,842,000	Land and buildings:

			facility that specializes in semiconductors for communications and consumer applications.		owned
	Nantou, ROC	April 2011	Our facility that provides packaging services.	110,000	Land and buildings: leased
ASE Test Taiwan	Kaohsiung, ROC	Acquired in April 1990	Our primary testing facilities, which offer complete semiconductor manufacturing solutions in conjunction with ASE	864,000	Land: leased Buildings: owned and

Facility	Location	Commencement of Operation	Primary Use	Approximate Floor Space (in sq. ft.)	Owned or Leased
			Inc.'s facility in Kaohsiung and foundries located in Taiwan. Focuses primarily on advanced logic/mixed-signal/RF/3D IC testing for integrated device manufacturers, fabless design companies and system companies.		leased
	Chung Li, ROC	October 2001	Our primary wafer probing testing facilities.	62,000	Land and building: leased
ASE Test Malaysia	Penang, Malaysia	February 1991	An integrated packaging and testing facility that focuses primarily on the requirements of integrated device manufacturers.	828,000	Land: leased Buildings: owned
ASE Korea	Paju, Korea	Acquired in July 1999	An integrated packaging and testing facility that specializes in semiconductors for radio frequency, sensor and automotive applications.	810,000	Land and buildings: owned
ISE Labs	California, USA Texas, USA	Acquired in May 1999	Front-end engineering and final testing facilities located in northern California in close proximity to some of the world's largest fabless design companies. Testing facilities located in close proximity to integrated device manufacturers and fabless companies in Texas.	96,000	Land and buildings: owned and leased
ASE Singapore	Singapore	Acquired in May 1999	An integrated packaging and testing facility that specializes in semiconductors for communication, computers and consumer applications.	282,000	Land: leased Buildings: owned and leased
ASE Shanghai		June 2004		1,431,000	

	Shanghai, China		Design and production of semiconductor packaging materials.		Land: leased Buildings: owned
ASE Japan	Takahata and Chiba, Japan	Acquired in May 2004	An integrated packaging and testing facility that specializes in semiconductors for cellular phone, household appliance and automotive applications.	415,000	Land and buildings: leased



Facility	Location	Commencement of Operation	Primary Use	Approximate Floor Space (in sq. ft.)	Owned or Leased
ASE Electronics	Kaohsiung, ROC	August 2006	Facilities for the design and production of interconnect materials such as substrates used in the packaging of semiconductors.	450,000	Land: leased Buildings: owned
ASESH AT	Shanghai, China	Acquired in January 2007	An integrated packaging and testing facility that specializes in semiconductors for communications and consumer applications.	909,000	Land: leased Buildings: owned
ASEN	Suzhou, China	Acquired in September 2007	An integrated packaging and testing facility that specializes in communication applications.	433,000	Land: leased Buildings: owned
ASEWH	Shandong, China	Acquired in May 2008	An integrated packaging and testing facility that specializes in semiconductors for communications, computing and consumer applications.	446,000	Land: leased Buildings: owned
ASEKS	Kunshan, China	July 2010	An integrated packaging and testing facility that specializes in semiconductors for communications and consumer applications.	1,489,000	Land: leased Buildings: owned
Yang Ting	Taichung, ROC	Acquired in January 2012	An integrated packaging and testing facility that specializes on computing applications.	161,000	Land: Leased Buildings: owned
Universal Scientific	Nantou, ROC	Acquired in February 2010	The parent company of Universal Scientific Group, engages in research and development activities for various electronic products and components.	1,009,000	Land: owned Buildings: owned

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USI Mexico	Guadalajara, Mexico	Acquired in February 2010	Manufacturing site, which offer Motherboard manufacture and system assembly.	164,000	Land: owned Buildings: owned
USISZ	Shenzhen, China	Acquired in February 2010	Manufacturing site, design, manufacture and marketing of motherboards, electronic components, accessories and related products in China.	611,000	Land: leased Buildings: owned
Universal Scientific	Shanghai, China	Acquired in	Manufacturing site, design, manufacture and marketing	680,000	Land: leased

Facility	Location	Commencement of Operation	Primary Use	Approximate Floor Space (in sq. ft.)	Owned or Leased
Shanghai		February 2010	marketing of motherboards, electronic components, accessories and related products in China.		Buildings: owned and leased
UGKS	Kunshan, China	August 2011	Manufacturing site, design, manufacture and marketing of motherboards, electronic components, accessories and related products in China.	388,000	Land: leased Buildings: leased
UGTW	Nantou, ROC	February 2010	Design, manufacture and marketing of electronic components, accessories and related products.	383,000	Buildings: leased

Our major leased property in Kaohsiung consists primarily of leases of land in the Kaohsiung Nantze Export Processing Zone between ASE Inc. and ASE Test Taiwan, as the lessees, and the Export Processing Zones Administration, or the EPZA, under the Ministry of Economic Affairs. The leases have ten-year terms that will expire in January 2023. No sublease or lending of the land is allowed. The EPZA has the right to adjust the rental price in the event the government revalues the land. The leases are typically renewable with three-month notice prior to the termination date.

For information on the aggregate capacity of our facilities we operate, see “—Business Overview—Equipment.”

#### Item 4A. Unresolved Staff Comments

None.

#### Item 5. Operating and Financial Review and Prospects

#### OPERATING RESULTS AND TREND INFORMATION

The following discussion of our business, financial condition and results of operations should be read in conjunction with our consolidated financial statements, which are included elsewhere in this annual report. This discussion contains forward-looking statements that reflect our current views with respect to future events and financial performance. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of any number of factors, such as those set forth under “Item 3. Key Information—Risk Factors” and elsewhere in this annual report. See “Special Note Regarding Forward-Looking Statements.”

#### Overview

We offer a broad range of semiconductor packaging, testing services and we also offer electronic manufacturing services since our acquisition of the controlling interest of Universal Scientific in February 2010. In addition to offering each service separately, we also offer turnkey services, which consist of the integrated packaging, testing and direct shipment of semiconductors to end users designated by our customers and solution-based proactive original design manufacturing, or ODM, with our customers. In addition, we started generating revenues from our real estate business since 2010. Our net revenues changed from NT\$188,742.8 million in 2010 and NT\$185,347.2 million in 2011 to NT\$193,972.4 million (US\$6,677.2 million) in 2012.

Discussed below are several factors that have had a significant influence on our financial results in recent years.

## Pricing and Revenue Mix

We price our services taking into account the actual costs involved in providing these services, with reference to prevailing market prices. The majority of our prices and revenues are denominated in U.S. dollars. Any significant fluctuation in the exchange rates, especially between NT dollars and U.S. dollars will affect our costs and, in turn, our revenues.

In the case of semiconductor packaging, the cost of the silicon die, typically the most costly component of the packaged semiconductor, is usually not reflected in our costs (or revenues) since it is generally supplied by our customers on a consignment basis.

The semiconductor industry is characterized by a general trend towards declining prices for products and services of a given technology over time. In addition, during periods of intense competition and adverse conditions in the semiconductor industry, the pace of this decline may be more rapid than in other years. The average selling prices of our packaging and testing services have experienced sharp declines during such periods as a result of intense price competition from other independent packaging and testing companies that attempt to maintain high capacity utilization levels in the face of reduced demand.

Declines in average selling prices have been partially offset historically by changes in our revenue mix, and typically the selling price is largely dependable on the complexity of the services. In particular, revenues derived from packaging more advanced package types, such as flip-chip BGA, higher density packages with finer lead-to-lead spacing, or pitch, and testing of more complex, high-performance semiconductors have increased as a percentage of total revenues. We intend to continue to focus on packaging more advanced package types, such as bumping and flip-chip BGA, developing and offering new technologies in packaging and testing services and expanding our capacity to achieve economies of scale, as well as improving production efficiencies for older technologies, in order to mitigate the effects of declining average selling prices on our profitability.

Our profitability for a specific package type does not depend linearly on its average selling price. Some of our more traditional package types, which typically have low average selling prices, may well command steadier and sometimes higher margins than more advanced package types with higher average selling prices.

## High Fixed Costs

Our operations, in particular our testing operations, are characterized by relatively high fixed costs. We expect to continue to incur substantial depreciation and other expenses especially from our acquisitions of packaging and testing equipment and facilities. Our profitability depends in part not only on absolute pricing levels for our products/services, but also on utilization rates on equipment, commonly referred to as “capacity utilization rates.” In particular, increases or decreases in our capacity utilization rates could have a significant effect on gross margins since the unit cost of our products and/or services generally decreases as fixed costs are allocated over a larger number of units. The capacity utilization rates of the machinery and equipment installed at our production facilities typically depend on factors such as the volume and variety of products, the efficiency of our operations in terms of the loading and adjustment of machinery and equipment for different products, the complexity of the different products to be packaged or tested, the amount of time set aside for the maintenance and repair of the machinery and equipment, and the experience and schedule of work shifts of operators.

In 2010, 2011 and 2012, our depreciation, amortization and rental expense included in cost of revenues as a percentage of net revenues was 9.9%, 11.6% and 11.4%, respectively. The decrease in depreciation, amortization and rental expense as a percentage of net revenues in 2012 compared to 2011 was primarily a result of an increase in our revenues. We begin depreciating our equipment when the machinery is placed into service. There may sometimes be a

time lag between when our equipment is available for use and when it achieves high levels of utilization. In periods of depressed industry conditions, such as the fourth quarter of 2008, we experienced lower than expected demand from customers, resulting in an increase in depreciation relative to net revenues. In particular, the capacity utilization rates for our testing equipment are more severely affected during an industry downturn as a result of a decrease in outsourcing demand from integrated device manufacturers, which typically maintain larger in-house testing capacity than in-house packaging capacity.

In addition to purchasing testers, we also lease a portion of our testers, which we believe allows us to better manage our capacity utilization rates and cash flow. Since testers operated under operating leases can be replaced with more advanced testers upon the expiration of the lease, we believe that these operating leases have enabled us to improve our capacity utilization rates by allowing us to better align our capacity with changes in equipment technology and the needs of our customers. For more information about our testers, including the number of testers under lease, see “Item 4. Information on the Company—Business Overview—Equipment—Testing.”

#### Raw Material Costs

Substantially all of our raw material costs are accounted for by packaging, the production of interconnect materials and electronic manufacturing services. In particular, our electronic manufacturing services acquired in 2010 require more significant demand of raw materials than our packaging and the production of interconnect materials. In 2010, 2011 and 2012, raw material cost as a percentage of our net revenues was 46.9%, 46.8% and 45.3%, respectively.

We have developed copper wire to gradually replace gold wire in the packaging processes in order to benefit from the lower material cost of copper. However, gold wire is still one of the principal raw materials we use in our packaging processes, and the recent volatility in the price of gold has affected our cost of revenues. In 2012, the spot rate for gold fluctuated from approximately US\$1,538 per ounce to approximately US\$1,792 per ounce according to the statistics published by The London Bullion Market Association. It may be difficult for us to adjust our average selling prices to account for fluctuations in the price of gold. We expect that gold wire will continue to be an important raw material for us and we therefore expect to continue to be subject to significant fluctuations in the price of gold.

#### Significant Acquisitions

In February 2010, we, along with our two subsidiaries, J&R Holding Limited and ASE Test, through a cash and stock tender offer, acquired 641,669,316 common shares of Universal Scientific at NT\$21 per share, amounting to NT\$13,475.1 million in total, resulting in our controlled ownership over Universal Scientific. As a result, Universal Scientific became our subsidiary. In August 2010, we acquired additional 222,243,661 shares of Universal Scientific through another tender offer at NT\$21 per share, amounting to NT\$4,667.1 million in total. We owned 99.2% of the outstanding common shares of Universal Scientific as of March 31, 2013. See “Item 4. Information on the Company—History and Development of the Company—Acquisition of Shares of Universal Scientific.”

Since our acquisitions of Universal Scientific, their results of operations have been consolidated into our results of operations. Any losses by Universal Scientific may have significant adverse effects on our net income.

#### Recent ROC GAAP Accounting Pronouncements

Effective January 1, 2011, we adopted the newly issued ROC SFAS No. 41 “Operating Segments.” The requirements of ROC SFAS No. 41 are based on the information about the components of the Company that the management uses to make decisions about operating matters. SFAS No. 41 requires identification of operating segments on the basis of internal reports that are regularly reviewed by a company’s chief operating decision makers in order to allocate resources to the segments and assess their performance. ROC SFAS No. 41 supersedes ROC SFAS No. 20 “Segment Reporting.”

Effective January 1, 2011, we adopted the newly revised ROC SFAS No. 34 “Financial Instruments: Recognition and Measurement.” The main revision includes that loans and receivables originated by a company are now covered by ROC SFAS No. 34.

On May 14, 2009, the Financial Supervisory Commission of the ROC, or the FSC, announced the “Framework for Adoption of IFRS by Companies in the ROC.” In this framework, starting on January 1, 2013, companies with shares listed on the Taiwan Stock Exchange or traded on the Taiwan GreTai Securities Market or Emerging Stock Market should prepare their financial statements in accordance with the Guidelines Governing the Preparation of Financial Reports by Securities Issuers and the IFRS, International Accounting Standards, and the Interpretations as well as related guidance translated by the Accounting Research and Development Foundation and issued by the



FSC. See “Item 3. Risk Factors— Our adoption of International Financial Reporting Standards (“IFRS”), effective January 1, 2013, as required by the ROC FSC may adversely affect our financial statements thereafter.”

#### Critical Accounting Policies and Estimates

Preparation of our consolidated financial statements requires us to make estimates and judgments in applying our critical accounting policies which have a significant impact on the results we report in our consolidated financial statements. We continually evaluate these estimates and assumptions. Actual results may differ from these estimates under different assumptions and conditions. Significant accounting policies are summarized as follows.

Revenue Recognition. Revenues are recognized when the rewards of ownership or services and the significant risk of the goods or services has been transferred to the buyers. Other criteria that we use to determine when to recognize revenue are:

- existence of persuasive evidence of an arrangement;
- the selling price is fixed or determinable; and
- collectibility is reasonably assured.

Our customers bear the title and risk of loss for those bare semiconductor wafers that we receive and package into finished semiconductors and/or those packaged semiconductors that we receive and test for performance specifications. Accordingly, the cost of customer-supplied semiconductor materials is not included in our consolidated financial statements.

A sales discount and return allowance is recognized in the period during which the sale is recognized, and is estimated based on historical experience, the management’s judgment and relevant factors.

Impairment of Accounts Receivable. We periodically record a provision for doubtful accounts based on our evaluation of the collectibility of our accounts receivable. The total amount of this provision is determined by us as specified under ROC SFAS No. 34, “Financial Instruments: Recognition and Measurement.” We first assess whether objective evidence of impairment exists individually in each customer for account receivable, then includes in a group basis with historical collective experience and similar credit risk characteristics and collectively assess them for impairment. As of December 31, 2010, 2011 and 2012, the allowance we set aside for doubtful accounts was NT\$134.0 million, NT\$128.9 million and NT\$80.1 million (US\$2.8 million), respectively. Additional allowances may be required in the future if the financial condition of our customers or general economic conditions further deteriorate, and this additional allowance would reduce our net income.

Inventories. Inventories are recorded at cost when acquired and stated at the lower of cost or net realizable values. Inventories are written down to net realizable value item by item. Materials received from customers for processing, mainly of semiconductor wafers, are excluded from inventories, as title and risk of loss remains with the customers. An allowance for loss on decline in market value and obsolescence is provided based on the difference between the cost of inventory and the estimated market value based upon assumptions about future demand and market conditions. An additional inventory provision may be required if actual market conditions are less favorable than those projected.

Valuation Allowances for Deferred Income Tax Assets. Tax benefits arising from deductible temporary differences, unused tax credits and net operating loss carryforwards are recognized as deferred income tax assets. We record a valuation allowance to the extent that we believe it is more likely than not that deferred income tax assets will not be realized. We have considered future taxable income and ongoing prudent and feasible tax planning strategies in

assessing the need and amount for the valuation allowance. In the event we were to determine that we would be able to realize our deferred income tax assets in the future in excess of our net recorded amount, an adjustment to our deferred income tax assets would increase income in the period such determination was made. Alternatively, should we determine that we would not be able to realize all or part of our deferred income tax assets in the future, an adjustment to our deferred income tax assets would decrease income in the period such determination was made.

**Realizability of Long-Lived Assets.** We are required to evaluate our equipment and other long-lived assets for impairment whenever there is an indication of impairment. If certain criteria are met, we are required to record an impairment charge.

In accordance with ROC SFAS No. 35, long-lived assets held and used by us are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Under ROC GAAP, if the recoverable amount increases in a future period, the amount previously recognized as impairment will be reversed and recognized as a gain. However, the adjusted amount may not exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss had been recognized. We measure any impairment for long-lived assets based on a projected future cash flow. If the long-lived assets are determined to be impaired, we recognize an impairment loss to the extent the present value of discounted cash flows attributable to the assets are less than their carrying value. We also perform a periodic review to identify assets that are no longer used and are not expected to be used in future periods. An impairment charge is recorded to the extent, if any, that the carrying amount of the idle assets exceeds their fair value. The process of evaluating the potential impairment of long-lived assets requires significant judgment. We are required to review for impairment groups of assets related to the lowest level of identifiable independent cash flows. In addition, we must make subjective judgments regarding the remaining useful lives of assets and the expected future revenue and expenses associated with the assets. Any changes in these estimates based on changed economic conditions or business strategies may result in material impairment charges in future periods.

In accordance with U.S. GAAP, long-lived assets held and used by us are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. For purposes of evaluating the recoverability of long-lived assets, the recoverability test is performed by comparing undiscounted net cash flows of an asset or asset groups against its or their carrying amount. If the recoverability test indicates that an impairment has occurred, the impairment loss is the amount of the asset's carrying amount in excess of the related fair value.

In 2010, 2011 and 2012, we recognized impairment losses of NT\$169.9 million, NT\$234.3 million and NT\$53.2 million (US\$1.8 million), respectively, on property, plant and equipment, and NT\$37.1 million, NT\$81.5 million and NT\$20.3 million (US\$0.7 million) on idle assets, respectively. See note 13 and note 15 to our consolidated financial statements included in this annual report.

**Business Combinations.** When we acquire businesses, we allocate the purchase price to tangible assets and liabilities and identifiable intangible assets acquired. Any residual purchase price is recorded as goodwill. The allocation of the purchase price requires management to make significant estimates in determining the fair values of assets acquired and liabilities assumed, especially with respect to intangible assets. These estimates are based on historical experience, information obtained from the management of the acquired companies and independent external service providers' reports. These estimates can include, but are not limited to, the cash flows that an asset is expected to generate in the future, the appropriate weighted-average cost of capital, and the synergistic benefits expected to be derived from the acquired business. In addition, pursuant to the revised U.S. GAAP, we need to measure the fair value of the investment we originally held and the noncontrolling interest. Before the revised U.S. GAAP became effective on January 1, 2009, the noncontrolling interest was measured at carrying amount, the same way as current ROC GAAP does. These estimates are inherently uncertain and unpredictable. In addition, unanticipated events and circumstances may occur which may affect the accuracy or validity of such estimates.

For example, we acquired Universal Scientific through tender offers in February and August 2010 and EEMS Test Singapore in August 2010 (see "Item 4 – Information on the Company – History and Development of the Company"); pursuant to ROC SFAS No. 25 "Business Combinations," No. 37 "Intangible Assets," and U.S. GAAP guidance relating to business combinations and goodwill and other intangible assets, acquired tangible assets and liabilities as well as

identified intangible assets were valued at estimates of their current fair values. The valuation of acquired intangible assets was determined based on management's estimates. In addition, the amortization method of these intangible assets is based on future economic benefits over the estimated life. In addition, we also recognized goodwill which represents the excess of the purchase price over the estimated fair value of the net assets acquired. See our consolidated statements of cash flow as well as note 14 and note 33(k) to our consolidated financial statements included in this annual report.

Goodwill. Goodwill is evaluated for impairment at least annually and we test for impairment between annual tests if an event occurs or circumstances change that would indicate that the carrying amount may be impaired. Goodwill is evaluated for impairment by comparing the carrying value of the cash-generating unit to which the goodwill has been allocated to its recoverable amount. Recoverable amount is defined as the higher of a cash-generating unit's fair value less costs to sell or its "value in use," which is defined as the present value of the expected future cash flows generated by the assets. In conducting the future cash flow valuation, we make assumptions about future operating cash flows, the discount rate used to determine present value of future cash flows, and capital expenditures. Future operating cash flows assumptions include sales growth assumptions, which are based on our historical trends and industry trends, and gross margin and operating expense growth assumptions, which are based on the historical relationship of those measures compared to sales and certain cost cutting initiatives. An impairment charge is incurred to the extent the carrying value exceeds the recoverable amount. As of December 31, 2012, we had goodwill of NT\$10,306.8 million (US\$354.8 million) and NT\$10,181.1 million (US\$350.5 million) under ROC GAAP and U.S. GAAP, respectively. We did not recognize any impairment loss in 2012. Our conclusion could, however, change in the future if actual results differ from our estimates and judgments under different assumptions and conditions.

Valuation of Long-term Investments. We hold long-term investments in public and non-public entities. We evaluate these long-term investments periodically for impairment based on market prices, if available, the financial condition of the investee company, economic conditions in the industry, and our intent and ability to hold the investment for a long period of time. These assessments usually require a significant amount of judgment, as a significant decline in the market price may be a short-term drop and may not be the best indicator of impairment. Whenever triggering events or changes in circumstances indicate that an investment may be impaired and carrying value may not be recoverable, we measure the impairment based on the market prices, if available, or the projected future cash flow of the investments, the underlying assumptions for which had been formulated by such investments internal management team, taking into account sales growth and capacity utilization. Under U.S. GAAP, we evaluate long-term investments using the above-mentioned criteria and, to the extent any decline in the value of a long-term investment is determined to be other than temporary, an impairment charge is recorded in the current period. Under ROC GAAP, we use similar method to determine the impairment charge recorded in the current period but there is no such term called "other-than-temporary-impairment" under ROC GAAP. Several of the long-term investments held by us are recognized as the equity method investments, financial assets carried at cost or available-for-sale financial assets. Any significant decline in the investments or financial assets could affect the value of the long-term investment and an impairment charge may occur. In 2010, 2011 and 2012, we recognized impairment losses of NT\$44.4 million, NT\$93.4 million and NT\$23.7 million (US\$0.8 million), respectively, on our investments. See note 6, 11 and 12 to our consolidated financial statements included in this annual report.

Stock-based Compensation. Employee stock options granted on or after January 1, 2008 are accounted for under ROC SFAS No. 39, "Accounting for Share-based Payment." Under the statement, the value of the stock options granted, which is equal to the best available estimate of the number of stock options expected to vest multiplied by the grant-date fair value, is expensed on a straight-line basis over the vesting period. The estimate is revised if subsequent information indicates that the number of stock options expected to vest differs from previous estimates. The grant-date fair value involves a number of factors, such as expected dividend yield, expected volatility, expected life and the effects of early exercise, which require the management's judgments. Employee stock options granted on or before December 31, 2007 were accounted for under the interpretations issued by the ROC Accounting Research and Development Foundation. We adopted the intrinsic value method, under which compensation cost was recognized on a straight-line basis over the vesting period.

Under U.S. GAAP, stock-based compensation expense includes compensation expense for all unvested stock-based compensation awards granted prior to January 1, 2006 that are expected to vest, based on the grant-date fair value estimated in accordance with the transition method and the original provision of the U.S. guidance relating to accounting for stock-based compensation. Stock-based compensation expense for all stock-based compensation

awards granted after January 1, 2006 is based on the grant-date fair value estimated in accordance with the provisions of the U.S. guidance relating to share-based payment.

## Results of Operations

The following table sets forth, for the periods indicated, financial data from our consolidated statements of income, expressed as a percentage of net revenues.

	Year Ended December 31,					
	2010		2011		2012	
	(percentage of net revenues)					
ROC GAAP:						
Net revenues	100.0	%	100.0	%	100.0	%
Packaging	53.5		55.4		53.8	
Testing	11.6		11.8		11.7	
Electronic manufacturing services	31.6		31.2		32.3	
Others	3.3		1.6		2.2	
Cost of revenues	(78.5	)	(81.1	)	(81.1	)
Gross profit	21.5		18.9		18.9	
Operating expenses	(8.7	)	(9.8	)	(9.7	)
Income from operations	12.8		9.1		9.2	
Non-operating income (expense), net	(0.7	)	0.1		(0.6	)
Income before income tax	12.1		9.2		8.6	
Income tax expense	(1.9	)	(1.6	)	(1.6	)
Net income	10.2	%	7.6	%	7.0	%
Attributable to						
Net income of parent company's shareholders	9.7	%	7.4	%	6.8	%
Minority interest in net income of subsidiaries	0.5		0.2		0.2	
	10.2	%	7.6	%	7.0	%

The following table sets forth, for the periods indicated, the gross margins for our packaging, testing services and electronic manufacturing services and our total gross margin. Gross margin is calculated by dividing gross profits by net revenues.

	Year Ended December 31,					
	2010		2011		2012	
	(percentage of net revenues)					
ROC GAAP:						
Gross profit						
Packaging	21.1	%	19.7	%	19.0	%
Testing	37.6	%	31.8	%	33.6	%
Electronic manufacturing services	10.9	%	11.0	%	11.6	%
Overall	21.5	%	18.9	%	18.9	%

The following table sets forth, for the periods indicated, a breakdown of our total cost of revenues and operating expenses, expressed as a percentage of net revenues.

	Year Ended December 31,		
	2010	2011	2012
	(percentage of net revenues)		
ROC GAAP:			
Cost of revenues			

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Raw materials	46.9	%	46.8	%	45.3	%
Labor	10.8		12.1		12.8	
Depreciation, amortization and rental expense	9.9		11.6		11.4	
Others	10.9		10.6		11.6	
Total cost of revenues	78.5	%	81.1	%	81.1	%

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	Year Ended December 31,					
	2010		2011		2012	
	(percentage of net revenues)					
Operating expenses						
Selling	1.5	%	1.5	%	1.4	%
General and administrative	3.9		4.5		4.2	
Research and development	3.3		3.8		4.1	
Total operating expenses	8.7	%	9.8	%	9.7	%

## Year Ended December 31, 2012 Compared to Year Ended December 31, 2011

**Net Revenues.** Net revenues increased 4.7% to NT\$193,972.4 million (US\$6,677.2 million) in 2012 from NT\$185,347.2 million in 2011, primarily due to an increase in revenues from our EMS businesses. Packaging revenues increased 1.6% to NT\$104,298.3 million (US\$3,590.3 million) in 2012 from NT\$102,677.3 million in 2011. Testing revenues increased 3.3% to NT\$22,657.0 million (US\$779.9 million) in 2012 from NT\$21,932.2 million in 2011. Revenues from our electronic manufacturing services business increased 8.5% to NT\$62,747.7 million (US\$2,160.0 million) in 2012 from NT\$57,850.4 million in 2011. The increase in packaging revenues was primarily due to an increase of advanced products in our packaging product mix with higher selling price. The increase in testing revenues was primarily due to an increase of our advanced testing services with higher selling price. The increase in the revenues from our electronic manufacturing services business was primarily due to an increase in the outsourced orders of wireless products from ODM.

**Gross Profit.** Gross profit increased 4.6% to NT\$36,623.8 million (US\$1,260.7 million) in 2012 from NT\$35,008.8 million in 2011. Our gross profit as a percentage of net revenues, or gross margin, was 18.9% in 2012, which was the same as 2011. Raw material costs in 2012 were NT\$87,800.3 million (US\$3,022.4 million) compared to NT\$86,782.8 million in 2011. As a percentage of net revenues, raw material costs decreased to 45.3% in 2012 from 46.8% in 2011 primarily due to the increase in revenues from packaging with copper wire. Depreciation, amortization and rental expenses were NT\$22,075.8 million (US\$759.9 million) in 2012 compared to NT\$21,536.5 million in 2011. As a percentage of net revenues, depreciation, amortization and rental expenses decreased to 11.4% in 2012 from 11.6% in 2011 due to an increase in our revenues. Labor cost in 2012 was NT\$24,855.1 million (US\$855.6 million) compared to NT\$22,380.0 million in 2011 primarily due to salary raises. As a percentage of net revenues, labor cost increased to 12.8% in 2012 from 12.1% in 2011. Our gross margin for packaging decreased to 19.0% in 2012 from 19.7% in 2011 due to increases in labor cost, depreciation and utility expenses as a percentage of net packaging revenues and offset by a decrease in raw materials as a percentage of net packaging revenues. Our gross margin for testing increased to 33.6% in 2012 from 31.8% in 2011 primarily due to a decrease in depreciation as a percentage of net testing revenues and partially offset by an increase in labor cost as a percentage of net testing revenues. Our gross margin for electronic manufacturing services increased to 11.6% in 2012 from 11.0% in 2011 primarily due to a decrease in raw materials as a percentage in revenues from electronic manufacturing services.

**Operating Income.** Operating income increased 5.6% to NT\$17,761.4 million (US\$611.4 million) in 2012 compared to NT\$16,821.2 million in 2011. Our operating income as a percentage of net revenues, or operating margin, increased to 9.2% in 2012 from 9.1% in 2011. Operating expenses increased 3.7% to NT\$18,862.4 million (US\$649.3 million) in 2012 compared to NT\$18,187.6 million in 2011. The increase in operating expenses was primarily due to an increase of expense in research and development. General and administrative expense decreased 0.9% to NT\$8,225.4 million (US\$283.2 million) in 2012 from NT\$8,299.5 million in 2011, primarily due to decreases in professional fees and stamp taxes associated to the asset transfers in 2011, and partially offset by increases in labor costs and maintenance on Enterprise Resource Planning software. General and administrative expense as a percentage of our net revenues was 4.2% in 2012 compared to 4.5% in 2011. Research and development expense increased 10.6% to NT\$7,874.2 million (US\$271.0 million), accounting for 4.1% of net revenues in 2012, compared to NT\$7,118.0

million, accounting for 3.8% of net revenues in 2011. This increase in the research and development expense was primarily due to increases in labor cost. Selling expense decreased 0.3% to NT\$2,762.8 million (US\$95.1 million) in 2012 from NT\$2,770.1 million in 2011. This decrease was primarily

due to decreases in amortization on intangible assets, exportation costs and freight and offset by an increase in labor cost. Selling expense as a percentage of net revenues was 1.4% in 2012 compared to 1.5% in 2011.

**Non-Operating Income (Expense).** We had a net non-operating expense of NT\$1,170.9 million (US\$40.3 million) in 2012 compared to a net non-operating income of NT\$175.9 million in 2011. This overall decrease was primarily due to (i) decreases in dividend income of NT\$555.4 million (US\$19.1 million) from our financial assets carried at cost, (ii) decreases in income from the change of the net gain/loss on valuation of financial assets and liabilities and net foreign exchange gain from NT\$904.3 million in 2011 to NT\$247.7 million (US\$8.5 million) in 2012 resulting from an increase of valuation loss on the derivative contracts which we utilized from time to time to reduce the impacts of foreign currency fluctuations on our results of operations and (iii) increases in net interest expense from NT\$1,335.6 million in 2011 to NT\$1,682.1 million (US\$57.9 million) in 2012 resulting from increases of our RMB loans with higher interest rate and partially offset by a decrease in impairment loss from NT\$448.1 million in 2011 to NT\$97.2 million (US\$3.3 million) in 2012.

**Net Income.** Net income, excluding minority interest, decreased 4.6% to NT\$13,091.4 million (US\$450.7 million) in 2012 compared to NT\$13,726.0 million in 2011. Our diluted earnings per ADS decreased to NT\$8.6 (US\$0.3) in 2012 compared to diluted earnings per ADS of NT\$8.9 in 2011. Our income tax expense increased 0.8% to NT\$3,041.6 million (US\$104.7 million) in 2012 compared to NT\$3,018.2 million in 2011, primarily due to the decrease in tax credit and increase in valuation allowance resulting from the amendment of the tax rate of Alternative Minimum Tax from 10% to 12%.

#### Year Ended December 31, 2011 Compared to Year Ended December 31, 2010

**Net Revenues.** Net revenues decreased 1.8% to NT\$185,347.2 million in 2011 from NT\$188,742.8 million in 2010, primarily due to the decline in revenues from our other businesses, including real estate business which decreased due to the cyclical nature of this business. Packaging revenues increased 1.6% to NT\$102,677.3 million in 2011 from NT\$101,071.3 million in 2010. Testing revenues decreased 0.1% to NT\$21,932.2 million in 2011 from NT\$21,957.0 million in 2010. Revenues from our electronic manufacturing services business decreased 2.9% to NT\$57,850.4 million in 2011 from NT\$59,577.4 million in 2010. The increase in packaging revenues was primarily due to an increase in the demand for our services and an increase in the revenues generated from our copper wire bonding solutions. The decrease in testing revenues was primarily due to a decrease in volume of testing business. The decrease in the revenues from our electronic manufacturing services business was primarily due to our retreat from the manufacturing of computer motherboard as a result of our business strategy adjustment.

**Gross Profit.** Gross profit decreased 13.7% to NT\$35,008.8 million in 2011 from NT\$40,544.6 million in 2010. Our gross profit as a percentage of net revenues, or gross margin, decreased to 18.9% in 2011 from 21.5% in 2010 primarily due to increases in depreciation expenses and labor cost as a percentage of our net revenues. Raw material costs in 2011 were NT\$86,782.8 million compared to NT\$88,556.1 million in 2010. As a percentage of net revenues, raw material costs were 46.8% in 2011 which decreased slightly compared to 2010. Depreciation, amortization and rental expenses in 2011 were NT\$21,536.5 million, compared to NT\$18,584.3 million in 2010. As a percentage of net revenues, depreciation, amortization and rental expenses increased to 11.6% in 2011 from 9.9% in 2010. This increase was primarily due to acquisition of new equipment in 2010, in particular equipment we bought in the second and third quarters of 2010. Labor cost in 2011 was NT\$22,380.0 million compared to NT\$20,394.6 million in 2010. As a percentage of net revenues, labor cost increased to 12.1% in 2011 from 10.8% in 2010, primarily due to an increase in salaries and bonuses from the increase in headcount. Our gross margin for packaging decreased to 19.7% in 2011 from 21.1% in 2010. This decrease was primarily due to increases in depreciation expense and labor cost as a percentage of our net packaging revenues and was partially offset by the decrease in the raw material costs as a percentage of our net packaging revenues. Our gross margin for testing decreased to 31.8% in 2011 from 37.6% in 2010. This decrease was primarily due to increases in depreciation expense and labor cost as a percentage of net testing revenues. Our gross

margin for electronic manufacturing services increased to 11.0% in 2011 from 10.9% in 2010.

Operating Income. Operating income decreased 30.2% to NT\$16,821.2 million in 2011 compared to NT\$24,099.0 million in 2010. Our operating income as a percentage of net revenues, or operating margin, decreased to 9.1% in 2011 from 12.8% in 2010, primarily due to a decrease in gross margin and partially due to an increase in operating expenses as a percentage of net revenues. Operating expenses increased 10.6% to NT\$18,187.6 million in

2011 compared to NT\$16,445.6 million in 2010. The increase in operating expenses was primarily due to increases in general and administrative expense, as well as research and development expense. General and administrative expense increased 12.6% to NT\$8,299.5 million in 2011 from NT\$7,373.7 million in 2010, primarily due to an increase in salaries and bonuses from the increase in headcount. General and administrative expense represented 4.5% of our net revenues in 2011 compared to 3.9% in 2010. Research and development expense increased 15.5% to NT\$7,118.0 million, accounting for 3.8% of net revenues in 2011, from NT\$6,162.2 million, accounting for 3.3% of net revenues in 2010. This increase in the research and development expense was primarily due to increases in salaries and bonuses from the increase in headcount. Selling expense decreased 4.8% to NT\$2,770.1 million in 2011 from NT\$2,909.6 million in 2010. This decrease was primarily due to a decrease in commission and service expenses. Selling expense as a percentage of net revenues was 1.5% in 2011, which was the same as in 2010.

Non-Operating Income (Expense). We had net non-operating income of NT\$175.9 million in 2011 compared to net non-operating expense of NT\$1,275.4 million in 2010. This overall increase was primarily due to (i) an increase of NT\$609.9 million in our dividend income primarily from financial assets carried at cost, (ii) an income increase from the changes of the net gain/loss on valuation of financial assets and liabilities and net foreign exchange gain/loss and (iii) an income increase from the changes of net gain/loss on disposal of property, plant and equipment, partially offset by (a) an increase of impairment loss and (b) an increase in our net interest expense. We recognized a net gain on valuation of financial assets and liabilities and net foreign exchange gain of NT\$904.3 million in 2011 compared to NT\$394.7 million in 2010. The increase was due to a decrease of valuation loss on the derivative contracts which we utilized from time to time to reduce the impacts of foreign currency fluctuations on our results of operations. We recognized impairment losses of NT\$448.1 million in 2011 compared to NT\$251.4 million in 2010, primarily due to an increase in impairment losses on the property, plant and equipment and available-for-sale financial assets in 2011. We recognized net interest expense of NT\$1,335.6 million in 2011 compared to NT\$1,170.8 million in 2010, primarily due to increases in interest rates.

Net Income. Net income, excluding minority interest, decreased 25.1% to NT\$13,726.0 million in 2011 from NT\$18,337.5 million in 2010. Our diluted earnings per ADS decreased to NT\$8.9 in 2011 compared to diluted earnings per ADS of NT\$12.0 in 2010. Our income tax expense decreased 16.8% to NT\$3,018.2 million in 2011 from NT\$3,628.7 million in 2010, primarily due to decreases in income before tax and valuation allowance, and an increase in credits for investments and research used, which were offset by an increase in income tax on undistributed earnings.

#### Quarterly Net Revenues, Gross Profit and Gross Margin

The following table sets forth our unaudited consolidated net revenues, gross profit and gross margin for the quarterly periods indicated. The unaudited quarterly results reflect all adjustments, consisting of normal recurring adjustments, that, in the opinion of management, are necessary for a fair presentation of the amounts, on a basis consistent with the audited consolidated financial statements included elsewhere in this annual report. You should read the following table in conjunction with the audited consolidated financial statements and related notes included elsewhere in this annual report. Our net revenues, gross profit and gross margin for any quarter are not necessarily indicative of the results for any future period. Our quarterly net revenues, gross profit and gross margin may fluctuate significantly.

	Quarter Ended							
	Mar. 31, 2011 NT\$	Jun. 30, 2011 NT\$	Sept. 30, 2011 NT\$	Dec. 31, 2011 NT\$	Mar. 31, 2012 NT\$	Jun. 30, 2012 NT\$	Sept. 30, 2012 NT\$	Dec. 31, 2012 NT\$
Consolidated Net Revenues								
Packaging	24,812.4	25,991.2	26,331.2	25,542.5	23,531.1	26,040.1	27,099.4	27,627.7

(in millions)

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Testing	5,338.9	5,492.3	5,498.0	5,603.0	5,077.3	5,632.9	5,911.2	6,035.6
Electronic manufacturing services	15,095.3	14,018.6	14,209.9	14,526.6	13,889.2	13,466.4	15,182.1	20,210.0
Others	758.9	752.2	658.7	717.5	603.0	733.0	798.7	2,134.7
Total	46,005.5	46,254.3	46,697.8	46,389.6	43,100.6	45,872.4	48,991.4	56,008.0

	Quarter Ended															
	Mar. 31, 2011 NT\$	Jun. 30, 2011 NT\$	Sept. 30, 2011 NT\$	Dec. 31, 2011 NT\$	Mar. 31, 2012 NT\$	Jun. 30, 2012 NT\$	Sept. 30, 2012 NT\$	Dec. 31, 2012 NT\$								
	(in millions)															
Consolidated																
Gross Profit																
Packaging	4,950.0	5,384.8	5,136.9	4,734.7	4,026.3	5,102.7	5,324.7	5,374.0								
Testing	1,644.0	1,660.8	1,787.5	1,886.3	1,495.7	1,827.0	1,999.6	2,282.2								
Electronic manufacturing services																
Electronic manufacturing services	1,575.4	1,443.4	1,623.2	1,708.4	1,559.0	1,662.4	1,949.1	2,112.6								
Others	488.3	475.8	364.4	144.9	106.7	265.6	331.1	1,205.1								
Total	8,657.7	8,964.8	8,912.0	8,474.3	7,187.7	8,857.7	9,604.5	10,973.9								
Consolidated																
Gross Profit (%)																
Packaging	19.9	%	20.7	%	19.5	%	18.5	%	17.1	%	19.6	%	19.6	%	19.5	%
Testing	30.8		30.2		32.5		33.7		29.5		32.4		33.8		37.8	
Electronic manufacturing services																
Electronic manufacturing services	10.4		10.3		11.4		11.8		11.2		12.3		12.8		10.5	
Overall	18.8	%	19.4	%	19.1	%	18.3	%	16.7	%	19.3	%	19.6	%	19.6	%

Our results of operations are affected by seasonality. In general, our first quarter net revenues have historically decreased over the preceding fourth quarter, primarily due to the combined effects of holidays in the United States, Taiwan and elsewhere in Asia. Moreover, the increase or decrease in net revenues of a particular quarter as compared with the immediately preceding quarter varies significantly. See “Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Our operating results are subject to significant fluctuations, which could adversely affect the market value of your investment.”

#### Exchange Rate Fluctuations

For quantitative and qualitative disclosure of our exposure to foreign currency exchange rate risk, see “Item 11. Quantitative and Qualitative Disclosures about Market Risk—Market Risk—Foreign Currency Exchange Rate Risk.”

#### Taxation

The corporate income tax rate in the ROC decreased from 25% to 17%, effective since January 1, 2010. The tax incentives schemes under the ROC Statute for Upgrading Industries expired on December 31, 2009, and under this statute we had been granted tax holidays covering the portion of our income attributable to eligible machinery and equipment which were procured with cash infusion from our shareholders or after the capitalization of retained earnings through the issuance of stock dividends, and tax credits of 7% for the purchase of qualifying manufacturing equipment. We can continue to enjoy the tax holidays that have been granted to us by the ROC tax authority. On April 16, 2010, the Legislative Yuan of ROC passed the Industrial Innovation Act, effective from January 1, 2010 to December 31, 2019. Under the Industrial Innovation Act, a profit-seeking enterprise may deduct up to 15% of its research and development expenditures from its income tax payable for the fiscal year in which these expenditures are incurred. However, the deduction may not exceed 30% of the income tax payable for that fiscal year. Under the Alternative Minimum Tax Act, or AMT Act, amended in August 2012, alternative minimum tax, or the AMT, would become the basis in assessing the current year income tax payable when income tax payable, pursuant to the ROC

Income Tax Act, is below the minimum amount provided under the AMT Act. The taxable income for calculating the AMT includes most sources of income that are exempted from income tax under various legislation such as tax holidays. According to the amended AMT Act, the standard deduction for taxable income decreased from NT\$1,000,000 to NT\$500,000 and the tax rate increased from 10% to 12%. The amendment to the AMT Act will be effective on January 1, 2013.

As of February 28, 2013, we had several five-year tax holidays on income derived from a portion of our operations in Kaohsiung, Taiwan, which will expire through December 31, 2013 to December 31, 2018. Besides, we are in the process of applying for the use of another tax exemption in connection with our operations in Kaohsiung, Taiwan, following application on the tax exemption period. In addition, some of our subsidiaries, such as ASE Test Taiwan, ASE Electronics and Yang Ting, are entitled to certain tax exemptions on income derived from a portion of their respective operations. The aggregate tax benefits of such exemptions for the years ended December 31, 2010, 2011 and 2012 were NT\$979.0 million, NT\$656.6 million and NT\$312.6 million (US\$10.8 million), respectively.



In addition, since we have facilities located in special export zones such as the Nantze Export Processing Zone in Taiwan, we enjoy exemptions from various import duties, commodity taxes and sales taxes on imported machinery, equipment, raw materials and components which are directly used for manufacturing finished goods. Finished goods produced by companies located in these zones and exported or sold to others within the zones are exempt from otherwise applicable commodity or business taxes in Taiwan.

Under the ROC Income Tax Act, all earnings generated in a year which are not distributed to shareholders as dividends in the following year will be assessed a 10% undistributed earnings tax. As a result, if we do not distribute all of our annual earnings as either cash or stock dividends in the following year, these undistributed earnings will be subject to the 10% undistributed earnings tax.

In 2011, our effective income tax rate increased to 18% from 16% in 2010 primarily due to an increase in undistributed earnings tax. In 2012, our effective income tax rate remains 18%. We believe that our future estimated taxable income will be sufficient to utilize the current and noncurrent portion of our net deferred tax assets recorded as of December 31, 2012.

#### Inflation

We do not believe that inflation in Taiwan or elsewhere has had a material impact on our results of operations.

#### U.S. GAAP Reconciliation

Our consolidated financial statements are prepared in accordance with ROC GAAP, which differ in certain material respects from U.S. GAAP. The following table sets forth a comparison of our net income and shareholders' equity in accordance with ROC GAAP and U.S. GAAP as of and for the periods indicated.

	As of and For the Year Ended December 31,			
	2010 NT\$	2011 NT\$	2012 NT\$	US\$
	(in millions)			
Net income:				
ROC GAAP	19,194.9	13,978.9	13,548.9	466.4
U.S. GAAP	18,901.0	13,780.4	12,927.3	445.0
Total shareholders' equity:				
ROC GAAP	91,839.3	102,282.5	112,459.1	3,871.2
U.S. GAAP	86,452.2	96,617.9	106,444.2	3,664.2

Note 32 to our consolidated financial statements included in this annual report provides a description of the significant differences between ROC GAAP and U.S. GAAP as they relate to us and a reconciliation of net income and shareholders' equity. Significant differences between ROC GAAP and U.S. GAAP include impairment loss reversal, undistributed earnings tax, stock-based compensation, business combination, defined benefit pension plans and noncontrolling interest treatment.

#### Recent U.S. GAAP Accounting Pronouncements

In May 2011, the FASB issued an accounting update to amend the fair value measurement guidance and include some enhanced disclosure requirements. The most significant change in disclosures is an expansion of the information required for Level 3 measurements based on unobservable inputs. The standard was effective to us from the fiscal year ended December 31, 2012. We have included these new disclosures, as applicable, in Note 33j to our consolidated

financial statements included in this annual report.

In June and December 2011, the FASB issued accounting updates to eliminate the current option to report other comprehensive income and its components in the statement of stockholders' equity. Instead, an entity will be required to present items of net income and other comprehensive income in one continuous statement or in two separate, but consecutive, statements. The new requirements do not change which components of comprehensive income are recognized in net income or other comprehensive income, or when an item of other comprehensive

income must be reclassified to net income. The standard was effective to us from the fiscal year ended December 31, 2012. We have reported other comprehensive income and its components in two separate but consecutive statements and the adoption of the standard did not have an impact on our results of operations, financial position or cash flows.

In September 2011, the FASB issued an accounting update, which is intended to reduce the cost and complexity of the annual goodwill impairment test by providing entities an option to perform a “qualitative” assessment to determine whether further impairment testing is necessary. Specifically, an entity has the option to first assess qualitative factors to determine whether it is necessary to perform the current two-step test. If an entity believes, as a result of its qualitative assessment, that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, the quantitative impairment test is required. Otherwise, no further testing is required. This standard was effective to us from the fiscal year ended December 31, 2012. The adoption of this guidance did not have a material impact on our results of operations, financial position or cash flows.

In December 2011, the FASB issued an accounting update, which creates new disclosure requirements regarding the nature of an entity’s rights of setoff and related arrangements associated with its financial instruments and derivative instruments. Certain disclosures of the amounts of certain instruments subject to enforceable master netting arrangements or similar agreements would be required, irrespective of whether the entity has elected to offset those instruments in the statement of financial position. The disclosure requirements are effective for annual reporting periods beginning on or after January 1, 2013 with retrospective application required. We have not yet determined the impact on the adoption of this pronouncement.

In July 2012, the FASB issued an accounting update to simplify how entities test indefinite-lived intangible assets for impairment which improve consistency in impairment testing requirements among long-lived asset categories. The update permits an assessment of qualitative factors to determine whether it is more likely than not that the fair value of an indefinite-lived intangible asset is less than its carrying value. For assets in which this assessment concludes it is more likely than not that the fair value is more than its carrying value, these amended standards eliminate the requirement to perform quantitative impairment testing as outlined in the previously issued standards. The standard is effective for fiscal years beginning after December 15, 2012 and early adoption is permitted. We have not yet determined the impact on the adoption of this pronouncement.

In February 2013, the FASB issued an accounting update requiring entities to present information about significant items reclassified out of accumulated other comprehensive income or loss by component either on the face of the statement where net income is presented or as a separate disclosure in the notes to the financial statements. This standard is effective to us for the fiscal year ending December 31, 2013. We have not yet determined the impact on the adoption of this pronouncement.

## LIQUIDITY AND CAPITAL RESOURCES

We have historically been able to satisfy our working capital needs from our cash flow from operations. We have historically funded our capacity expansion from internally generated cash and, to the extent necessary, the issuance of equity securities and borrowings. If adequate funds are not available on satisfactory terms, we may be forced to curtail our expansion plans. Moreover, our ability to meet our working capital needs from cash flow from operations will be affected by the demand for our packaging, testing services and electronics manufacturing services, which in turn may be affected by several factors. Many of these factors are outside of our control, such as economic downturns and declines in the prices of our services or products caused by a downturn in the industry. See “Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Our operating results are subject to significant fluctuations, which could adversely affect the market value of your investment.” To the extent we do not generate sufficient cash flow from our operations to meet our cash requirements, we will have to rely on external financing.

Net cash provided by operating activities amounted to NT\$29,017.9 million (US\$998.9 million) in 2012, primarily as a result of (i) our operation performance with net income of NT\$13,548.9 million (US\$466.4 million) and (ii) our non-cash depreciation and amortization in the amount of NT\$23,414.3 million (US\$806.0 million). Net cash provided by operating activities amounted to NT\$31,936.7 million in 2011, primarily as a result of (i) our operation performance with net income of NT\$13,978.9 million and (ii) our non-cash depreciation and amortization in the amount of NT\$22,945.4 million. Net cash provided by operating activities amounted to NT\$36,965.1 million

in 2010, primarily as a result of (i) our improved operation performance with net income of NT\$19,194.9 million and (ii) our non-cash depreciation and amortization in the amount of NT\$19,854.5 million. The decrease in net cash provided by operating activities in 2012 compared to 2011 was primarily due to cash outflows from the increases in accounts receivable and financial assets for trading, but offset by the cash inflows from the sale of inventory related to construction business and the increase in accounts payable. The decrease in net cash provided by operating activities in 2011 compared to 2010 was primarily due to the decrease in net income.

Net cash used in investing activities amounted to NT\$40,094.0 million (US\$1,380.2 million) in 2012, primarily due to our acquisition of property, plant and equipment of NT\$39,301.3 million (US\$1,352.9 million). Net cash used in investing activities amounted to NT\$32,030.7 million in 2011, primarily due to our acquisition of property, plant and equipment of NT\$29,417.9 million. Net cash used in investing activities amounted to NT\$36,085.5 million in 2010, primarily due to the acquisition of property, plant and equipment of NT\$34,109.1 million.

Net cash provided by financing activities amounted to NT\$8,455.8 million (US\$291.1 million) in 2012. This amount reflected primarily our net proceeds from short-term borrowings and long-term bank loans of NT\$8,791.1 million (US\$302.6 million). Net cash used in financing activities in 2011 amounted to NT\$342.6 million in 2011. This amount reflected primarily cash dividends of NT\$3,858.3 million and the repurchase of treasury stock of NT\$2,772.6 million, which was partially offset by the net proceeds of NT\$5,747.3 million from bank loans, capital lease obligations and issuance of bonds. Net cash provided by financing activities in 2010 amounted to NT\$1,701.5 million. This amount reflected primarily our proceeds obtained from long-term bank loans in the amount of NT\$32,586.2 million, partially offset by (i) our repayment of bank loans, including short-term borrowings and capital lease, in the amount of NT\$28,506.5 million, (ii) our distributed cash dividends in the amount of NT\$1,940.7 million and (iii) our repurchase of treasury stock in the amount of NT\$1,185.2 million.

As of December 31, 2012, our primary source of liquidity was NT\$20,265.6 million (US\$697.6 million) of cash and NT\$4,170.4 million (US\$143.6 million) of financial assets—current. Our financial assets—current primarily consisted of dual currency deposits, structured time deposits and mutual funds. As of December 31, 2012, we had total unused credit lines of NT\$77,352.5 million (US\$2,662.7 million). As of December 31, 2012, we had working capital of NT\$13,338.9 million (US\$459.2 million).

As of December 31, 2012, we had total borrowings of NT\$84,690.4 million (US\$2,915.3 million), NT\$36,884.9 million (US\$1,269.7 million) of which were short-term borrowings and NT\$47,805.5 million (US\$1,645.6 million) of which were long-term borrowings. In 2012, the maximum amount of our short-term borrowings was NT\$43,691.3 million (US\$1,504.0 million) and the average amount of our short-term borrowings was NT\$34,528.7 million (US\$1,188.6 million). The fluctuation was primarily because our working capital balance fluctuated during 2012 from time to time. The annual interest rate for borrowings under our short-term bank loans ranged from 0.80% to 6.93% as of December 31, 2012. Our short-term loans are primarily revolving facilities with a term of one year, each of which may be extended on an annual basis with lender consent. Our long-term borrowings consist of bank loans, bonds payable and capital lease obligations. As of December 31, 2012, we had outstanding long-term borrowings, less current portion, of NT\$44,591.7 million (US\$1,535.0 million). As of December 31, 2012, the current portion of our long-term borrowings was NT\$3,213.8 million (US\$110.6 million). Our long-term borrowings typically carried variable annual interest rates which ranged between 0.90% to 10.6% as of December 31, 2012. For the maturity information and interest rates by currencies, see “Item 11—Quantitative and Qualitative Disclosures about Market Risk—Interest Rate Risk.”

We have pledged a portion of our assets, with a carrying value of NT\$884.2 million (US\$30.4 million) as of December 31, 2012, to secure our obligations under our short-term and long-term facilities.

In September 2011, Anstock Limited, our wholly owned subsidiary incorporated in the Cayman Islands with limited liability, issued RMB150.0 million 3.125% Guaranteed Bonds due September 22, 2014 (the “2014 Bonds”) and RMB500.0 million 4.250% Guaranteed Bonds due September 20, 2016 (the “2016 Bonds”) (the 2014 Bonds and the 2016 Bonds, collectively the “Bonds”). The Bonds are irrevocably and unconditionally guaranteed on an unsecured and unsubordinated basis by us. The 2014 Bonds bear interest from and including September 20, 2011 at the rate of 3.125% per annum. Interest on the 2014 Bonds is payable semi-annually in arrear on September 20 and March 20 of each year beginning on March 20, 2012. The 2014 Bonds will mature on September 22, 2014 unless previously redeemed or purchased and cancelled. The 2016 Bonds bear interest from and including September 20,

2011 at the rate of 4.250% per annum. Interest on the 2016 Bonds is payable semi-annually in arrear on September 20 and March 20 of each year beginning on March 20, 2012. The 2016 Bonds will mature on September 20, 2016 unless previously redeemed or purchased and cancelled. The net proceeds from the Bonds were advanced by Anstock Limited to ARESH AT in the form of an intercompany RMB loan for working capital and capital expenditure with maturity in September 2016.

In August 2011, we issued NT\$8.0 billion 1.45% secured corporate bonds with five year term (the “Corporate Bonds”), guaranteed by the Bank of Taiwan, Mega International Commercial Bank, Taiwan Cooperative Bank, First Bank and Hua Nan Bank. The Corporate Bonds bear an annual simple interest and payment by coupon rate from the issue date. The net proceeds from the Corporate Bonds were used to repay our previous debts.

In June 2009, we entered into a syndicated loan agreement with a banking syndicate led by Citibank, N.A., Taipei Branch for a NT\$12,000.0 million term loan facility for an operating revolving fund, which we have fully repaid in 2011, mainly to finance our acquisition of Universal Scientific.

Our long-term loans and facilities contain various financial and other covenants that could trigger a requirement for early payment. Among other things, these covenants require the maintenance of certain financial ratios, such as liquidity ratio, indebtedness ratio, interest coverage ratio and other technical requirements. In general, covenants in the agreements governing our existing debt, and debt we may incur in the future, may materially restrict our operations, including our ability to incur debt, pay dividends, make certain investments and payments, other than in connection with restructurings of consolidated entities, and encumber or dispose of assets. A default under one debt instrument may also trigger cross-defaults under our other debt instruments. An event of default under any debt instrument, if not cured or waived, could have a material adverse effect on our liquidity, as well as our financial condition and operations.

We have on occasion failed to comply with certain financial covenants in some of our loan agreements. Such non-compliance may also have, through broadly worded cross-default provisions, resulted in default under some of the agreements governing our other existing debt. For example, we failed to comply with certain financial covenants in some of our loan agreements as a result of our acquisition of Universal Scientific in February 2010; however, we have timely obtained waivers from our counterparties. If we are unable to timely remedy any of our non-compliance under such loan agreements or obtain applicable waivers or amendments, we would breach our financial covenants and our financial condition would be adversely affected. See “Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Restrictive covenants and broad default provisions in our existing debt agreements may materially restrict our operations as well as adversely affect our liquidity, financial condition and results of operations.”

Our contingent obligations consist of guarantees provided by us to our subsidiaries. As of December 31, 2012, we endorsed and guaranteed the bonds issued by our subsidiary, Anstock Limited, in the amount of RMB744.3 million (US\$119.5 million). Other than such guarantee, we have no other contingent obligations.

We have made, and expect to continue to make, substantial capital expenditures in connection with the expansion of our production capacity. The table below sets forth our principal capital expenditures incurred for the periods indicated.

	Year Ended December 31,			
	2010	2011	2012	US\$
	NT\$	NT\$	NT\$	
	(in millions)			
Machinery and equipment	30,238.2	22,778.7	31,790.5	1,094.3
Building and improvements	4,522.9	8,253.3	7,102.6	244.5

We had commitments for capital expenditures of approximately US\$340 million, including expenditures on machinery and buildings, as of December 31, 2012, primarily in connection with the expansion of our packaging and testing operations. We may adjust our capital expenditures based on market conditions, the progress of our expansion plans and cash flow from operations. In addition, due to the rapid changes in technology in the semiconductor industry, we frequently need to invest in new machinery and equipment, which may require us to



raise additional capital. We cannot assure you that we will be able to raise additional capital should it become necessary on terms acceptable to us or at all. See “Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Because of the highly cyclical nature of our industry, our capital requirements are difficult to plan. If we cannot obtain additional capital when we need it, our growth prospects and future profitability may be adversely affected.”

We believe that our existing cash, marketable securities, expected cash flow from operations and existing credit lines under our loan facilities will be sufficient to meet our capital expenditures, working capital, cash obligations under our existing debt and lease arrangements, and other requirements for at least the next 12 months. We currently hold cash primarily in U.S. dollars, New Taiwan dollars, RMB, Japanese yen, Malaysian ringgit and Korean won. As of December 31, 2012, we had contractual obligations of NT\$42,807.7 million (US\$1,473.6 million) due in the next three years. We currently expect to meet our payment obligations through the expected cash flow from operations, long-term borrowings and the issuance of additional equity or equity-linked securities. We will continue to evaluate our capital structure and may decide from time to time to increase or decrease our financial leverage through equity offerings or borrowings. The issuance of additional equity or equity-linked securities may result in additional dilution to our shareholders.

From time to time, we evaluate possible investments, acquisitions or divestments and may, if a suitable opportunity arises, make an investment, acquisition or divestment.

Our treasury team, under the supervision of our chief financial officer, is responsible for setting our funding and treasury policies and objectives. Our exposure to financial market risks relates primarily to changes in interest rates and foreign currency exchange rates. To mitigate these risks, we utilize derivative financial instruments, the application of which is primarily to manage these exposures, and not for speculative purposes.

We have, from time to time, entered into interest rate swap transactions to hedge our interest rate exposure. As of December 31, 2012, we had NT\$2,537.5 million (US\$87.3 million) outstanding in interest rate swap contracts for NT dollar which matured in March 2013. In addition, we have, from time to time, entered into forward exchange contracts, swap contracts, cross currency swap contracts and European foreign currency options contracts to hedge our existing assets and liabilities denominated in foreign currencies. See “Item 11. Quantitative and Qualitative Disclosures about Market Risk” and note 5 and note 26 to our consolidated financial statements included in this annual report.

## RESEARCH AND DEVELOPMENT

For 2010, 2011 and 2012, our research and development expenditures totaled approximately NT\$6,162.2 million, NT\$7,118.0 million and NT\$7,874.2 million (US\$271.0 million), respectively. These expenditures represented approximately 3.3%, 3.8% and 4.1% of net revenues in 2010, 2011 and 2012, respectively. We have historically expensed all research and development costs as incurred and none is currently capitalized. As of February 28, 2013, we employed 6,215 employees in research and development.

### Packaging

We centralize our research and development efforts in packaging technology in our Kaohsiung, Taiwan facilities. After initial phases of development, we conduct pilot runs in one of our facilities before new technologies or processes are implemented commercially at other sites. Facilities with special product expertise, such as ASE Korea, also conduct research and development of these specialized products and technologies at their sites. One of the areas of emphasis for our research and development efforts is improving the efficiency and technology of our packaging processes and these efforts are expected to continue. We are also putting significant research and development efforts into the development and adoption of innovative technology. We work closely with manufacturers of our packaging

equipment and materials in designing and developing the equipment and materials used in our production process. We also collaborate with our significant customers to co-develop new product and process technologies.

In addition to investing in the development of advanced package assembly technology and improving production efficiency, a significant portion of our research and development efforts is focused on the development

of advanced substrate production technology for BGA packaging. Substrate is the principal raw material for BGA packages. Development and production of advanced substrates involve complex technology. We are currently working closely with certain first-tier substrate suppliers in Asia, primarily including those located in Japan, Taiwan and Korea. We believe that our successful cooperation with substrate suppliers to enhance the overall substrate production capability and to meet future advanced package requirement has enabled us to capture an increasingly important value-added component of the packaging process, helped ensure a stable and cost-effective supply of substrates for our BGA packaging operations and shortened time to market.

#### Testing

Our research and development efforts in the area of testing have focused primarily on developing advanced test solutions for customer requirement. These efforts include developing test software of logic/mixed-signal/RF/3D IC/discrete semiconductors, characterization of semiconductors, layout design, electrical simulation for high frequency test board and developing software of parametric test data analysis. We work closely with our customers on the leading edge test technologies, such as 3D IC test and advanced probe test technology such as very fine pitch probe card. Our research and development operations also include an equipment development group, which currently designs testing hardware and software for specific semiconductors to offer our customers cost effective test solutions.

#### Electronics Manufacturing Services

To further enhance the quality of our services and products, we focus on developing diversified and innovative products to improve our competitiveness. By leveraging our proprietary research and development expertise, we are able to provide our customers with high performance and cost-effective products and services by optimizing our product design, engineering and manufacturing capabilities. During the process of designing, as well as developing the technology for, our software and hardware, our research and development team also dedicates itself to discovering new know-how, and then applying such know-how to create new, advanced and improved products, processes, methodology and services. We are currently investing in the development of products used in electronic manufacturing services in relation to computers and peripherals, communications, industrial, automotive, and storage and server applications.

#### OFF-BALANCE SHEET ARRANGEMENTS

There are no off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that are material to investors.

#### TABULAR DISCLOSURE OF CONTRACTUAL OBLIGATIONS

The following table sets forth the maturity of our contractual obligations as of December 31, 2012.

	Total NT\$	Payments Due by Period			
		Under 1 Year NT\$	1 to 3 Years NT\$	3 to 5 Years NT\$	After 5 Years NT\$
(in millions)					
Contractual Obligations:					
Long-term debt(1)	48,001.2	8,724.4	28,772.1	10,465.8	38.9
Capital lease obligations(2)	50.7	46.7	4.0	-	-
Operating leases(3)	673.5	162.0	167.5	81.8	262.2

Purchase obligations(4)	4,931.0	4,931.0	-	-	-
Total(5)(6)(7)	53,656.4	13,864.1	28,943.6	10,547.6	301.1

(1) Includes bank loans and bonds payable but excludes interest payments.

(2) Represents our commitments under property leases less imputed interest. These obligations are recorded on our consolidated balance sheets.

- (3) Represents our commitments under leases for land, machinery and equipment such as testers, and office buildings and equipment. See note 29 to our consolidated financial statements included in this annual report.
- (4) Represents unpaid commitments for construction. These commitments were not recorded on our consolidated balance sheets as of December 31, 2012. See note 29 to our consolidated financial statements included in this annual report. Total commitments for construction of buildings were approximately NT\$6,069.0 million (US\$208.9 million), of which NT\$1,138.0 million (US\$39.2 million) had been paid as of December 31, 2012.
- (5) Excludes non-binding commitments to purchase machinery and equipment of approximately NT\$3,712.0 million (US\$127.8 million), of which NT\$140.6 million (US\$4.8 million) had been paid as of December 31, 2012. See note 29 to our consolidated financial statements included in this annual report.
- (6) Excludes our minimum pension funding requirements since such amounts have not been determined. Under defined benefit pension plans, we made pension contributions of approximately NT\$734.9 million (US\$25.3 million) in 2012, and we estimate that we will contribute approximately NT\$231.4 million (US\$8.0 million) in 2013. See note 20 to our consolidated financial statements included in this annual report.
- (7) Excludes uncertain tax liabilities. We recognized additional long term taxes payable of NT\$89.2 million (US\$3.1 million) and accrued interest and penalties of NT\$13.0 million (US\$0.4 million) related to uncertain tax positions as of or for the year ended December 31, 2012. Because we were unable to make a reasonable estimate of the timing of the tax audits, such balances were not included in the table.

#### Item 6. Directors, Senior Management and Employees

##### DIRECTORS AND SENIOR MANAGEMENT AND BOARD PRACTICES

###### Directors

Our board of directors is elected by our shareholders in a general meeting at which a quorum, consisting of a majority of all issued and outstanding common shares, is present. The chairman is elected by the board from among the directors. Our nine-member board of directors, including two independent directors, is responsible for the management of our business.

The term of office for our directors is three years from the date of election. The current board of directors began serving on June 22, 2012. The terms of the current directors will expire on June 21, 2015. Directors may serve any number of consecutive terms and may be removed from office at any time by a resolution adopted at a meeting of shareholders. Normally, all board members are elected at the same meeting of shareholders, except where the posts of one-third or more of the directors are vacant, at which time a special meeting of shareholders shall be convened to elect directors to fill the vacancies. We and our subsidiaries do not have service contracts with our directors that provide for benefits upon termination of employment.

Our board of directors established an audit committee on July 22, 2005 to satisfy the requirements of Rule 10A-3 under the Exchange Act. The audit committee is appointed by the board of directors and currently consists of Shen-Fu Yu and Ta-Lin Hsu, who are independent under Rule 10A-3 and financially literate with accounting or related financial management expertise. The audit committee has responsibility for, among other things, overseeing the qualifications, independence and performance of our independent auditors and the integrity of our financial statements.

Our board of directors established a compensation committee on September 29, 2011. The compensation committee consists of Shen-Fu Yu, our independent director, Ta-Lin Hsu, our independent director, and Hsiao-Ying Ku. The compensation committee has responsibility for, among other things, setting forth and reviewing policies, systems, standards and structures regarding performance evaluation and compensation of the directors, supervisors and executive officers, and evaluating compensation of the directors, supervisors and executive officers.

The following table sets forth information regarding all of our directors as of February 28, 2013.

Name	Position	Director Since	Age	Other Significant Positions Held Outside of the ASE Group
Jason C.S. Chang(1)(2)	Director, Chairman and Chief Executive Officer	1984	68	None
Richard H.P. Chang(1)	Director, Vice Chairman and President	1984	66	Chairman, Sino Horizon Holdings Ltd.
Tien Wu(2)	Director and Chief Operating Officer	2003	55	None
Joseph Tung(2)	Director and Chief Financial Officer	1997	54	Independent director, Ta Chong Bank Ltd.
Raymond Lo(3)	Director and General Manager, Kaohsiung packaging facility	2006	58	None
Jeffrey Chen(3)	Director and Executive Vice President	2003	49	None
Rutherford Chang(4)	Director	2009	33	None
Shen-Fu Yu	Independent Director	2009	68	Supervisor, Dynapack International Technology Corporation
Ta-Lin Hsu	Independent Director	2009	69	Chairman and founder, H&Q Asia Pacific

(1) Jason C.S. Chang and Richard H.P. Chang are brothers.

(2) Representative of ASE Enterprises, a company organized under the laws of Hong Kong, which held 17.45% of our outstanding common shares as of February 28, 2013. All of the outstanding shares of ASE Enterprises are held by a company organized under the laws of the British Virgin Islands in trust for the benefit of the family of our Chairman and Chief Executive Officer, Jason C.S. Chang, who is the sole shareholder and director of that company.

(3) Representatives of J&R Holding Limited, a company organized under the laws of Bermuda, which held 0.61% of our outstanding common shares as of February 28, 2013.

(4) Rutherford Chang is the son of Jason C.S. Chang

#### Supervisors

We currently have five supervisors, each serving a three-year term. The current supervisors began serving on June 22, 2012, and their terms will expire on June 21, 2015. The supervisors' duties and powers include investigation of our business condition, inspection of our corporate records, verification and review of financial statements to be presented by our board of directors at shareholders' meetings, convening of shareholders' meetings, representing us in negotiations with our directors and notification, when appropriate, to the board of directors to cease acting in contravention of any applicable law or regulation, our Articles of Incorporation or the resolutions of our shareholders' meeting. Each supervisor is elected by our shareholders and cannot concurrently serve as a director, managerial officer

or other staff member. The ROC Company Law requires at least one supervisor be appointed at all times, or two supervisors for a company with publicly issued equity shares, and that a supervisor's term of office be no more than three years.

The following table sets forth information regarding all of our supervisors as of February 28, 2013.

Name	Position	Supervisor Since	Age	Other Significant Positions Held Outside of the ASE Group
David Pan(1)	Supervisor	2012	67	None
Chun-Che Lee (1)	Supervisor	2012	53	None
Tien-Szu Chen(1)	Supervisor	2006	51	None
Yen-Yi Tseng(1)	Supervisor	2000	71	Chairman, Hung Ching
Jerry Chang(2)	Supervisor	2009	35	None

(1) Representative of Hung Ching.

(2) Jerry Chang is the son of Richard H.P. Chang.



In accordance with ROC law, each of our directors and supervisors is elected either in his or her capacity as an individual or as an individual representative of a corporation or government. Persons designated to represent corporate or government shareholders as directors are typically nominated by such shareholders at the annual general meeting and may be replaced as representatives by such shareholders at will. Of the current directors and supervisors, three represent ASE Enterprises, two represent J&R Holdings Limited and four represents Hung Ching. The remaining directors and supervisors serve in their capacity as individuals.

#### Executive Officers

The following table sets forth information regarding all of our executive officers as of February 28, 2013.

Name	Position	Years with the Company	Age
Jason C.S. Chang	Chairman and Chief Executive Officer	29	68
Richard H.P. Chang	Vice Chairman and President	29	66
Tien Wu	Chief Operating Officer; Chief Executive Officer, ISE Labs	13	55
Joseph Tung	Chief Financial Officer	18	54
Raymond Lo	President, ASE Test Taiwan; General Manager, Kaohsiung packaging facility	27	58
Chun-Che Lee	President, ASE Shanghai	29	53
Chiu-Ming Cheng	President, ASES AT	22	52
Ung Bae	President, ASE Korea	15	56
Chih-Hsiao Chung	President, ASE Japan	13	48
Kwai Mun Lee	President, ASE South-East Asia operations	15	50
Samuel Liu	Chief Executive Officer, Universal Scientific	9	64
Cheng-Jung Wei	President, Universal Scientific	26	49

#### Biographies of Directors, Supervisors and Executive Officers

Jason C.S. Chang has served as Chairman of ASE Inc. since its founding in March 1984 and as its Chief Executive Officer since May 2003. He holds a bachelor's degree in electrical engineering from National Taiwan University and a master's degree from the Illinois Institute of Technology. He is the brother of Richard H.P. Chang, our Vice Chairman and President.

Richard H.P. Chang has served as Vice Chairman of ASE Inc. since November 1999 after having served as President of ASE Inc. since its founding in March 1984, and served as Chief Executive Officer of ASE Inc. from July 2000 to April 2003. In February 2003, he was again appointed President of ASE Inc. upon the retirement of Mr. Leonard Y. Liu. He holds a bachelor's degree in industrial engineering from Chung Yuan Christian University of Taiwan. He is the brother of Jason C.S. Chang, our Chairman and Chief Executive Officer.

Tien Wu has served as a director of ASE Inc. since June 2003 and Chief Operating Officer since April 2006, prior to which he served as the President of Worldwide Marketing and Strategy of the ASE Group. Prior to joining ASE Inc. in March 2000, Mr. Wu held various managerial positions with IBM. He holds a bachelor's degree in computer engineering from National Taiwan University, a master's degree in mechanical engineering and a doctorate degree in applied mechanics from the University of Pennsylvania.



Joseph Tung has served as a director of ASE Inc. since April 1997 and Chief Financial Officer since December 1994. He is also an independent director of Ta Chong Bank Ltd. since October 2007. Before joining ASE Inc., Mr. Tung was a Vice President at Citibank, N.A. He received a bachelor's degree in economics from the National ChengChi University of Taiwan and a master's degree in business administration from the University of Southern California.

Raymond Lo has served as a director of ASE Inc. and General Manager of our packaging facility in Kaohsiung, Taiwan since April 2006. Mr. Lo also served as a supervisor of ASE Inc. between July 2000 and April 2006. Before joining ASE Group, Mr. Lo was the Director of Quality Assurance at Zeny Electronics Co. He holds a bachelor's degree in electronic physics from the National Chiao-Tung University of Taiwan.

Jeffrey Chen has served as a director of ASE Inc. since June 2003 and an Executive Vice President for Chairman Office. Prior to joining ASE Inc., he worked in the corporate banking department of Citibank, N.A. in Taipei and as a Vice President of corporate finance at Bankers Trust in Taipei. He holds a bachelor's degree in finance and economics from Simon Fraser University in Canada and a master's degree in business administration from the University of British Columbia in Canada.

Rutherford Chang has served as a director of ASE Inc. since June 2009 and General Manager of China Region of ASE Group since June 2010. He received a bachelor's degree in psychology from Wesleyan University in Connecticut. He is the son of Jason C.S. Chang, our Chairman and Chief Executive Officer.

Shen-Fu Yu has served as an independent director of ASE Inc. since June 2009. He is also a supervisor of Dynapack International Technology Corporation. He worked in Deloitte & Touche Accounting Firm as a consultant from June 2003 to November 2006. He received a bachelor's degree in Accounting in National Taiwan University and a master's degree in Accounting from National ChengChi University.

Ta-Lin Hsu has served as an independent director of ASE Inc. since June 2009. He is currently the chairman and founder of H&Q Asia Pacific. He received a bachelor's degree in physics from National Taiwan University, a master's degree in electrophysics from the Polytechnic Institute of Brooklyn and a doctorate degree in Electrical Engineering from the University of California at Berkeley.

David Pan has served as a supervisor of ASE Inc. since June 2012. Mr. Pan has served as the Chief of Staff and Chief Information Officer of ASE Group since 2007. He was the General Manager at ASE Malaysia in 1994 and President of ASE Test Limited from 1995 to 2003. Prior to joining ASE Group, he was the Vice President of Operations and Engineering at Ultratech Stepper in Santa Clara, CA, U.S.A. Mr. Pan holds a MS degree in Engineering Physics from University of Illinois, Urbana, IL and a Ph.D. in Physics from University of California, Berkeley.

Chun-Che Lee has served as a supervisor of ASE Inc. since June 2012. He has also served as President of ASE Shanghai since July 2005. Mr. Lee holds a bachelor's degree in aeronautic from Tamkung University of Taiwan. Mr. Lee has also served as a President of R&D of ASE Group, prior to which he was a vice president, director and manager of research and development at ASE Inc. since 1984.

Tien-Szu Chen has served as a supervisor of ASE Inc. since June 2006. Mr. Chen holds a bachelor's degree in industrial engineering from Chung Yuan Christian University in Taiwan.

Yen-Yi Tseng has served as a supervisor of ASE Inc. since July 2000 and Chairman of Hung Ching since July 2002. Mr. Tseng served as President of Ret-Ser Engineering Agency from 1991 to 1998. He holds a bachelor's degree in civil engineering from National Taiwan University and a master's degree in system engineering from Asian Institute of Technology in Thailand. He was also a participant in the Program for Management Development at Harvard Business School.

Jerry Chang has served as a supervisor of ASE Inc. since June 2009. Prior to joining ASE Inc., he was an analyst at Morgan Stanley Asia. He received a bachelor's degree in political economy from Williams College in Massachusetts. He is the son of Richard H.P. Chang, our Vice Chairman and President.

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Chiu-Ming Cheng has served as President of ARESH AT since September 2012, after serving as a Vice President of ASE's Kaohsiung packaging facility since October 2004. Mr. Cheng holds a master's degree in Public Policy from National Sun Yat-Sen University.

Ung Bae has served as President of ASE Korea since July 2008, after serving as Senior Vice President of ASE Korea since July 1999. Mr. Bae was Vice President of Motorola Korea, Limited before joining ASE Korea when we acquired Motorola Korea, Limited. He holds a degree in electronic engineering from the In-Ha university of Korea.

Chih-Hsiao Chung has served as President of ASE Japan since March 2011. Mr. Chung has also managed the sales and marketing of ASE Japan region since April 2007. Before joining ASE Group, Mr. Chung was the Senior Manager of Sale and Marketing at Kimberly Clark Co., Taiwan. He holds a master's degree in business administration from the University of Wisconsin-Madison.

Kwai Mun Lee has served as President of our Southeast Asia operations, with responsibility for the operations of our Penang, Malaysia and Singapore manufacturing facilities, since March 2006. Before joining the ASE Group, Mr. Lee held senior management positions at Chartered Semiconductor and STATSChipPAC. He started his career as an engineer at Intel. He holds a degree in engineering from the Swinburne Institute of Technology in Australia.

Samuel Liu has served as the Chief Executive Officer for Universal Scientific since October 2006. Mr. Liu has worked in the electronics industry for over 30 years in various technical and management roles. He holds a bachelor's degree in electrical engineering from National Taiwan University and a doctorate degree in material science from Stanford University.

Cheng-Jung Wei has served as a director of Universal Scientific since May 2008, the President of Universal Scientific since April 2008 and the vice president of Mobility Solution Business Unit of Universal Scientific since September 2004. He joined Universal Scientific as an engineer in July 1987. He holds a bachelor's degree in electrical engineering from Chinese Culture University and a master's degree in business administration from Tunghai University.

The business address of our directors, supervisors and executive officers is our registered office.

## COMPENSATION

In 2012, we paid to our directors, supervisors and executive officers approximately NT\$532.2 million (US\$18.3 million) in cash remuneration. We did not pay any remuneration in kind to our directors, supervisors or executive officers in 2012. In 2012, we accrued pension costs of NT\$34.6 million (US\$1.2 million) for retirement benefits for our management. The remuneration of our independent directors is set at NT\$2.0 million per person per year. In addition, according to our Articles of Incorporation, not more than 2% of our annual net earnings (after recovering any losses incurred in prior years and deducting the legal reserve and special reserve provisions, if any) may be distributed as bonuses to our directors. 7% to 10% of our annual net earnings (after recovering any losses incurred in prior years and deducting the legal reserve and special reserve provisions, if any) may be distributed as a bonus to employees, including executive officers.

We have not provided any loans to or guarantees for the benefit of any of our directors, supervisors or executive officers. For information regarding our pension and other retirement plans and those of our subsidiaries, see note 20 to our consolidated financial statements included in this annual report.

## ASE Inc. Employee Bonus and Stock Option Plans

We award bonuses to employees of ASE Inc. and its subsidiaries who are located in Taiwan based on overall income and individual performance targets. Prior to 2009, these employees were eligible to receive bonuses in the form of our common shares valued at par. Beginning in 2009, employees are eligible to receive bonuses in the form of our common shares valued at the closing price (after adjustment with consideration of the effects on the share price, if any, brought by cash and stock dividends resolved at shareholders' meetings) of the common shares on the day prior to our shareholders' meeting. Actual amounts of bonuses to individual employees are determined based upon the employee meeting specified individual performance objectives. We granted aggregate values of NT\$607.0 million, NT\$1,523.1 million and NT\$1,235.3 million (US\$42.5 million) as cash bonus to our employees in 2010,

2011 and 2012, respectively. In 2013, our directors proposed a distribution of NT\$1,147.2 million (US\$39.5 million) in cash bonuses to our employees.

We currently maintain four option plans, adopted in 2002, 2004, 2007 and 2010. Pursuant to these plans, our full-time employees, including domestic and foreign subsidiaries, are eligible to receive stock option grants. Each option entitles the holder to purchase one ASE Inc. common share at a price equal to (for the 2002, 2004 and 2007 plans), or not less than (for the 2010 plan), the closing market price on the date of the option issuance, such exercise price being subject to retroactive adjustment in the event of certain capital transactions in subsequent periods. Each option is exercisable upon vesting for five years. Forty percent of the options originally granted vest upon the second anniversary of the grant date, and an additional 10% of the options originally granted vest every six months thereafter. Each option expires at the end of the tenth year following its grant date. The options are generally not transferable. As of December 31, 2012, a total of 159,968,000 options had been granted under the 2002 plan, 145,989,000 of which had expired with an original exercise price of NT\$20.80 per share (finally adjusted to NT\$5.5 per share) and 13,979,000 of which had an original exercise price of NT\$24.6 per share (currently adjusted to NT\$8.4 per share). As of December 31, 2012, a total of 139,917,000 options had been granted under the 2004 plan, 124,917,000 of which had an original exercise price of NT\$26.60 per share (currently adjusted to NT\$13.5 per share) and 15,000,000 of which had an original exercise price of NT\$20.55 per share (currently adjusted to NT\$11.1 per share). As of December 31, 2012, a total of 185,806,000 options had been granted under the 2007 plan. The original exercise price under the 2007 plan was NT\$30.65 per share (currently adjusted to NT\$21.1 per share). As of December 31, 2012, a total of 199,999,500 options had been granted under the 2010 plan, 187,719,500 of which had an original exercise price of NT\$28.6 per share (currently adjusted to NT\$20.4 per share) and 12,280,000 of which had an original exercise price of NT\$28.75 per share (currently adjusted to NT\$22.6 per share).

#### ASE Mauritius Inc. Share Option Plan

As of December 31, 2012, ASE Mauritius Inc. maintained one option plan adopted in 2007. Under this plan, certain employees of ASE Mauritius Inc. and the ASE Group are granted options to purchase ordinary shares of ASE Mauritius Inc. at an exercise price of US\$1.70, which exercise price was determined by taking into account a fairness opinion rendered by an independent appraiser and was reviewed by our accountants. Each option is exercisable upon vesting for five years and expires after ten years. As of December 31, 2012, a total of 30,000,000 options had been granted under this plan with an exercise price of US\$1.70.

#### USI Enterprise Limited Share Option Plans

USI Enterprise Limited, USI's subsidiary, maintains three option plans adopted in 2007, 2010 and 2011, under which certain employees of Universal Scientific and our employees were granted options to purchase common shares of USI Enterprise Limited. Each option under these three plans is exercisable upon vesting for five years and will expire after ten years. As of December 31, 2012, we had 17,484,500 options outstanding with an exercise price of US\$1.53 per share, 8,761,000 options outstanding with an exercise price of US\$2.42 per share and 8,720,000 options outstanding with an exercise price of US\$2.94 per share under these three plans respectively.

#### EMPLOYEES

The following table sets forth, for the periods indicated, certain information concerning our employees for the dates indicated.

	As of December 31,		
	2010	2011	2012
Total	48,901	51,411	57,259

Function			
Direct labor	28,715	28,598	32,196
Indirect labor (manufacturing)	11,301	12,771	14,158
Indirect labor (administration)	3,867	4,553	4,760
Research and development	5,018	5,489	6,145
Location			
Taiwan	22,381	24,687	27,763



	As of December 31,		
	2010	2011	2012
PRC	19,394	19,692	21,627
Korea	2,492	2,665	2,985
Malaysia	2,178	2,180	2,384
Japan	677	667	787
Singapore	848	822	1,023
United States	335	344	356
Others	596	354	334

The increase in our employee count in 2012 was primarily due to our business expansion.

Eligible employees may participate in our employee share bonus plan and stock option plans and our subsidiaries' share option plans, such as the option plans adopted by ASE Mauritius and USI Enterprise Limited. See “—Compensation.”

We have never experienced a work stoppage caused by our employees. We believe that our relationship with our employees is good.

#### SHARE OWNERSHIP

The following table sets forth certain information with respect to our common shares and options exercisable for our common shares held by our directors, supervisors and executive officers as of February 28, 2013.

Director, Supervisor or Executive Officer	Number of ASE Inc. Common Shares Held	Percentage of Total ASE Inc. Common Shares Issued and Outstanding	Number of Options Held(1)	Exercise Price of Options (NT\$)	Expiration Date of Options
Jason C.S. Chang	80,915,931	1.06%	18,300,000	13.50~21.10	6/30/2014-5/6/2020
Richard H. P. Chang	102,994,941	1.35%	10,250,000	13.50~21.10	6/30/2014-5/6/2020
Tien Wu	3,633,386	0.05%	*	20.40~21.10	12/19/2017-5/6/2020
Joseph Tung	3,831,908	0.05%	*	13.50~21.10	6/30/2014-5/6/2020
Raymond Lo	2,565,643	0.03%	*	20.40~21.10	12/19/2017-5/6/2020
Jeffrey Chen	2,313,802	0.03%	*	20.40~21.10	12/19/2017-5/6/2020
Rutherford Chang	1,659,708	0.02%	*	20.40~21.10	12/19/2017-5/6/2020
Shen-Fu Yu	0	0.00%	-	-	-
Ta-Lin Hsu	0	0.00%	-	-	-
David Pan	1,018,229	0.01%	*	20.40~21.10	12/19/2017-5/6/2020
Chun-Che Lee	2,444,502	0.03%	*	8.40~21.10	8/22/2013-5/6/2020
Tien-Szu Chen	772,054	0.01%	*	13.50~21.10	6/30/2014-5/6/2020
Yen-Yi Tseng	201,894	0.00%	*	20.40~21.10	12/19/2017-5/6/2020
Jerry Chang	529,860	0.01%	*	13.50~21.10	6/30/2014-5/6/2020
Chiu-Ming Cheng	290,000	0.00%	*	11.10~21.10	5/23/2015~5/6/2020
Ung Bae	90,000	0.00%	*	13.50~21.10	6/30/2014-5/6/2020
Chih-Hsiao Chung	62,230	0.00%	*	20.40~21.10	12/19/2017-5/6/2020
Kwai Mun Lee	0	0.00%	*	8.40~21.10	8/22/2013-5/6/2020
Samuel Liu	0	0.00%	*	20.4	5/6/2020
Cheng-Jung Wei	59,523	0.00%	-	-	-

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- (1) Each option covers one of our common shares.
- (2) In addition to holding 1.06% of our common shares directly, Jason C.S. Chang is the sole shareholder and director of a company that holds all the outstanding shares of ASE Enterprises, which holds 17.45% of our common shares. See “Item 7. Major Shareholders and Related Party Transactions—Major Shareholders.”
- \*The sum of the number of common shares held and the number of common shares issuable upon exercise of all options held is less than 1% of our total outstanding common shares.

## Item 7. Major Shareholders and Related Party Transactions

## MAJOR SHAREHOLDERS

The following table sets forth information known to us with respect to the beneficial ownership of our common shares, as of February 28, 2013, by each shareholder known by us to beneficially own more than 5% of our outstanding common shares and all directors, supervisors and executive officers as a group.

Name of Shareholder or Group	Common Shares Beneficially Owned		
	Number	Percentage	
ASE Enterprises(1)	1,327,202,773	17.45	%
Directors, supervisors and executive officers as a group(2)	1,658,572,461	21.81	%

(1) ASE Enterprises is a company organized under the laws of Hong Kong. All of the outstanding shares of ASE Enterprises are held by a company organized under the laws of the British Virgin Islands in trust for the benefit of the family of our Chairman and Chief Executive Officer, Jason C.S. Chang, who is the sole shareholder and director of that company.

(2) Includes shareholding of ASE Enterprises, J&R Holding Limited and Hung Ching.

The following table sets forth information relating to our common shares held directly by our consolidated subsidiaries and our equity method investee as of February 28, 2013.

Name of Shareholder	Common Shares Beneficially Owned		
	Number	Percentage	
ASE Test(1)	88,200,472	1.16	%
ASE Test Taiwan(2)	10,978,776	0.14	%
J&R Holding Limited(3)	46,703,763	0.61	%
Hung Ching(4)	85,588,293	1.13	%

(1) ASE Test is our wholly-owned subsidiary. ASE Test's ownership of our common shares is the result of the merger of ASE Chung Li with and into us in August 2004 and subsequent dividends upon shares received in connection with this merger.

(2) ASE Test Taiwan was our wholly-owned subsidiary as of February 28, 2013.

(3) J&R Holding Limited is our wholly-owned subsidiary. J&R Holding Limited's ownership of our common shares is the result of the merger of ASE Chung Li with and into us in August 2004 and subsequent dividends upon shares received in connection with this merger.

(4) As of February 28, 2013, we held 26.22% of the outstanding shares of Hung Ching.

In connection with the merger of ASE Chung Li and ASE Material with and into ASE Inc. in August 2004, ASE Test and ASE Test Taiwan established a trust to hold and dispose of 149,175,000 and 5,000,000 of our common shares that were issued to them respectively, upon completion of the merger. As a result, the trustee appointed under the trust agreement has become one of our shareholders until such common shares are sold. As of February 28, 2013, the total amount of our common shares held by the trust was 97,800,691. See "—Related Party Transactions."

As of February 28, 2013, none of our major shareholders had voting rights different from those of our other shareholders. There were no significant changes in our major shareholders or significant changes in the percentage ownership of any of our major shareholders in 2010, 2011 and 2012.

As of February 28, 2013, a total of 7,605,046,566 common shares were outstanding. With certain limited exceptions, holders of common shares that are not ROC persons are required to hold their common shares through a brokerage account in the ROC. As of February 28, 2013, 521,379,005 common shares were registered in the name of a nominee of Citibank, N.A., the depository under our ADS deposit agreement. Citibank, N.A., has advised us that, as of February 28, 2013, 104,275,531 ADSs, representing 521,377,655 common shares, were held of record by

Cede & Co., and 269 ADSs, representing 1,345 common shares, were held by eight other U.S. persons. The remaining 5 common shares held by Citibank, N.A. are a result of fractional shares distributed during stock distributions on the common shares underlying the ADSs. We have no further information as to common shares held, or beneficially owned, by U.S. persons.

#### RELATED PARTY TRANSACTIONS

In recent years, we have awarded our cash bonuses to the employees of our subsidiaries as part of their compensation, based in part on our consolidated net income and the subsidiaries' contribution to the consolidated income. We expect this practice to continue in the future.

In order to comply with Singapore law and ROC Company Law, trusts organized under ROC law have been established to hold and dispose of our common shares issued to ASE Test and ASE Test Taiwan in connection with the merger of ASE Chung Li and ASE Material into our company in August 2004. Under Section 76(1)(b)(ii) of the Companies Act, Chapter 50, of Singapore, ASE Test, a Singapore company, may not purport to acquire, directly or indirectly, shares or units of shares in our company, ASE Test's parent company. Pursuant to the applicable trust agreements, the trustee under each trust is (1) the registered owner of the common shares, (2) authorized to exercise all of the rights as a shareholder of the common shares, (3) authorized to sell the common shares, subject to market conditions, when such common shares become available for resale under ROC law and in accordance with volume limitations under ROC law, at its sole discretion; provided such common shares are sold (i) in compliance with ROC laws and regulations, (ii) in an orderly manner in order to minimize the impact on the trading price of the common shares, and (iii) in a manner consistent with its fiduciary duties owed to ASE Test and (4) able to transfer and deliver to ASE Test or ASE Test Taiwan the proceeds from the sale of our common shares and any cash dividends distributed, as the case may be. In February 2010, to complete the tender offer to acquire Universal Scientific, ASE Test transferred 141,808,499 shares to the shareholders of Universal Scientific. Neither ASE Test nor ASE Test Taiwan have any rights with respect to the common shares held in trust pursuant to the applicable trust agreements other than the right to receive the proceeds from the sale of such common shares and cash dividends declared while the shares remain in trust. As of February 28, 2013, these trusts held 88,200,472 of our common shares issued to ASE Test and 9,600,219 of our common shares issued to ASE Test Taiwan.

We have historically provided the promissory notes as guarantees to some of our subsidiaries. As of December 31, 2012, we endorsed and guaranteed the bonds issued by our subsidiary, Anstock Limited, in the amount of RMB744.3 million (US\$119.5 million). Other than such guarantee, we have no other contingent obligations.

In 2011, Universal Scientific entered into contracts to transfer equipments, lands and buildings to its subsidiary UGTW for a total consideration of NT\$883.8 million.

In October 2011, we entered into a contract to dispose of the K9 factory-administration building in Nantze Export Processing Zone, Taiwan, to ASE Electronics, our wholly owned subsidiary, for a consideration of NT\$780.0 million.

On November 17, 2011, ASESH AT acquired 10% equity of Shanghai Ding Hui Real Estate Development Co., Ltd., or Ding Hui, from Kunshan Ding Yao Real Estate Development Co., Ltd., or Ding Yao, of which the chairman of the board of directors is also our president, for a consideration of RMB 221.5 million.

In May 2012, we and ASE Test Taiwan acquired the K12 factory administration building in Nontze Export Processing Zone, Taiwan, from Hung Ching for a consideration of NT1,429.7 million (US\$49.2 million).

#### INTERESTS OF EXPERTS AND COUNSEL

Not applicable.

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Item 8. Financial Information

CONSOLIDATED STATEMENTS AND OTHER FINANCIAL INFORMATION

Consolidated financial statements are set forth under “Item 18. Financial Statements.”

LEGAL PROCEEDINGS

On February 1, 2006, Tessera, Inc., or Tessera, filed an amended complaint in the United States District Court for the Northern District of California adding Advanced Semiconductor Engineering, Inc. and ASE (U.S.) Inc., collectively referred to as ASE, and other companies to a suit alleging that ASE’s and the 13 other defendants’ manufacturing, use, importation, offer for sale, and sale of various packaged semiconductor products infringed five patents owned by Tessera relating to certain types of semiconductor chip packaging, and/or breached technology license agreements regarding certain types of semiconductor chip packages between Tessera and certain defendants, including ASE. Tessera sought, among other things, monetary damages and injunctive relief in the lawsuit. On March 27, 2006, ASE filed its answer and counterclaims with the court.

On May 15, 2007, at Tessera’s request, the United States International Trade Commission, or the ITC, instituted an investigation, or ITC Investigation No. 605, of certain of ASE’s co-defendants and other companies, including certain of ASE’s customers, but not ASE and the other contract chip packagers that were included as defendants in the California case. On May 20, 2009, the ITC issued its final determination in ITC Investigation No. 605, finding infringement of both asserted patents by the ITC Investigation No. 605 respondents’ accused semiconductor packages. The ITC also issued (1) a limited exclusion order prohibiting the unlicensed entry of semiconductor packages found to infringe, and products incorporating such chips, manufactured abroad by or on behalf of, or imported by or on behalf of, Spansion, Qualcomm, ATI, Motorola, ST-NV, and Freescale; and (2) cease and desist orders directed to Motorola, Qualcomm, Freescale, and Spansion. The ITC did not grant a general exclusion order as requested by Tessera. The exclusion and cease and desist orders expired on September 24, 2010, when the asserted patents expired. The ITC’s determination was affirmed by the Court of Appeals for the Federal Circuit on December 21, 2010. The United States Supreme Court denied a petition for writ of certiorari on November 28, 2011.

On April 21, 2008, Tessera filed an ITC complaint against ASE and the other contract chip packagers that were included as defendants in the California case, and on May 21, 2008, the ITC instituted a new investigation against them, or ITC Investigation No. 649, which involved three patents also asserted in the original California case, as well as one newly-asserted patent. On August 4, 2008, ASE, Inc., ASE (U.S.) Inc. and ASE Test Limited filed an action in the United States District Court for the Northern District of California against Tessera, Inc. seeking a declaratory judgment of non-infringement and invalidity of the patent newly asserted by Tessera in the ITC. On December 19, 2008, the court stayed the declaratory judgment action in response to a joint motion of the parties. On August 7, 2009, the ITC terminated Investigation No. 649 in response to Tessera’s motion to terminate, without the issuance of an exclusion order or any other remedy.

On January 4, 2012, the court held a case management conference where the stay was lifted in both California district court cases -- the original 2006 case, and the 2008 declaratory judgment case. The 2008 declaratory judgment action was voluntarily dismissed shortly after the stay was lifted, and discovery is ongoing in the original 2006 case, where the Court has scheduled trial for April 2014. Since the stay was lifted in the original 2006 case, Tessera has narrowed its infringement accusations by dropping two of the five originally-asserted patents. Moreover, ASE further narrowed the scope of the case by successfully moving for summary judgment against certain aspect of Tessera’s breach of license claim.

The United States Patent and Trademark Office, or PTO, also instituted reexamination proceedings on all six Tessera patents at issue in the two California cases and the ITC proceedings. Since the dismissal of the 2008 case and the narrowing of Tessera's claims in the 2006 case, one reexamination proceeding remains ongoing with respect to one of the three remaining asserted patents .

It is not possible to predict the outcome of the remaining California litigation, the reexamination proceedings, or the total costs of resolving these disputes.



## DIVIDENDS AND DIVIDEND POLICY

We have historically paid dividends on our common shares with respect to the results of the preceding year following approval by our shareholders at the annual general meeting of shareholders. We have paid annual dividends on our common shares since 1989, except in 2002 and 2006 when we did not pay any dividend due to the losses we incurred in the 2001 and 2005 fiscal years, respectively. On April 8, 2013, our board of directors adopted resolutions to pay cash dividends of NT\$1.05 per share based on the 7,607,594,106 shares registered as of March 28, 2013. This proposal is awaiting shareholders' approval and the actual cash dividends per share will be adjusted by any fluctuations in the number of our shares due to, for example, the exercise of share options.

The following table sets forth the stock dividends paid during each of the years indicated and related information.

	Cash Dividends Per Common Share NT\$	Stock Dividends Per Common Share(1) NT\$	Total Common Shares Issued as Stock Dividends	Outstanding Common Shares on Record Date(2)	Percentage of Outstanding Common Shares Represented by Stock Dividends	
2005	0.10	1.00	411,221,140	4,113,744,200	10.0	%
2006	—	—	—	4,592,508,620	—	
2007	1.48	1.48	694,101,071	4,645,295,431	14.9	%
2008	1.71	0.29	158,766,146	5,484,848,118	2.9	%
2009	0.50	—	—	5,474,320,814	—	
2010	0.36	1.00	549,497,078	5,500,216,994	10.0	%
2011	0.65	1.15	695,735,660	6,055,261,112	11.5	%
2012	0.65	1.40	931,599,554	6,659,893,672	14.0	%

(1) Stock dividends were paid out from retained earnings and capital surplus. Holders of common shares receive as a stock dividend the number of common shares equal to the NT dollar value per common share of the dividend declared multiplied by the number of common shares owned and divided by the par value of NT\$10 per share. Fractional shares are not issued but are paid in cash.

(2) Aggregate number of common shares outstanding on the record date applicable to the dividend payment. Includes common shares issued in the previous year under our employee bonus plan.

In order to meet the needs of our present and future capital expenditures, we anticipate paying both stock and cash dividends in the future. The form, frequency and amount of future cash or stock dividends on our common shares will depend upon our net income, cash flow, financial condition, shareholders' requirement for cash inflow and other factors. According to our Articles of Incorporation, we have a general policy that cash dividend distribution should not be lower than 30% of the total dividend amount and the remainder be distributed as stock dividends. See "Item 10. Additional information—Articles of Incorporation—Dividends and Distributions."

In general, we are not permitted to distribute dividends or make other distributions to shareholders for any year where we did not record net income or retained earnings (excluding reserves). The ROC Company Law also requires that 10% of annual net income (less outstanding taxes and prior years' losses, if any) be set aside as a legal reserve until the accumulated legal reserve equals our paid-in capital. In addition, our Articles of Incorporation require that before a

dividend is paid pro rata out of our annual net income:

- up to 2% of our annual net income (less prior years' losses and legal and special reserves, if any) should be paid to our directors and supervisors as compensation; and
- between 7% and 10% of the annual net income (less prior years' losses and legal and special reserves, if any) should be paid to our employees as bonuses; the 7% portion is to be distributed to all employees in accordance with our employee bonus distribution rules, while any portion exceeding 7% is to be distributed in accordance with rules established by our board of directors to individual employees who have been recognized as having made special contributions to our company. Such employees include those of our subsidiaries.

Holders of ADSs will be entitled to receive dividends, subject to the terms of the deposit agreement, to the same extent as the holders of the common shares. Cash dividends will be paid to the depositary in NT dollars and, except as otherwise provided in the deposit agreement, will be converted by the depositary into U.S. dollars and paid to holders of ADSs according to the terms of the deposit agreement. Stock dividends will be distributed to the depositary and, except as otherwise provided in the deposit agreement, will be distributed by the depositary, in the form of additional ADSs, to holders of ADSs according to the terms of the deposit agreement.

Holders of outstanding common shares on a dividend record date will be entitled to the full dividend declared without regard to any prior or subsequent transfer of common shares. Holders of outstanding ADSs are entitled to receive dividends, subject to the terms of the deposit agreement, to the same extent as the holders of outstanding common shares.

For information relating to ROC withholding taxes payable on dividends, see “Item 10. Additional Information—Taxation—ROC Taxation—Dividends.”

## SIGNIFICANT CHANGES

Other than as disclosed elsewhere in this annual report, we have not experienced any significant changes since the date of the annual financial statements.

## Item 9. The Offer and Listing

### OFFER AND LISTING DETAILS

Our common shares were first issued in March 1984 and have been listed on the Taiwan Stock Exchange since July 1989. The Taiwan Stock Exchange is an auction market where the securities traded are priced according to supply and demand through announced bid and ask prices. As of February 28, 2013, there were an aggregate of 7,605,046,566 of our common shares outstanding. The following table sets forth, for the periods indicated, the high and low closing prices and the average daily volume of trading activity on the Taiwan Stock Exchange for the common shares and the high and low of the daily closing values of the Taiwan Stock Exchange Index. The closing price for our common shares on the Taiwan Stock Exchange on April 12, 2013 was NT\$24.30 per share.

	Closing Price per Share		Adjusted Closing Price per Share(1)		Average Daily Trading Volume (in thousands of shares)	Taiwan Stock Exchange Index	
	High NT\$	Low NT\$	High NT\$	Low NT\$		High	Low
2008	34.25	9.85	22.50	6.39	24,392	9,295.2	4,089.9
2009	29.10	10.75	21.52	7.07	33,646	8,188.1	4,242.6
2010	35.50	21.95	26.85	16.19	32,137	8,972.5	7,071.7
2011	37.60	24.00	28.50	20.48	32,247	9,145.4	6,633.3
First Quarter	37.60	30.25	28.50	22.72	38,948	9,145.4	8,234.8
Second Quarter	36.20	28.75	27.41	21.54	26,475	9,062.4	8,478.9
Third Quarter	32.70	24.00	25.22	20.48	36,799	8,824.4	6,877.1
Fourth Quarter	28.50	24.70	24.43	21.10	27,156	7,622.0	6,633.3
2012	31.10	20.15	26.71	18.73	24,667	8,144.0	6,894.7

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First Quarter	31.10	25.50	26.71	21.80	31,048	8,144.0	6,952.2
Second Quarter	30.35	24.10	26.06	20.57	21,701	7,862.9	6,894.7
Third Quarter	26.00	22.00	23.40	18.73	25,832	7,781.9	6,970.7
Fourth Quarter	25.20	20.15	25.20	20.15	20,702	7,757.1	7,088.5
October	22.80	20.15	22.80	20.15	20,745	7,718.7	7,091.7
November	24.35	21.65	24.35	21.65	23,084	7,580.2	7,088.5
December	25.20	23.90	25.20	23.90	18,162	7,757.1	7,519.9
2013							
First Quarter	26.80	23.60	26.80	23.60	21,873	8,038.7	7,616.6
January	26.80	23.90	26.80	23.90	23,862	7,850.0	7,616.6
February	25.15	23.60	25.15	23.60	24,265	8,029.1	7,856.0
March	25.65	24.00	25.65	24.00	18,308	8,038.7	7,796.2
Second Quarter							
April (through April 12)	25.00	24.05	25.00	24.05	13,727	7,942.4	7,728.5

(1) As adjusted retroactively by the Taiwan Stock Exchange to give effect to stock dividends and cash dividends paid in the periods indicated. See "Item 8. Financial Information—Dividends and Dividend Policy."

The performance of the Taiwan Stock Exchange has in recent years been characterized by extreme price volatility. There are currently limits on the range of daily price movements on the Taiwan Stock Exchange. In the case of equity securities traded on the Taiwan Stock Exchange, such as our common shares, fluctuations in the price of a particular security may not exceed a 7% change either above or below the previous day's closing price of such security.

Our ADSs have been listed on the New York Stock Exchange under the symbol "ASX" since September 26, 2000. The outstanding ADSs are identified by the CUSIP number 00756M404. As of February 28, 2013, a total of 104,275,531 ADSs were outstanding. The following table sets forth, for the periods indicated, the high and low closing prices and the average daily volume of trading activity on the New York Stock Exchange for our ADSs and the highest and lowest of the daily closing values of the New York Stock Exchange Index. The closing price for our ADSs on the New York Stock Exchange on April 12, 2013 was US\$4.04 per ADS.

	Closing Price per ADS		Adjusted Closing Price per ADS(1)		Average Daily Trading Volume (in thousands of ADSs)	New York Stock Exchange Index	
	High US\$	Low US\$	High US\$	Low US\$		High	Low
2008	5.57	1.42	4.68	1.31	622	9,656.00	4,651.21
2009	4.63	1.49	4.39	1.38	1,188	7,261.24	4,226.31
2010	5.82	3.39	5.58	3.25	867	7,964.02	6,434.81
2011	6.55	4.04	6.28	3.95	1,346	8,671.41	6,571.45
First Quarter	6.55	5.22	6.28	5.01	1,454	8,507.90	7,929.87
Second Quarter	6.29	5.04	6.03	4.83	1,270	8,671.41	7,963.60
Third Quarter	5.75	4.04	5.51	3.95	1,543	8,476.13	6,726.62
Fourth Quarter	4.77	4.05	4.66	3.96	1,116	7,813.99	6,571.45
2012	5.27	3.54	5.15	3.54	1,065	8,516.43	7,285.53
First Quarter	5.27	4.37	5.15	4.27	1,404	8,297.47	7,557.68
Second Quarter	5.16	3.96	5.04	3.87	1,190	8,281.12	7,285.53
Third Quarter	4.26	3.63	4.17	3.55	918	8,458.87	7,590.61
Fourth Quarter	4.28	3.54	4.28	3.54	750	8,516.43	7,896.88
October	3.90	3.54	3.90	3.54	876	8,446.51	8,179.26
November	4.13	3.71	4.13	3.71	828	8,312.35	7,896.88
December	4.28	4.09	4.28	4.09	538	8,516.43	8,223.54
2013							
First Quarter	4.63	3.92	4.63	3.92	766	9,127.96	8,604.38
January	4.63	3.99	4.63	3.99	743	8,935.64	8,604.38
February	4.14	3.92	4.14	3.92	764	9,004.39	8,719.40
March	4.30	3.94	4.30	3.94	791	9,127.96	8,874.19
Second Quarter							
April (through April 12)	4.09	3.92	4.09	3.92	531	9,324.02	8,893.39

(1) As adjusted retroactively to give effect to stock dividends paid in the periods indicated.

#### PLAN OF DISTRIBUTION

Not applicable.

## MARKETS

The principal trading market for our common shares is the Taiwan Stock Exchange and the principal trading market for ADSs representing our common shares is the New York Stock Exchange.

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## SELLING SHAREHOLDERS

Not applicable.

## DILUTION

Not applicable.

## EXPENSES OF THE ISSUE

Not applicable.

## Item 10. Additional Information

### SHARE CAPITAL

Not applicable.

### ARTICLES OF INCORPORATION

#### General

We are a company limited by shares organized under the laws of the ROC. Our organizational document is our Articles of Incorporation. We have no by-laws.

Our Articles of Incorporation provide, in Article 2, that we may engage in the following types of business:

- the manufacture, assembly, processing, testing and export of various types of integrated circuitry;
- the research, development, design and manufacture, assembly, processing, testing and export of various computers, electronics, communications, information products and their peripheral products;
  - general import and export trading (excluding businesses that require trading permits);
    - the manufacture of electronic parts and components;
- the manufacture of mechanical and electronic devices and materials (including integrated circuit leadframes, BGA substrates and flip-chip substrates);
  - wholesale and retail sales of electronic materials;
- technical support and consulting service for integrated circuit leadframes, BGA substrates and flip-chip substrates;
  - leasing; and
- except any business requiring a special permit, any business not prohibited or restricted by law or regulation.

We were incorporated on March 23, 1984 as a company limited by shares under the ROC Company Law. Our authorized capital was NT\$95 billion, divided into 9,500 million common shares, 7,605,046,566 of which were

outstanding as of February 28, 2013. We do not have any equity in the form of preference shares or otherwise outstanding as of the date of this annual report.

With the approval of our board of directors and the ROC Financial Supervisory Commission, we may grant stock options to our employees, provided that NT\$8,000 million of our authorized capital (800 million common shares) is reserved for employee stock options and that the shares to be issued under any option plan shall not exceed 10% of our outstanding common shares and the total number of shares to be issued under all option plans shall not exceed 15% of our outstanding common shares. The exercise price of an option shall not be less than the



closing price of our common shares on the Taiwan Stock Exchange on the grant date of the option. As of March 31, 2013, we had granted 685,690,500 options pursuant to employee stock option plans established on August 28, 2002, May 27, 2004, November 22, 2007 and April 20, 2010 to our full-time employees, including our domestic and foreign subsidiaries. See “Item 6. Directors, Senior Management and Employees—Compensation—ASE Inc. Employee Bonus and Stock Option Plans.”

## Directors

Our Articles of Incorporation provide that we are to have from seven to nine directors with tenures of three years who are elected at a shareholders’ meeting. In addition, two of our directors will be required to be independent directors. There is no minimum amount of shares necessary to stand for election to a directorship. Many of our directors are representatives appointed by corporate shareholders which appoint individual representatives. Re-elections are allowed. The directors have certain powers and duties, including devising operations strategy, proposing to distribute dividends or make up losses, proposing to increase or decrease capital, reviewing material internal rules and contracts, hiring and discharging the general manager, establishing and dissolving branch offices, reviewing budgets and financial statements and other duties and powers granted by or in accordance with the ROC Company Law, our Articles of Incorporation or shareholders resolutions.

The board of directors is constituted by the directors, who elect a chairman from among the directors to preside over the meeting of the board. Meetings of the board may be held in the ROC or by videoconference. A director may appoint another director to attend a meeting and vote by proxy, but a director may accept only one proxy.

## Dividends and Distributions

In general, we are not permitted to distribute dividends or make other distributions to shareholders in any year in which we did not record net income or retained earnings (excluding reserves). The ROC Company Law also requires that 10% of annual net income (less prior years’ losses, if any) be set aside as a legal reserve until the accumulated legal reserve equals our paid-in capital. In addition, our Articles of Incorporation require that before a dividend is paid out of our annual net income:

- up to 2% of our annual net income (less prior years’ losses and legal and special reserves, if any) should be paid to our directors and supervisors as compensation; and
- between 7% and 10% of the annual net income (less prior years’ losses and legal and special reserves, if any) should be paid to our employees as bonuses. The 7% portion is to be distributed to all employees in accordance with our employee bonus distribution rules, while any portion exceeding 7% is to be distributed in accordance with rules established by our board of directors to individual employees who have been recognized as having made special contributions to our company. Such employees include those of our subsidiaries.

At the annual general meeting of shareholders, our board of directors submits to the shareholders for their approval any proposal for the distribution of dividends or the making of any other distribution to shareholders from our net income for the preceding fiscal year. All common shares outstanding and fully paid as of the relevant record date are entitled to share equally in any dividend or other distribution so approved. Dividends may be distributed in cash, in the form of common shares or a combination of the two, as determined by the shareholders at the meeting. According to our Articles of Incorporation, we have a general policy that cash dividend distribution should not be lower than 30% of the total dividend amount and the remainder be distributed as stock dividends. See “Item 8. Financial Information—Dividends and Dividend Policy.”

We are also permitted to make distributions to our shareholders in cash or in the form of common shares from reserves if we have no accumulated loss. However, the distribution payable out of our legal reserve can only come from the amount exceeding 25% of the total paid-in capital.

For information on the dividends we paid in recent years, see “Item 8. Financial Information—Dividends and Dividend Policy.” For information as to ROC taxes on dividends and distributions, see “—Taxation—ROC Taxation—Dividends.”

## Changes in Share Capital

Under ROC Company Law, any change in the authorized share capital of a company limited by shares requires an amendment to its Articles of Incorporation. In the case of a public company such as ourselves, we must also obtain the approval of, or submit a report to, the ROC Financial Supervisory Commission and the Kaohsiung Export Processing Zone Administration. Authorized but unissued common shares may be issued, subject to applicable ROC law, upon terms as our board of directors may determine. Our authorized share capital was NT\$95 billion, divided into 9,500 million common shares with a face value of NT\$10 per share as of March 31, 2013.

## Preemptive Rights

Under the ROC Company Law, when an ROC company issues new shares for cash, existing shareholders who are listed on the shareholders' register as of the record date have preemptive rights to subscribe for the new issue in proportion to their existing shareholdings, while a company's employees, whether or not they are shareholders of the company, have rights to subscribe for 10% to 15% of the new issue. Any new shares that remain unsubscribed at the expiration of the subscription period may be freely offered, subject to compliance with applicable ROC law.

In addition, in accordance with the ROC Securities and Exchange Law, a public company that intends to offer new shares for cash must offer to the public at least 10% of the shares to be sold, except under certain circumstances or when exempted by the ROC Financial Supervisory Commission. This percentage can be increased by a resolution passed at a shareholders' meeting, which would diminish the number of new shares subject to the preemptive rights of existing shareholders.

These preemptive rights provisions do not apply to offerings of new shares through a private placement approved at a shareholders' meeting.

## Meetings of Shareholders

We are required to hold an annual general meeting of our shareholders within six months following the end of each fiscal year. These meetings are generally held in Kaohsiung, Taiwan. Any shareholder who holds 1% or more of our issued and outstanding shares may submit one written proposal for discussion at our annual general meeting. Extraordinary shareholders' meetings may be convened by resolution of the board of directors or by the board of directors upon the written request of any shareholder or shareholders who have held 3% or more of the outstanding common shares for a period of one year or longer. Shareholders' meetings may also be convened by a supervisor. Notice in writing of meetings of shareholders, stating the place, time and purpose, must be dispatched to each shareholder at least 30 days, in the case of annual general meetings, and 15 days, in the case of extraordinary meetings, before the date set for each meeting. A majority of the holders of all issued and outstanding common shares present at a shareholders' meeting constitutes a quorum for meetings of shareholders.

## Voting Rights

Under the ROC Company Law, except under limited circumstances, shareholders have one vote for each common share held. Under the ROC Company Law, our directors and supervisors are elected at a shareholders' meeting through cumulative voting.

In general, a resolution can be adopted by the holders of at least a majority of the common shares represented at a shareholders' meeting at which the holders of a majority of all issued and outstanding common shares are present. Under ROC Company Law, the approval by at least a majority of the common shares represented at a shareholders' meeting in which a quorum of at least two-thirds of all issued and outstanding common shares are represented is

required for major corporate actions, including:

- amendment to the Articles of Incorporation, including increase of authorized share capital and any changes of the rights of different classes of shares;
- execution, amendment or termination of any contract through which the company leases its entire business to others, or the company appoints others to operate its business or the company operates its business with others on a continuous basis;

- transfer of entire business or assets or a substantial part of its business or assets;
- acquisition of the entire business or assets of any other company, which would have a significant impact on the company's operations;
  - distribution of any stock dividend;
  - dissolution, merger or spin-off of the company; and
  - removal of the directors or supervisors.

A shareholder may be represented at an annual general or extraordinary meeting by proxy if a valid proxy form is delivered to us five days before the commencement of the annual general or extraordinary shareholders' meeting. Shareholders may exercise their voting rights by way of a written ballot or by way of electronic transmission if the voting decision is delivered to us two days before the commencement of the annual general or extraordinary shareholders' meeting.

Holders of ADSs do not have the right to exercise voting rights with respect to the underlying common shares, except as described in the deposit agreement.

#### Other Rights of Shareholders

Under the ROC Company Law, dissenting shareholders are entitled to appraisal rights in certain major corporate actions such as a proposed amalgamation by the company. If agreement with the company cannot be reached, dissenting shareholders may seek a court order for the company to redeem all of their shares. Shareholders may exercise their appraisal rights by serving written notice on the company prior to or at the related shareholders' meeting and/or by raising and registering an objection at the shareholders' meeting. In addition to appraisal rights, shareholders have the right to sue for the annulment of any resolution adopted at a shareholders' meeting where the procedures were legally defective within 30 days after the date of the shareholders' meeting. One or more shareholders who have held 3% or more of the issued and outstanding shares of a company for a period of one year or longer may require a supervisor to bring a derivative action on behalf of the company against a director as a result of the director's unlawful actions or failure to act.

#### Rights of Holders of Deposited Securities

Except as described below, holders of ADSs generally have no right under the deposit agreement to instruct the depositary to exercise the voting rights for the common shares represented by the ADSs. Instead, by accepting ADSs or any beneficial interest in ADSs, holders of ADSs are deemed to have authorized and directed the depositary to appoint our chairman or his designee to represent them at our shareholders' meetings and to vote the common shares deposited with the custodian according to the terms of the deposit agreement.

The depositary will mail to holders of ADSs any notice of shareholders' meeting received from us together with information explaining how to instruct the depositary to exercise the voting rights of the securities represented by ADSs.

If we fail to timely provide the depositary with an English language translation of our notice of meeting or other materials related to any meeting of owners of common shares, the depositary will endeavor to cause all the deposited securities represented by ADSs to be present at the applicable meeting, insofar as practicable and permitted under applicable law, but will not cause those securities to be voted.

If the depositary timely receives voting instructions from owners of at least 51.0% of the outstanding ADSs to vote in the same direction regarding one or more resolutions to be proposed at the meeting, including election of directors and supervisors, the depositary will notify our chairman or his designee to attend the meeting and vote all the securities represented by the holders' ADSs in accordance with the direction received from owners of at least 51.0% of the outstanding ADSs.

If we have timely provided the depositary with the materials described in the deposit agreement and the depositary has not timely received instructions from holders of at least 51.0% of the outstanding ADSs to vote in the same direction regarding any resolution to be considered at the meeting, then, holders of ADSs will be deemed to have authorized and directed the depositary bank to give a discretionary proxy to our chairman or his designee to attend and vote at the meeting the common shares represented by the ADSs in any manner, our chairman or his designee may wish, which may not be in the interests of holders.

The ability of the depositary to carry out voting instructions may be limited by practical and legal limitations and the terms of the securities on deposit. We cannot assure ADS holders that they will receive voting materials in time to enable them to return voting instructions to the depositary in a timely manner.

While shareholders who own 1% or more of our outstanding shares are entitled to submit one proposal to be considered at our annual general meetings, only holders representing at least 51% of our ADSs outstanding at the relevant record date are entitled to submit one proposal to be considered at our annual general meetings. Hence, only one proposal may be submitted on behalf of all ADS holders.

#### Register of Shareholders and Record Dates

Our share registrar, President Securities Corp., maintains our register of shareholders at its offices in Taipei, Taiwan. Under the ROC Company Law and our Articles of Incorporation, we may, by giving advance public notice, set a record date and close the register of shareholders for a specified period in order for us to determine the shareholders or pledgees that are entitled to rights pertaining to the common shares. The specified period required is as follows:

- annual general meeting—60 days;
- extraordinary shareholders' meeting—30 days; and
- relevant record date—5 days.

#### Annual Financial Statements

At least ten days before the annual general meeting, our annual financial statements must be available at our principal executive office in Kaohsiung, Taiwan for inspection by the shareholders.

#### Transfer of Common Shares

The transfer of common shares in registered form is effected by endorsement and delivery of the related share certificates but, in order to assert shareholders' rights against us, the transferee must have his name and address registered on our register of shareholders. Shareholders are required to file their respective specimen seals, also known as chops, with us. Chops are official stamps widely used in Taiwan by individuals and other entities to authenticate the execution of official and commercial documents. The settlement of trading in the common shares is normally carried out on the book-entry system maintained by the Taiwan Depository & Clearing Corporation.

#### Acquisition of Common Shares by ASE Inc.

Under the ROC Securities and Exchange Law, we may purchase our own common shares for treasury stock in limited circumstances, including:

- to transfer shares to our employees;

- to deliver shares upon the conversion or exercise of bonds with warrants, preferred shares with warrants, convertible bonds, convertible preferred shares or warrants issued by us; and
- to maintain our credit and our shareholders' equity, provided that the shares so purchased shall be canceled.

We may purchase our common shares on the Taiwan Stock Exchange or by means of a public tender offer. These transactions require the approval of a majority of our board of directors at a meeting in which at least two-



thirds of the directors are in attendance. The total amount of common shares purchased for treasury stock may not exceed 10% of the total issued shares. In addition, the total cost of the purchased shares shall not exceed the aggregate amount of our retained earnings, any premium from share issuances and the realized portion of our capital reserve.

We may not pledge or hypothecate any of our shares purchased by us. In addition, we may not exercise any shareholders' right attaching to such shares. In the event that we purchase our shares on the Taiwan Stock Exchange, our affiliates, directors, supervisors, managers, and their respective spouses and minor children and/or nominees are prohibited from selling any of our shares during the period in which we are purchasing our shares.

Pursuant to the ROC Company Law, an entity in which our company directly or indirectly owns more than 50% of the voting shares or paid-in capital, which is referred to as a controlled entity, may not purchase our shares. Also, if our company and a controlled entity jointly own, directly or indirectly, more than 50% of the voting shares or paid-in capital of another entity, which is referred to as a third entity, the third entity may not purchase shares in either our company or a controlled entity.

#### Liquidation Rights

In the event of our liquidation, the assets remaining after payment of all debts, liquidation expenses and taxes will be distributed pro rata to the shareholders in accordance with the relevant provisions of the ROC Company Law and our Articles of Incorporation.

#### Transfer Restrictions

#### Substantial Shareholders

The ROC Securities and Exchange Law currently requires:

- each director, supervisor, manager, or substantial shareholder (that is, a shareholder who holds more than 10% shares of a company), and their respective spouses, minor children or nominees, to report any change in that person's shareholding to the issuer of the shares and the ROC Financial Supervisory Commission; and
- each director, supervisor, manager, or substantial shareholder, and their respective spouses, minor children or nominees, after acquiring the status of director, supervisor, manager, or substantial shareholder for a period of six months, to report his or her intent to transfer any shares on the Taiwan Stock Exchange to the ROC Financial Supervisory Commission at least three days before the intended transfer, unless the number of shares to be transferred does not exceed 10,000 shares.

In addition, the number of shares that can be sold or transferred on the Taiwan Stock Exchange by any person subject to the restrictions described above on any given day may not exceed:

- 0.2% of the outstanding shares of the company in the case of a company with no more than 30 million outstanding shares; or
- 0.2% of 30 million shares plus 0.1% of the outstanding shares exceeding 30 million shares in the case of a company with more than 30 million outstanding shares; or
- in any case, 5% of the average trading volume (number of shares) on the Taiwan Stock Exchange for the ten consecutive trading days preceding the reporting day on which the director, supervisor, manager or substantial shareholder reports the intended share transfer to the ROC Financial Supervisory Commission.

These restrictions do not apply to sales or transfers of our ADSs.

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## MATERIAL CONTRACTS

### Equity Purchase Agreement between Us and Shareholders of Yang Ting

On January 13, 2012, we entered into share purchase agreements with shareholders of Yang Ting in connection with the acquisition of 100.0% of Yang Ting, for a purchase price of NT\$300.0 million (US\$10.3 million). See “Item 4. Information on the Company—History and Development of the Company—Acquisition of Yang Ting” for more information.

### Equity Purchase Agreement between ASESH AT and Ding Yao in respect of Ding Hui

On November 17, 2011, we, through our subsidiary ASESH AT, entered into an equity purchase agreement with Ding Yao in connection with the acquisition of 10% equity of Ding Hui for a consideration of RMB 221.5 million.

### Equity Purchase Agreement between PowerASE and Shareholders of Lu-Chu

On October 25, 2011, we, through our subsidiary PowerASE, entered into equity purchase agreements with shareholders of Lu-Chu. In connection with the acquisition, we purchased a total of 82.27% equity of Lu-Chu for a total consideration of NT\$1,331.7 million.

## FOREIGN INVESTMENT IN THE ROC

Historically, foreign investment in the ROC securities market has been restricted. Since 1983, the ROC government has periodically enacted legislation and adopted regulations to permit foreign investment in the ROC securities market.

On September 30, 2003, the Executive Yuan approved an amendment to Regulations Governing Investment in Securities by Overseas Chinese and Foreign National, or the Regulations, which took effect on October 2, 2003. According to the Regulations, the ROC Financial Supervisory Commission, abolished the mechanism of the “qualified foreign institutional investors” and “general foreign investors” as stipulated in the Regulations before the amendment.

Under the Regulations, foreign investors (other than PRC persons) are classified as either “onshore foreign investors” or “offshore foreign investors” according to their respective geographical location. Both onshore and offshore foreign investors are allowed to invest in ROC securities after they register with the Taiwan Stock Exchange. The Regulations further classify foreign investors into foreign institutional investors and foreign individual investors. “Foreign institutional investors” refer to those investors incorporated and registered in accordance with foreign laws outside of the ROC (i.e., offshore foreign institutional investors) or their branches set up and recognized within the ROC (i.e., onshore foreign institutional investors). Offshore overseas Chinese and foreign individual investors may be subject to a maximum investment ceiling that will be separately determined by the ROC Financial Supervisory Commission, after consultation with the Central Bank of the Republic of China (Taiwan). Currently, there is no maximum investment ceiling for offshore overseas Chinese and foreign individual investors. On the other hand, foreign institutional investors are not subject to any ceiling for investment in the ROC securities market.

Except for certain specified industries, such as telecommunications, investments in ROC-listed companies by foreign investors are not subject to individual or aggregate foreign ownership limits. Custodians for foreign investors are required to submit to the Central Bank of the Republic of China (Taiwan) and the Taiwan Stock Exchange a monthly report of trading activities and status of assets under custody and other matters. Capital remitted to the ROC under these guidelines may be remitted out of the ROC at any time after the date the capital is remitted to the ROC. Capital gains and income on investments may be remitted out of the ROC at any time.

Foreign investors (other than PRC persons) who wish to make (i) direct investments in the shares of ROC private companies or (ii) investment in 10% or more of the equity interest of an ROC company listed on the Taiwan Stock Exchange or the Over-the-Counter (GreTai) Securities Market in any single transaction, are required to submit a foreign investment approval application to the Investment Commission of the Ministry of Economic Affairs of the

ROC or other applicable government authority. The Investment Commission or such other government authority reviews each foreign investment approval application and approves or disapproves each application after consultation with other governmental agencies (such as the Central Bank of the Republic of China (Taiwan) and the ROC Financial Supervisory Commission).

Under current ROC law, any non-ROC person possessing a foreign investment approval may remit capital for the approved investment and is entitled to repatriate annual net profits, interest and cash dividends attributable to the approved investment. Dividends attributable to such investment may be repatriated upon submitting certain required documents to the remitting bank, and investment capital and capital gains attributable to such investment may be repatriated after approvals of the Investment Commission or other government authorities have been obtained.

In addition to the general restriction against direct investment by foreign investors in securities of ROC companies, foreign investors (except in certain limited cases) are currently prohibited from investing in certain industries in the ROC pursuant to a “negative list,” as amended by the Executive Yuan. The prohibition on foreign investment in the prohibited industries specified in the negative list is absolute in the absence of a specific exemption from the application of the negative list. Pursuant to the negative list, certain other industries are restricted so that foreign investors (except in limited cases) may invest in these industries only up to a specified level and with the special approval of the relevant competent authority that is responsible for enforcing the relevant legislation that the negative list is intended to implement.

The ROC Financial Supervisory Commission, announced on April 30, 2009 the Regulations Governing Mainland China Investors’ Securities Investments and Futures Trading in Taiwan (“PRC Regulations”). According to the PRC Regulations, a PRC qualified domestic institutional investor (“QDII”) is allowed to invest in ROC securities (including less than 10% shareholding of an ROC company listed on Taiwan Stock Exchange or Over-the-Counter (GreTai) Securities Market). Nevertheless, the total investment amount of QDIIs cannot exceed US\$500 million. The custodians of QDIIs must apply with the Taiwan Stock Exchange for the remittance amount for each QDII, which cannot exceed US\$100 million, and QDII can only invest in the ROC securities market with the amount approved by the Taiwan Stock Exchange. In addition, QDIIs are currently prohibited from investing in certain industries, and their investment of certain other industries in a given company is restricted to a certain percentage pursuant to a list promulgated by the ROC Financial Supervisory Commission and amended from time to time. PRC investors other than QDII are prohibited from making investments in an ROC company listed on the Taiwan Stock Exchange or the Over-the-Counter (GreTai) Securities Market if the investment is less than 10% of the equity interest of such ROC company.

In addition to investments permitted under the PRC Regulations, PRC investors who wish to make (i) direct investment in the shares of ROC private companies or (ii) investments, individually or aggregately, in 10% or more of the equity interest of an ROC company listed on the Taiwan Stock Exchange or Over-the-Counter (GreTai) Securities Market are required to submit an investment approval application to the Investment Commission of the Ministry of Economic Affairs or other government authority. The Investment Commission or such other government authority reviews each investment approval application and approves or disapproves each application after consultation with other governmental agencies.

In addition to the general restriction against direct investment by PRC investors in securities of ROC companies, PRC investors may only invest in certain industries in the “positive list”, as promulgated by the Executive Yuan. Furthermore, a PRC investor who wishes to be elected as an ROC company’s director or supervisor shall also submit an investment approval application to the Investment Commission of the ROC Ministry of Economic Affairs or other government authority for approval.

## EXCHANGE CONTROLS

## ROC Exchange Controls

The ROC Foreign Exchange Control Law and regulations provide that all foreign exchange transactions must be executed by banks designated by the ROC Financial Supervisory Commission and by the Central Bank of the Republic of China (Taiwan) to engage in such transactions. Current regulations favor trade-related foreign exchange transactions. Consequently, foreign currency earned from exports of merchandise and services may now be retained

and used freely by exporters, and all foreign currency needed for the importation of merchandise and services may be purchased freely from the designated foreign exchange banks.

Apart from trade-related foreign exchange transactions, ROC companies and individual residents of the ROC may, without foreign exchange approval, remit to and from the ROC foreign currency of up to US\$50 million (or its equivalent) and US\$5 million (or its equivalent) respectively in each calendar year. The above limits apply to remittances involving a conversion of NT dollars to a foreign currency and vice versa. In addition, a requirement is also imposed on all enterprises to register medium- and long-term foreign debt with the Central Bank of the Republic of China (Taiwan).

In addition, foreign persons may, subject to specified requirements but without foreign exchange approval of the Central Bank of the Republic of China (Taiwan), remit to and from the ROC foreign currencies of up to US\$100,000 (or its equivalent) per remittance if the required documentation is provided to the ROC authorities. The above limit applies to remittances involving a conversion of NT dollars to a foreign currency and vice versa. The above limit does not, however, apply to the conversion of NT dollars into other currencies, including U.S. dollars, from the proceeds of sale of any underlying shares withdrawn from a depository receipt facility.

## TAXATION

### ROC Taxation

The following discussion describes the material ROC tax consequences of the ownership and disposition of common shares or ADSs to a non-resident individual or non-resident entity that owns common shares or ADSs (referred to here as a “non-ROC holder”). As used in the preceding sentence, a “non-resident individual” is a non-ROC national who owns common shares or ADSs and is not physically present in the ROC for 183 days or more during any calendar year and a “non-resident entity” is a corporation or a non-corporate body that owns common shares or ADSs, is organized under the laws of a jurisdiction other than the ROC and has no fixed place of business or business agent in the ROC.

### Dividends

Dividends (whether in cash or common shares) declared by us out of retained earnings and distributed to a non-ROC holder are subject to ROC withholding tax, currently at the rate of 20% (unless the tax treaties provide a preferable tax rate) on the amount of the distribution (in the case of cash dividends) or on the par value of the distributed common shares (in the case of stock dividends). A 10% undistributed earnings tax is imposed on a ROC company for its after-tax earnings generated after January 1, 1998 which are not distributed in the following year. The undistributed earnings tax so paid will further reduce the retained earnings available for future distribution. When we declare a dividend out of those retained earnings, an amount in respect of the undistributed earnings tax, up to a maximum amount of 10% of the dividend to be distributed, will be credited against the 20% withholding tax imposed on the non-ROC holders.

Distributions of stock dividends out of capital reserves will not be subject to withholding tax.

### Capital Gains

Under ROC law, capital gain realized upon the sale or other disposition of securities prior to January 1, 2013 is exempt from ROC income tax. However, starting from January 1, 2013, capital gain realized upon the sale or other disposition of securities by individuals, no matter whether they are residents or non-residents, is subject to 15% income tax. The amount of capital gain is calculated by deducting cost and necessary expenses in respect of the securities transaction from revenues. Hence, starting from January 1, 2013, capital gain derived from the sale of

common shares is subject to 15% income tax. Capital loss incurred from the sale or disposition of shares can be deducted from capital gains in the same calendar year when calculating the net capital gains and income tax liability, but cannot be carried forward. In addition, only 50% of the net capital gains will be subject to ROC income tax if an individual has directly held the underlying shares for one year or longer.

Sales of ADSs are not regarded as sales of ROC securities and thus any gains derived from transfers of ADSs by non-ROC holders are not currently subject to ROC income tax.



### Securities Transaction Tax

Securities transaction tax will be imposed on the seller at the rate of 0.3% of the transaction price upon a sale of common shares. Transfers of ADSs are not subject to ROC securities transaction tax.

### Subscription Rights

Distributions of statutory subscription rights for the common shares in compliance with the ROC Company Act are currently not subject to ROC tax. Income derived from sales of statutory subscription rights evidenced by securities are subject to 15% income tax starting from January 1, 2013 and are subject to securities transaction tax, currently at the rate of 0.3% of the gross amount received. Income derived from sales of statutory subscription rights which are not evidenced by securities are treated as income generated from property transactions and are subject to income tax at a fixed rate of 20% of the income if the seller is a non-ROC holder. Subject to compliance with ROC law, we, in our sole discretion, may determine whether statutory subscription rights are evidenced by securities.

### Estate and Gift Tax

ROC estate tax is payable on any property within the ROC of a deceased non-resident individual, and ROC gift tax is payable on any property within the ROC donated by a non-resident individual. Estate tax and gift tax are currently imposed at the rate of 10%. Under the ROC Estate and Gift Act, common shares issued by ROC companies are deemed located in the ROC without regard to the location of the owner. It is unclear whether a holder of ADSs will be considered to own common shares for this purpose.

### Tax Treaty

At present, the ROC has income tax treaties with Indonesia, Singapore, New Zealand, Australia, the United Kingdom, South Africa, Gambia, Swaziland, Malaysia, Macedonia, the Netherlands, Senegal, Sweden, Belgium, Denmark, Israel, Vietnam, Paraguay, Hungary, France, India, Slovakia, Switzerland, Germany and Thailand. These tax treaties may limit the rate of ROC withholding tax on dividends paid with respect to common shares issued by ROC companies. A non-ROC holder of ADSs will be considered as the beneficial owner of common shares for the purposes of such treaties. Accordingly, holders of ADSs who wish to apply a reduced withholding tax rate that is provided under a tax treaty should consult their own tax advisers concerning such application. The United States does not have an income tax treaty with the ROC.

### United States Federal Income Taxation

The following discussion describes the material U.S. federal income tax consequences of the ownership and disposition of common shares or ADSs to those U.S. holders described below who hold such common shares or ADSs as capital assets for U.S. federal income tax purposes. As used herein, a "U.S. Holder" is a beneficial owner of common shares or ADSs that is for U.S. federal income tax purposes:

- a citizen or individual resident of the United States;
- a corporation, or other entity taxable as a corporation, created or organized under the laws of the United States or of any political subdivision of the United States; or
- an estate or trust the income of which is subject to U.S. federal income taxation regardless of its source.

This discussion assumes that we are not a passive foreign investment company, as discussed below.

This discussion does not address all of the tax consequences that may be relevant in light of a U.S. Holder's particular circumstances. In particular, it does not address all of the tax consequences that may be relevant to holders subject to special rules, including:

- persons subject to the alternative minimum tax;

- persons subject to taxation under the provisions of the Internal Revenue Code of 1986, as amended (the “Code”), known as the Medicare contribution tax;
  - insurance companies;
  - tax-exempt entities, including “individual retirement accounts” or “Roth IRAs”;
- dealers or traders in securities who use a mark-to-market method of accounting for U.S. federal income tax purposes;
  - certain financial institutions;
  - partnerships or other entities classified as partnerships for U.S. federal income tax purposes;
- persons holding common shares or ADSs in connection with a trade or business conducted outside of the U.S.;
- persons who hold or will hold common shares or ADSs as part of a straddle, hedge, conversion transaction, integrated transaction or similar transaction;
  - persons whose functional currency for U.S. federal income tax purposes is not the U.S. dollar;
  - persons who own or are deemed to own 10% or more of our voting stock; or
- persons who acquired our common shares or ADSs pursuant to the exercise of any employee stock option or otherwise as compensation.

If an entity that is classified as a partnership for U.S. federal income tax purposes holds common shares or ADSs, the U.S. federal income tax treatment of a partner will generally depend on the status of the partner and the activities of the partnership. Partnerships holding common shares or ADSs and partners in such partnerships should consult their tax advisers as to the particular U.S. federal income tax consequences of holding and disposing of the common shares or ADSs.

This discussion is based on the Code, final, temporary and proposed Treasury regulations, administrative pronouncements and judicial decisions, all as of the date hereof. These laws and regulations are subject to change, possibly with retroactive effect. This discussion is also based in part on representations by the depositary and assumes that each obligation under the deposit agreement and any related agreement will be performed in accordance with its terms.

In general, for U.S. federal income tax purposes, a U.S. Holder who owns ADSs should be treated as the owner of the common shares represented by the ADSs. Accordingly, no gain or loss should be recognized if a U.S. holder exchanges ADSs for the common shares represented by those ADSs.

The U.S. Treasury has expressed concerns that parties to whom American depositary shares are released before delivery of shares to the depositary (“pre-release”), or intermediaries in the chain of ownership between holders and the issuer of the security underlying the American depositary shares, may be taking actions that are inconsistent with the claiming of foreign tax credits by the holders of American depositary shares. Such actions would also be inconsistent with the claiming of the preferential rates of tax applicable to dividends received by certain non-corporate U.S. holders. Accordingly, the creditability of ROC taxes and the availability of the preferential tax rates for dividends received by certain non-corporate U.S. Holders, both described below, could be affected by actions that may be taken

by such parties or intermediaries.

U.S. Holders should consult their tax advisers with regard to the application of the U.S. federal income tax laws to their common shares or ADSs as well as any tax consequences arising under the laws of any state, local or non-U.S. taxing jurisdiction.

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## Dividends

Distributions paid on common shares or ADSs (other than certain pro rata distributions of common shares to all shareholders, including holders of ADSs), including the amount of any ROC taxes withheld thereon, reduced by any credit against the withholding tax on account of the 10% retained earnings tax imposed on us, generally will constitute foreign-source dividend income to the extent paid out of our current or accumulated earnings and profits as determined in accordance with U.S. federal income tax principles. Because we do not maintain calculations of our earnings and profits under U.S. federal income tax principles, we expect that distributions generally will be reported to U.S. Holders as dividends. The amount a U.S. Holder will be required to include in income for any dividend paid in NT dollars will be equal to the U.S. dollar value of the NT dollars paid, calculated by reference to the exchange rate in effect on the date the payment is received by the depository (in the case of ADSs) or by a U.S. Holder (in the case of common shares), regardless of whether the payment is in fact converted into U.S. dollars on the date of receipt. If a U.S. Holder does not convert the amount of any dividend income received into U.S. dollars on the date of receipt and subsequently realizes gain or loss on a sale or other disposition of NT dollars, such gain or loss generally will be U.S.-source ordinary income or loss. The amount of any taxable distribution of property other than cash will be the fair market value of such property on the date of distribution. The amount of any dividend will not be eligible for the dividends-received deduction generally available to U.S. corporations under the Code.

Subject to applicable limitations and the discussion above regarding concerns expressed by the U.S. Treasury, under current law, certain dividends paid by qualified foreign corporations to certain noncorporate U.S. Holders are taxable at the preferential rates applicable to long-term capital gain. A foreign corporation is treated as a qualified foreign corporation with respect to dividends paid on stock that is readily tradable on a securities market in the United States, such as the New York Stock Exchange, where our ADSs are traded. U.S. Holders should consult their tax advisers to determine whether these preferential rates may apply to dividends they receive and whether they are subject to any special rules that limit their ability to be taxed at these preferential rates.

Subject to applicable limitations and restrictions and the discussion above regarding concerns expressed by the U.S. Treasury, the ROC taxes withheld from dividend distributions, reduced by any credit against the withholding tax which is paid by the Company on account of the 10% retained earnings tax, will be eligible for credit against the U.S. Holder's U.S. federal income tax liability. The limitation on foreign taxes eligible for credit is calculated separately with respect to specific classes of income. The rules governing foreign tax credits are complex and, therefore, U.S. Holders should consult their tax advisers regarding the availability of foreign tax credits in their particular circumstances. Instead of claiming a credit, U.S. Holders may, at their election, deduct such otherwise creditable ROC taxes in computing their taxable income, subject to generally applicable limitations under U.S. law.

Certain pro rata distributions of common shares by a company to its shareholders, including holders of ADSs, will not be subject to U.S. federal income tax. Accordingly, these distributions will not give rise to U.S. federal income against which the ROC tax imposed on these distributions may be credited. U.S. Holders should consult their tax advisers as to whether any ROC tax imposed on these pro rata distributions of common shares may be creditable against their foreign-source income from other sources.

## Capital Gains

A U.S. Holder generally will recognize U.S.-source capital gain or loss for U.S. federal income tax purposes on the sale or exchange of common shares or ADSs, which will be long-term capital gain or loss if the common shares or ADSs were held for more than one year. The amount of gain or loss will be equal to the difference between the U.S. Holder's tax basis in the common shares or ADSs disposed of and the amount realized on disposition, in each case as determined in U.S. dollars. A U.S. Holder's basis in its common shares or ADSs will generally equal the U.S. Holder's cost of such ADSs or common shares. If a U.S. Holder receives common stock or ADSs in a non-taxable pro rata

distribution with respect to its ADSs or common shares (“new securities”), the basis of such new securities must be determined by allocating the basis of the ADSs or common shares with respect to which the new securities were issued (“old securities”) between the old securities and new securities in proportion to their fair market values on the date of distribution. U.S. Holders should consult their tax advisers about the treatment of capital gains, which may be taxed at lower rates than ordinary income for non-corporate taxpayers, and capital losses, the deductibility of which may be limited.

#### Passive Foreign Investment Company Rules

We believe that we were not a passive foreign investment company, or PFIC, for U.S. federal income tax purposes for our 2012 taxable year. However, since PFIC status depends upon the composition of a company's income and assets and the market value of its assets (including, among others, less than 25 percent owned equity investments) from time to time, there can be no assurance that we will not be considered a PFIC for any taxable year.

If we were treated as a PFIC for any taxable year during which a U.S. Holder held a common share or an ADS, certain adverse consequences could apply to that U.S. Holder. If we were a PFIC for any taxable year during which a U.S. Holder held a common share or an ADS, such U.S. Holder may be required to file a report with the Internal Revenue Service containing such information as the U.S. Treasury may require.

#### Information Reporting and Backup Withholding

Payments of dividends and sales proceeds that are made within the United States or through certain U.S.-related financial intermediaries generally are subject to information reporting, and may be subject to backup withholding unless (i) the U.S. Holder is an exempt recipient or (ii) in the case of backup withholding, the U.S. Holder provides a correct taxpayer identification number and certifies that it is not subject to backup withholding.

The amount of any backup withholding from a payment to a U.S. Holder will be allowed as a credit against the U.S. Holder's federal income tax liability and may entitle it to a refund, provided that the required information is timely furnished to the Internal Revenue Service.

Certain U.S. Holders who are individuals may be required to report information relating to the ownership of securities of a non-U.S. person, subject to certain exceptions (including an exception for securities held in certain accounts maintained by U.S. financial institutions). U.S. Holders should consult their tax advisers regarding their reporting obligations with respect to the common shares or ADSs.

#### DIVIDENDS AND PAYING AGENTS

Not applicable.

#### STATEMENT BY EXPERTS

Not applicable.

#### DOCUMENTS ON DISPLAY

We file annual reports on Form 20-F and periodic reports on Form 6-K with the SEC. You can read and copy these reports and other information at the SEC's Public Reference Room at 450 Fifth Street, N.W., Washington, D.C. 20549. You can also request copies of the documents, upon payment of a duplicating fee, by writing to the Public Reference Section of the SEC. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room. The reports and other information we file electronically with the SEC are also available to the public from the SEC's website at <http://www.sec.gov>.

#### SUBSIDIARY INFORMATION

Not applicable.

Item 11. Quantitative and Qualitative Disclosures about Market Risk

Market Risk

Our exposure to financial market risks relates primarily to changes in interest rates and foreign currency exchange rates.

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Interest Rate Risk. Our exposure to interest rate risks relates primarily to our long-term floating rate loans, which is normally incurred to support our corporate activities and capital expenditures.

We entered into several interest rate swap contracts to mitigate the interest rate risk on our long-term loans. In August 2008, we entered into a set of contracts in the amount of NT\$12,000.0 million, all of which matured in March 2013. In February 2009, we entered into another set of contracts in the amount of NT\$5,500.0 million, all of which matured in March 2013. The notional amounts as of December 31, 2012 for the two sets of interest rate swap contracts were NT\$1,740.0 million and NT\$797.5 million, respectively. Interest receipt and payment were based on a floating rate of 0.887% and fixed rates of 0.96% to 2.48% as of December 31, 2012. See note 26(h) to our consolidated financial statements for details of these contracts.

The fair value of these contracts as of December 31, 2012 was negative NT\$4.5 million (US\$0.2 million) and we recognized them as hedging derivative liabilities-current with an adjustment to shareholders' equity.

The tables below set forth information relating to our significant obligations, including interest rate swap, short-term borrowings and long-term borrowings, including bank loans and capital lease obligations and bonds payable, that are sensitive to interest rate fluctuations as of December 31, 2012.

	Expected Maturity Date						Total	Fair Value
	2013	2014	2015	2016	2017	Thereafter		
	(in millions, except percentage)							
Interest Rate Swaps								
Variable to Fixed (NT\$)	2,537.5	–	–	–	–	–	2,537.5	(4.5)
Average pay rate	2.00 %	–	–	–	–	–	2.00 %	
Average receive rate	0.89 %	–	–	–	–	–	0.89 %	

	Expected Maturity Date						Total	Fair Value
	2013	2014	2015	2016	2017	Thereafter		
	(in millions, except percentages)							
Short-term borrowings:								
Variable rate (NT\$)	4,199.0	–	–	–	–	–	4,199.0	4,199.0
Average interest rate	1.26 %	–	–	–	–	–	1.26 %	
Variable rate (US\$)	410.7	–	–	–	–	–	410.7	410.7
Average interest rate	1.71 %	–	–	–	–	–	1.71 %	
Variable rate (RMB)	4,465.7	–	–	–	–	–	4,465.7	4,465.7
Average interest rate	5.28 %	–	–	–	–	–	5.28 %	
Variable rate (EUR)	3.3	–	–	–	–	–	3.3	3.3
Average interest rate	3.08 %	–	–	–	–	–	3.08 %	

Long-term  
borrowings:

Variable rate (NT\$)	5,395.1		8,445.9		3,035.6		77.8		77.8		38.9		17,071.1	17,071.1
Average interest rate	1.93	%	1.64	%	1.78	%	2.03	%	2.17	%	2.19	%	1.76	%
Fixed rate (NT\$)	0.0		0.0		0.1		8,000.0		–		–		8,000.1	8,000.1
Average interest rate	10.59	%	10.59	%	10.59	%	1.45	%	–		–		1.45	%
Variable rate (US\$)	114.6		436.5		135.0		–		–		–		686.1	686.1
Average interest rate	1.70	%	2.17	%	2.93	%	–		–		–		2.24	%
Fixed rate (US\$)	1.6		0.0		0.1		–		–		–		1.7	1.7
Average interest rate	3.69	%	5.97	%	6.12	%	–		–		–		3.87	%
Variable rate (RMB)	–		–		0.7		–		–		–		0.7	0.7
Average interest rate	–		–		6.57	%	–		–		–		6.57	%