

VII. Discussion and Analysis of Financial Status and Operating Results and Risk Management

1. Financial Status

Nonconsolidated Financial Statements

Item	Year	2019	2018	Difference	
				Amount	%
Current Assets		\$ 43,342,833	\$ 37,889,542	\$ 5,453,291	14.39
Investment		1,527,238	2,067,913	(540,675)	(26.15)
Fixed Assets		58,779,789	61,980,853	(3,201,064)	(5.16)
Intangible Assets		1,059,626	1,162,204	(102,578)	(8.83)
Other Assets		2,436,495	494,989	1,941,506	392.23
Total Assets		107,145,981	103,595,501	3,550,480	3.43
Current Liabilities		20,404,401	18,580,671	1,823,730	9.82
Long-term Liabilities		31,843,617	31,937,463	(93,846)	(0.29)
Total Liabilities		52,248,018	50,518,134	1,729,884	3.42
Capital Stock		7,791,466	7,791,466	0	0.00
Capital Surplus		209,852	127,734	82,118	64.29
Retained Earnings		35,447,618	33,361,411	2,086,207	6.25
Other shareholders' Equity & Treasury Stock		(324,741)	(195,070)	(129,671)	(66.47)
Equity Belong to Parent Company		(96,467)	(82,315)	(14,152)	(17.19)
Non-Controlling Interests		43,027,728	41,003,226	2,024,502	4.94
Total Shareholders' Equity		11,870,235	12,074,141	(203,906)	(1.69)
Reason for Major Difference:					
1. Decrease of investment: decrease of financial assets considering increase of costs.					
2. Increase of other assets: increase of recognized assets.					
3. Increase of capital surplus: increase of subsidiary ownership.					
4. Decrease of other equity: exchange loss from 2019 foreign financial statements conversation.					
Note: The listed numbers were from consolidated report and audited by CPA using IFRS.					

2. Operating Results

(1) Comparison and Analysis Table for Operating Results for Last Two Years

Nonconsolidated Financial Statements

Unit: NT\$ Thousands

Item	Year	2019	2018	Increase (Decrease)	Difference (%)	Analysis
Net Sales		\$ 66,525,144	\$ 68,039,379	\$ (1,514,235)	(2.23)	
Cost of Sales		53,848,249	54,209,337	(361,088)	(0.67)	
Gross Profit		12,676,895	13,830,042	(1,153,147)	(8.34)	
Operating Expenses		3,964,655	4,046,388	(81,733)	(2.02)	
Operating Income		8,712,240	9,783,654	(1,071,414)	(10.95)	
Non-Operating Income/Expenses		(204,722)	(348,317)	143,595	41.23	1
Net Income Before Tax		8,507,518	9,435,337	(927,819)	(9.83)	
Income Tax Expense		1,628,226	1,922,775	(294,549)	(15.32)	
Net Income		\$ 6,879,292	\$ 7,512,562	(633,270)	(8.43)	
Analysis of Difference over 20%						
1. Increased in non-operating income/expenses due to increase of non-financial assets lost						
2 Increased in income tax expenses primarily due to increase in profit before tax.						

(2) Revenue Forecast and Financial Impact:

WSTS expected the global semiconductor market to begin recovering in 2020 and achieve sales of up to US\$426 billion, up 4.8% from 2019. ITRI ISTI statistics suggested that the Taiwanese IC industry output will grow by 7% in 2020. The global and Taiwanese semiconductor industries can therefore expect an improvement in the overall climate in 2020 compared to 2019.

In terms of IC product categories, IC Insights statistics indicated that the DRAM market remained the largest IC product category despite plummeting 38% between 2018 and 2019. The NAND Flash market was also expected to decline by 32%. Together, DRAM and NAND Flash was estimated to account for 29% of the global IC product market in 2019. The memory market will begin to thaw in 2020 according to statistical data from ISTI. The growth rate of 17% will put it slightly above the semiconductor industry average. The DRAM and NAND Flash markets will each grow by 13% and 32% to reach US\$70.8 billion and US\$50.8 billion respectively. In terms of terminal application IC, data provided by IC Insights showed that communication IC was the largest category and accounted for more than 36%, followed by computer IC and consumer IC.

Thanks to demand driven by 5G and AI applications, Gartner predicted that global shipments of end products such as personal computers, tablets and mobile phones to grow by 0.8% to 2.16 billion units in 2020. DIGITIMES Research estimated that global shipments of smart phones will grow by 4.3% and rise back up to 1.4 billion units in 2020; The size of the global data center market is expected to grow by 10% in 2020 and reach US\$206.2 billion.

The US-China trade situation remains the biggest source of uncertainty in the global economy however. China is the largest semiconductor market and its investment in localization of the semiconductor industry supply chain may have affect supply and demand in the global semiconductor market. These risk factors may lead to restrictions on market competition for existing vendors.

Growth is expected by PTI in DRAM, NAND Flash, Logic and advanced product components.

2020 Sales forecast as below:

Services	Forecast Volume
Assembly	12.5 billion pcs
Testing	8.0 billion pcs
Bumping	900 k wafers
Chip Probing	2.5 k wafers
SSD +SIP	9.5 million pcs

3. Cash Flow

(1) Cash Flow Analysis for 2019

Unit: NT\$ Thousand

Beginning Cash Balance 1/1/2019	2019 Cash Flow from Operating Activities	2019 Cash Flow from Investing Activities	2019 Cash Flow from Financing Activities	Currency Exchange for Cash and Cash Equivalent	Ending Cash Balance 12/31/2019
18,544,142	17,955,080	(8,064,186)	(6,250,418)	(384,570)	21,800,048
<p>2019 Cash Flow Analysis :</p> <p>(1) Operating Activities: Increase cash inflow from change in 2019 depreciation and profit.</p> <p>(2) Investing Activities: Increase of cash outflow was due to acquisition of real estate, property and equipment's in 2019.</p> <p>(3) Financing Activities: The increase of cash outflow was due to change in cash dividends payout in 2019.</p>					

(2) Cash Flow Improvement Plan

Not applicable.

(3) Cash Flow Estimation for 2020

Unit: NT\$ Thousand

Beginning Cash Balance 1/1/2020	Estimated 2020 Cash Flow from Operating Activities	Estimated 2020 Cash Outflow	Estimated Ending Cash Balance 12/31/2020	Funding for Cash Flow Shortage	
				Investing Activities	Finance Activities
21,800,048	18,000,000	19,000,000	20,800,048	—	—
<p>1. 2020 Cash Flow Analysis:</p> <p>(1) Operating Activities: The cash inflow is from 2020 estimated net income and depreciation.</p> <p>(2) Investing Activities: The cash flow is for acquisition of real estate, property, and equipment in 2020.</p> <p>(3) Financing Activities: The cash flow is for 2020 cash dividends payout and payback bank loan.</p> <p>2. Funding for Cash Flow Shortage: Not Applicable.</p>					

4. Effects of Major Capital Expenditures on Financial Status in Most Recent Year

(1) Major Capital Expenditures and Sources of Capital

Majority of 2018 PTI capital expenditures were for acquiring real estate, property and equipments. The sources of capital were from the Company's own funds and bank loans. In order to stay competitive, PTI has constantly devoted on production efficiency modification, new technology research, upgrade equipments, and capacity expansion to meet customer satisfaction.

5. Investment Policy in Recent Years, Main Causes for Profits or Losses, Improvement Plans, and Investment Plans for the Coming Year

Our investment strategy mainly complements the development of our core business. The emphasis is on strengthening our strategic alliances with key customers and expanding our business reach in related industries. We shareholder equity to be increased through investment returns. For an overview of PTI's investment businesses in 2019, please refer to the information on affiliated enterprises provided in Appendix 8: Special Disclosure.

In 2009, PVI established Powertech Technology (Suzhou) Ltd. (Hereafter referred to as "PTI Suzhou") as an indirect investment through Powertech Holding (B.V.I.) Inc. The amount of investment fell within the limit of US\$51,000,000 set by the MOEA Investment Commission for investment in China. The establishment of PTI Suzhou marked our official entry into the packaging and testing sector in Mainland China. After more than ten years of development, PTI Suzhou has now recorded US\$216 million investments with the local government and has a registered capital of US\$72 million. As of December 31, 2019, short-term bank loans amounted to US\$19 million and the debt-to-equity ratio was 54%. Cumulative losses were approximately US\$54 million and represented more than half of paid-in capital. The financial structure and performance were therefore less than ideal. In 2019 we saw the US-China trade war and the Chinese government continuing to offer incentives for the development of the semiconductor industry. The government's push for Chinese companies to move their production sites back to China from overseas may prove beneficial to PTI Suzhou. To take advantage of this opportunity, PTI replaced the management team at PTI Suzhou with a new team from the parent company in 2019. In addition to continued loans and endorsements/guarantees, the investment of additional US\$28 million in PTI Suzhou was passed by the 17th session of the 8th Board of Directors in April 2020, increasing its registered capital from US\$72 million to US\$100 million. We hope the coming of the new management, products and customers will lead to a gradual expansion in revenue and lower production costs. This will in turn hopefully reduce operating costs at PTI Suzhou leading to improved profitability and financial structure.

Our investment plan for the upcoming year will be based on the overall state of the industry and the needs of business development. Consolidation of strategic partnerships and the extension of our business reach in related industries will be the key principles. The investment plan will be carefully assessed before being submitted to the Board of Directors for discussion and approval.

6. Risk Analysis and Assessment in the Recent Year and as of Publication Date of Annual Report

(1) Effects of Changes in Interest Rates, Foreign Exchange Rates and Inflation on Corporate Finance, and Future Response Measures:

1. Interest Rate

The semiconductor packaging and testing industry where our company is in is capital intensive therefore large fund is required for the Company to invest into fixed assets. Besides the Company's own funds, the sources of the Company's funding are primarily bank loans, thus the Company's profitability is affected by interest rate movement. To minimize this risk, PTI compares the level of interest rates of its bank loans on a regular basis with market average rate and negotiate timely with the correspondent banks to obtain better interest rates to ensure the financing costs are at comparatively low level.

2. Foreign Exchange Rate:

(1) Effects

Exportation account for 79.85% of 2019 PTI's net sales, so the majority of trade were conducted in foreign currency and US dollars is the most common currency used. Majority of equipment's and raw materials were mainly trade in US dollars. Both import and export were affected by currency exchange rate fluctuate. 2019 net foreign exchange gains were about NT\$ 110.15 million.

(2) Future Response Measures

- Foreign currencies from exporting income balance out with importing expenses which creates mutual hedging effects to eliminate exchange rate risks.
- Finance staff collected information regarding changes of foreign exchange rates, including supply and demand of foreign currencies, monetary tightness condition of the correspondent banks, and trend analysis of exchange rates, which will then serve as reference information to respond to future exchange rate movements.
- To timely purchase foreign currencies based on the Company's future foreign currency requirements, in order to determine the cost and reduce the impact of

movements in exchange rates.

- To use the bank credit at the right time to convert foreign currency loans to NT dollars borrowing.
- To apply financial instruments such as derivatives of forward exchange to avoid the risks of changes in exchange rates leading to exchange loss on assets, liabilities and future transactions denominated by foreign currencies.

3. Inflation:

No significant impact of inflation on the PTI's profitability and business operations in 2019.

(2) Policies, Main Causes of Gain or Loss and Future Response Measures with Respect to High-risk, High-leveraged Investments, Lending or Endorsement Guarantees, and Derivatives Transactions:

1. PTI has not engaged in any high-risk or high-leveraged investments.
2. PTI proposed and approved by board to authorized Chairman to lend Powertech Technology (Singapore) Pte. Ltd. US\$50 m in 2014. Board had reduced the endorsement and guarantees limit to US\$30 m in Mar 2016 after review its funding needs. According to Article of Incorporation, PTI and its subsidiary should not endorse and guarantee to a single entity more than 10% and 50% PTI's net worth. As of Dec 31, 2019 net worth was NT\$43.03 b, and the cap for endorsement and guarantee were NT\$4.3 b and NT\$21.50 b which were all above the amount lent out.
3. 8th Annual 12th Board meeting on May 3, 2019 approved to lend Powertech Technology (Suzhou) Ltd. no more than US\$24 million and Powertech Technology (Singapore) Pte. Ltd. no more than US\$30 million at the period no longer than 1 year for capacity expansion at estimated annual interest rate 3.0%. As the date of printing, actual lending amount was US\$0 for Powertech Technology (Suzhou) Ltd. and US\$30.0 million (NT\$907.6 million) for Powertech Technology (Singapore) Pte. Ltd.
As of Dec 31 2019, PTI net worth was NT\$43.03 billion and lending amount were NT2.2 billion and NT\$4.3 billion for separated entities which were below the lending regulation maximum. The lending for Tera Probe, Inc. JPY 1,1455 million (NT\$ 317.4 million) also meet the lending regulation.
4. No major currency exchange gain or loss from currency investment as of the date of printing.

(3) Future Research and Development Plans and R&D Expenses from Expected Investments

The Company has put much emphasis on the development of talents since its establishment. Setting up a R&D department in 1998 and the R&D technology center in

2006, PTI has continually introduced new processes and technologies of packaging and testing. To adapt to the future semiconductor memory device trend towards being versatile, high-speed, highly reliable and high density and the development of new products of our customers, PTI will proactively develop and introduce new technologies in the future. PTI budgets to invest in R&D about NT\$1.7 b in 2020 and expects to spend similar amount as previous year.

(4) Effects of and Response to Changes in Policies and Regulations Relating to Corporate Finance and Sales.

PTI has always pay close attention to any international and domestic policies changes, and PTI will make appropriate modifications to the operating systems when necessary. As of the publication date of this annual report, there is no significant change or impact of law on PTI's operations.

(5) Effects of and Response to Changes in Technology and in Industry Relating to Corporate Finance and Sales:

The semiconductor industry, where PTI belongs to, is under rapid changes in products and technology. To adapt to these rapid changes, PTI needs to upgrade its processes and develop new technologies constantly, upgrade its equipment, and expand its capacities in a timely manner. To reduce the risks of overexpansion at the same time keep up with the product development trend, PTI has established collaborative relationships and co-op with strategic alliances with major customers to develop advanced technology capabilities. In addition, PTI has invested in related industries to form a complete supply chain network and diversify the risks caused by market changes. PTI also strengthen its cost control and cash management skills to maintain competitiveness and eliminate the impacts of changes in technology and in industry relating to corporate finance and sales.

(6) The Impact of Changes in Corporate Image on Corporate Risk Management, and the Company's Response Measures:

Since the establishment of the Company, PTI has consistently maintained an ethical business practices, and has actively strengthened its internal and quality management to build up customer trusts. PTI has a good corporate image and there has been no corporate crisis in recent years caused by changes in corporate image.

(7) Expected Benefits from, Risks Relating to and Response to Merger and Acquisition Plans

No plan of merger and acquisition as of the date of printing.

(8) Expected Benefits from, Risks Relating to and Response to Factory Expansion Plans

Hsin Chu Science Park Plant III is under construction and expect to complete by second

half of 2020. The new facility is dedicated for Fan-Out Panel-Level packages (FOPLP).

(9) Risks Relating to and Response to Excessive Concentration on Supply Sources and Customer

The supply sources and major customers of the Company have been disclosed in related sections of this report. As the concentration level of the upper stream memory IC markets gets intense, sales of the downstream packaging and testing providers will get more concentrated. PTI has proactively developed new customers, collaborative relationships, and strategic alliances with existing customers to eliminate the highly customer concentrated risks. PTI has also actively reached out to non-memory IC packaging and testing business. The results are noticeable. In terms of supply sources, PTI has been actively seeking qualified alternative suppliers to reduce the risks of excessive concentration.

(10) Effects, Risks, and Solution for Share Transfers of Shareholders With 10% Or More Shares: None

(11) Effects, Risks, and Solution of Changes in Control over the Company: None.

(12) For litigation or non-litigious matters, clearly state if the Company or the Company's directors, supervisors, president, actual person in charge, shareholders with 10% shareholdings or more, and affiliated companies that have been concluded or pending major litigations, non-litigation or administrative litigation matters, whose outcome may have major impact on shareholders' equity or securities prices:

1. The Company's major litigations, non-litigation or administrative litigation matters: None.

2. Major litigations, non-litigation or administrative litigation matters of the Company's directors, supervisors, president, actual person in charge, shareholders with 10% shareholdings or more and affiliated companies: None.

(13) Other Important Risks and Remedies: None.

7. Other Important Matters: None.