

Trust the People  
Who Founded the Dedicated  
Foundry Business

ANNUAL  
REPORT  
1998

Taiwan Semiconductor Manufacturing Company, Ltd.

## **MAJOR FACILITIES**

### Corporate Headquarters & FAB II, FAB V

No.121, Park Ave. III,

Science-Based Industrial Park,

Hsin-Chu, Taiwan, R.O.C.

TEL: 886-3-578-0221 FAX: 886-3-578-1546

### FAB I

Building 67, No. 195, Sec. 4, Chung-Hsing Rd.,

Chu-Tung, Hsin-Chu, Taiwan, R.O.C.

TEL: 886-3-582-1240 FAX: 886-3-582-2616

### FAB III & FAB IV

No. 9, Creation Rd. I,

Science-Based Industrial Park,

Hsin-Chu, Taiwan, R.O.C.

TEL: 886-3-578-1688 FAX: 886-3-578-1548

### TSMC-USA

1740 Technology Drive, Suite 660, San Jose,

CA 95110, U.S.A.

TEL: 1-408-437-8762 FAX: 1-408-441-7713

32 Thorn Oak, Dove Canyon,

CA 92629, U.S.A.

TEL: 1-949-459-7855 FAX: 1-949-459-9489

### TSMC-Europe

World Trade Center, Strawinskylaan 1145,

1077 XX Amsterdam, The Netherlands

TEL: 31-20-305-9900 FAX: 31-20-305-9911

### TSMC-Japan

16F, Queen's Tower C, 2-3-5

Minato Mirai, Nishi-Ku, Yokohama,

Kanagawa 220-6216, Japan

TEL: 81-45-682-0670 FAX: 81-45-682-0673

## **TSMC SPOKESMAN**

Name: Y. C. Huang

Title: Vice President

TEL: 886-3-578-0221 FAX: 886-3-578-1545

## **AUDITORS**

Company: T N SOONG & CO

Auditors: S. C. Huang, Edward Way

Address: 12Fl., No.156, Sec.3, Min-Sheng

E. Rd., Taipei, Taiwan, R.O.C.

TEL: 886-2-2545-9988 FAX: 886-2-2545-9966

## **STOCK TITLE TRANSFER**

Company: China Trust Commercial Bank

Transfer Agency Department

Address: 5Fl., No.83, Sec.1, Chung-Ching

S. Rd., Taipei, Taiwan, R.O.C.

TEL: 886-2-2361-3033 FAX: 886-2-2311-6723

## **ADR DEPOSITARY BANK**

Company: Citibank, N.A.

Depositary Services Department

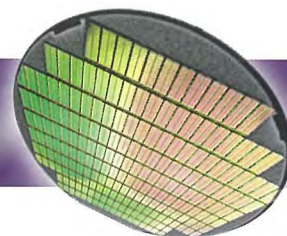
Address: 21Fl., 111 Wall Street, New York,

NY 10043, U.S.A.

TEL: 1-212-657-1853 FAX: 1-212-825-2103

## **WEB SITE**

<http://www.tsmc.com.tw>



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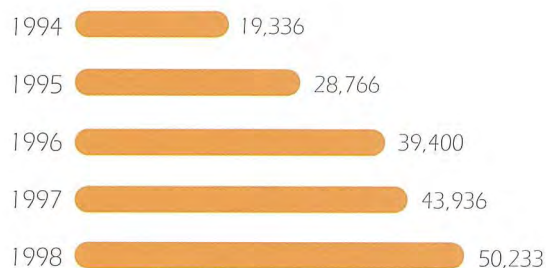
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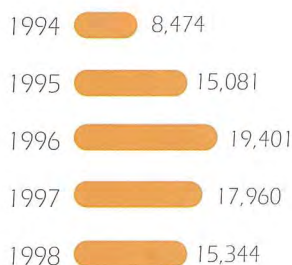
## Net Sales

NT\$ million



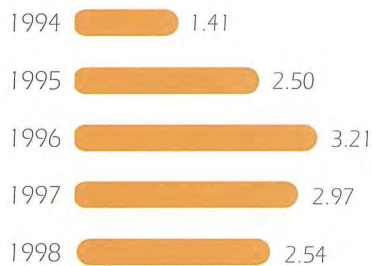
## Net Income

NT\$ million



## Earnings Per Share

NT\$



## ***Business Philosophy***

TSMC is committed to:

Integrity

Maintaining a Consistent Focus on Our Core Business -- IC Foundry Manufacturing

Globalization

Long-term Vision and Strategies

Treating Customers as Partners

Building Quality into all Aspects of Our Business

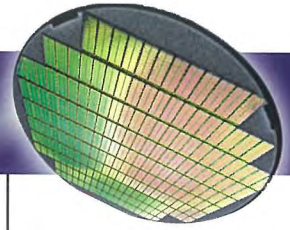
Unceasing Innovation

Fostering a Dynamic and Fun Work Environment

Keeping Communication Channels Open

Caring for Employees and Shareholders, and Being a Good Corporate Citizen

# Trust Our Commitment



## *Letter to the Shareholders*

### **Dear Shareholders,**

1998 was a poor year for the world semiconductor industry. Oversupply led to price deterioration, which resulted in an 8.4% decrease in the size of the market from 1997 levels. Nevertheless, TSMC managed to achieve a 14.3% growth in sales revenue to reach a record high of NT\$50.23 billion, with profits of NT\$15.34 billion and earnings per share of NT\$2.54. Although our bottom line was inevitably affected by the unfavorable environment and hence was decreased by 14.6% from 1997, our profitability of 30.5% nevertheless outperformed most of the semiconductor manufacturing companies in the world.

In 1998, our achievements and leadership qualities were well recognized by prestigious publications in Taiwan as well as elsewhere in the world. CommonWealth magazine in Taiwan and Far Eastern Economic Review, Asian Business and AsiaMoney have all ranked TSMC as Taiwan's number one company for 1998.

TSMC's world-class performance clearly shows that we are meeting the challenges of an increasingly competitive environment and maintaining our strong leadership position in the foundry industry.

### **Technology Leadership**

An important way TSMC sustains leadership and increases barriers to competition is through new technology development. TSMC R&D leads the IC foundry industry and now matches worldwide IC industry leaders in the development and introduction of the latest generation of technologies.



**Morris Chang**  
Chairman

In 1998, we made significant breakthroughs in many new manufacturing process technologies, such as 0.18 $\mu$ m logic process, copper interconnect process, and embedded process for rapidly developing system-on-a-chip applications. Our 0.18 $\mu$ m logic process has the most aggressive design rules in the world, as well as very advanced low voltage, high performance transistors. TSMC is also the first dedicated foundry to provide the advanced copper interconnect process as a fully design-rule-compatible option in 0.18 $\mu$ m logic technology. All these efforts demonstrate TSMC's commitment to providing customers with the earliest possible access to the latest technology.

### **Capacity Expansion**

In 1998, we anticipated increased demand for our deep submicron processes and expanded our installed monthly capacity by nearly 28% (from 119,700 to 153,000 8-inch equivalent wafers by the end of the year). Most of these additions were in the 0.35 $\mu$ m and 0.25 $\mu$ m process technologies, ensuring that leading edge production capacity would be in place well ahead of customer demand. However, due to the downturn in the worldwide semiconductor industry, our actual total output in 1998 was 1.2 million, on a par with 1997 levels.

In late 1998, we saw a strong upsurge in orders, and we expect the increasing trend to continue into 1999, in line with

industry forecasts for a recovery in 1999 after the 1998 slump. We are confident that our current installed capacity, supplemented by equipment upgrades in current facilities and additional capacity installed in 1999 will sufficiently accommodate customer demand for wafers.

### **Global Presence**

TSMC is the only foundry to provide customers several unique sites around the globe as sources to assure adequate production capacity. By the end of 1998, TSMC was operating five fabs at our Hsin-Chu site. Our sixth fab is currently under construction in southern Taiwan's Tainan County. Our joint venture fab in the U.S., WaferTech, began volume



F. C. Tseng  
President

production in mid-1998. In September 1998, we further enhanced our global presence when we announced a joint venture plan with Philips Semiconductor and Singapore EDB Investments. This new joint venture fab in Singapore is another example of our commitment to operating as a "second source" within one company and is consistent with our long-term capacity expansion strategy.

In 1998, TSMC's customer base remained solid around the globe, with U.S. companies purchasing 57% of our total output, the Asian market 32%, and European-based companies 11%.

### **Public Service**

While never losing concentration on our core business, we devote ourselves to making TSMC a good corporate citizen. We understand that the success of the company very much depends on the well being of the society and environment where the company is established. As one demonstration of our commitment, in April, 1998 the TSMC Culture and Education Foundation was formed to support activities in Taiwan that promote education, technology, art and culture, and the development of our local communities.

### **Vision and Future Outlook**

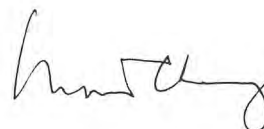
TSMC's vision is "to be the most reputable, service-oriented and maximum-total-benefits silicon foundry in the world, and

thus earn the reward of also being the largest and most profitable." To fulfill this vision, we maintain a consistent focus on our foundry business and concentrate on our commitment to being our customers' Virtual Fab.

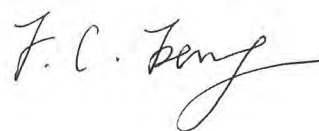
In 1999, the IC industry is expected to experience an overall rebound after the 1998 slump. In the long run, foundry services will play an important role in IC manufacturing worldwide. Fabless design houses already depend on foundries, and integrated device manufacturers (IDMs) are expected to evolve stronger and stronger business connections with foundries for IC manufacturing. We believe that our Virtual Fab strategy enables us to provide the best available service to our customers and will thus secure our number one position in the IC foundry industry for many years to come.

In closing, we would like to thank all of our customers, shareholders and employees for your continued support and dedication.

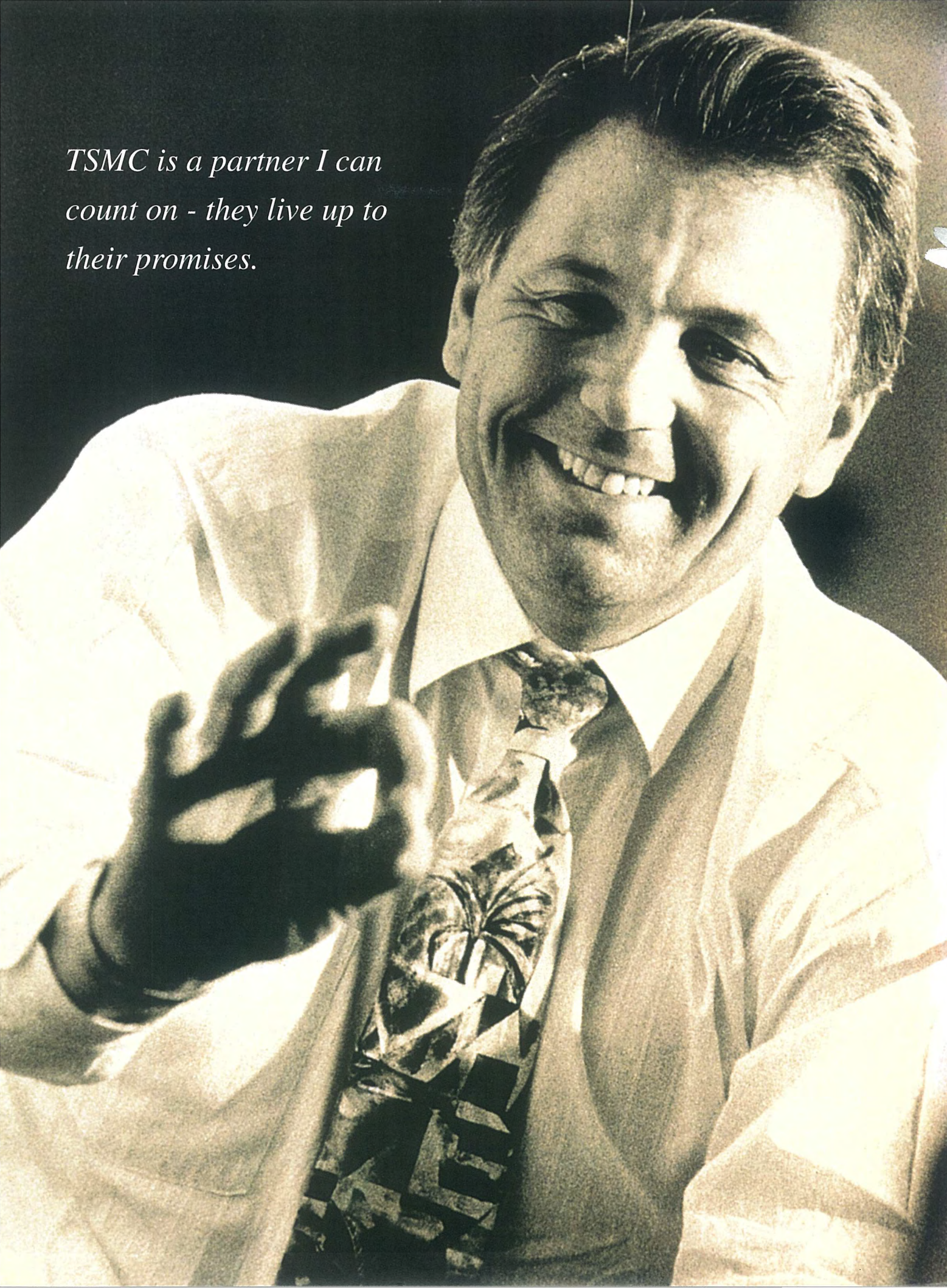
Morris Chang,  
Chairman



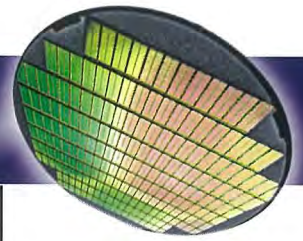
F. C. Tseng,  
President



*TSMC is a partner I can  
count on - they live up to  
their promises.*



# Trust Our Dedication



## A Brief Introduction to TSMC

### 1. Company Profile

Founded in 1987, Taiwan Semiconductor Manufacturing Company (TSMC) is a dedicated independent semiconductor manufacturing foundry based in Taiwan's "Silicon Valley," Hsin-Chu Science-Based Industrial Park. We are listed on the Taiwan Stock Exchange (TSE) and the New York Stock Exchange (NYSE) under the symbol TSM.

TSMC was the first pure integrated circuit (IC) foundry in the world. Since the beginning, we have been dedicated to providing manufacturing services for advanced ICs. Our company's charter prevents us from designing or making our own brand-name IC products. TSMC therefore is a partner, not a competitor with other semiconductor companies. TSMC's success in the foundry business has served as a model for many new entrants to the market. With TSMC as the engine of change, what was once only a concept -- a pure foundry -- is today a multi-billion dollar industry. As the semiconductor industry faces greater consolidation and spiraling IC fab construction costs, dedicated foundry companies like TSMC stand to become the primary sources that meet the growing worldwide demand.

TSMC is the largest IC foundry in the world. At the end of 1998, we operated two 6-inch wafer fabs (Fab I & II) and

three 8-inch fabs (Fab III, IV and V) with annual capacity of 1.6 million top-quality, high-yield 8-inch equivalent wafers. Ground has been broken for TSMC's sixth fab, located in the new Tainan Science-Based Industrial Park. The new fab will begin production by the year 2000.

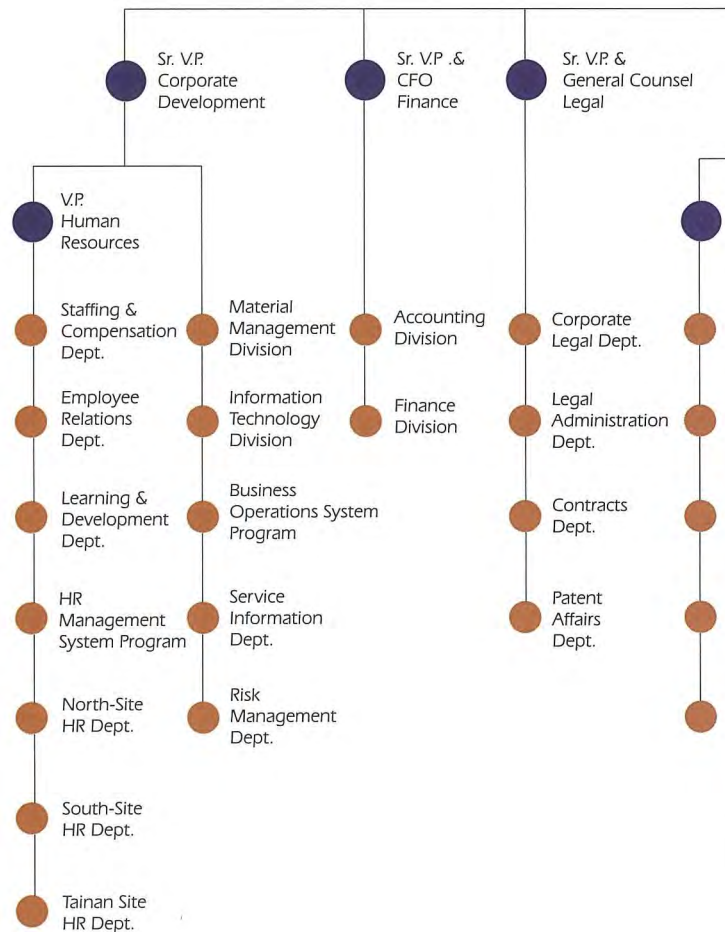
TSMC is an international company that serves the world market. Consequently we have established facilities in locations other than Taiwan, including sales and engineering offices in the United States, Europe and Japan. WaferTech, TSMC's first joint venture foundry in the United States, established in alliance with several long-standing customers, began volume production in mid-1998. Also in 1998, TSMC launched a joint venture fab project with Philips Semiconductor and Singapore EDB Investments. This new fab is scheduled to open in Singapore during the year 2000.

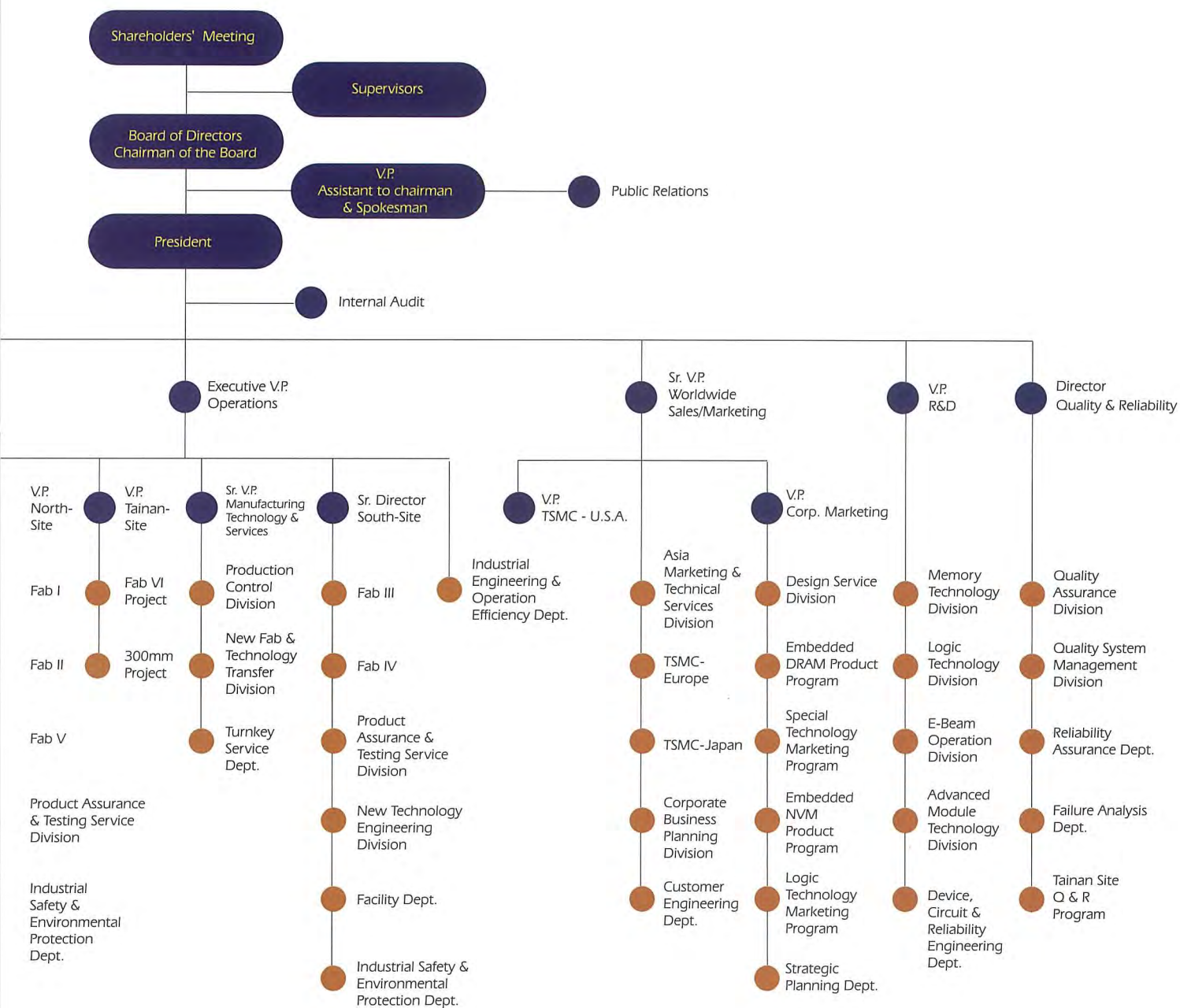
In addition to maintaining a competitive edge through steadily increasing capacity, TSMC also provides consistent volume production levels of new generation technologies. TSMC offers a comprehensive set of technology processes, including processes to manufacture CMOS logic, mixed-signal, volatile and non-volatile memory, embedded memory, and BiCMOS ICs. Our firm commitment to advanced technology ensures that TSMC will provide the best possible value-added services and become true partners to our customers.

TSMC focuses on process technology and manufacturing excellence, but places even greater emphasis on customer service. TSMC's objective is to become our customers' Virtual Fab. That is, to give our customers all the benefits of an in-house fabrication plant, without the associated expense or organizational complexity. TSMC's strategy is to improve service, develop a long-term competitive advantage by strengthening the bond between ourselves and our customers, and ensure our continued leadership in the global IC foundry business.

As a good corporate citizen, TSMC takes the job of community service and employee relations seriously. TSMC's concerted efforts have earned the company several awards from the Taiwan government for environmental protection, health and safety, employee benefits, employee training and social welfare. In addition, prestigious magazines in Taiwan and around the world have ranked TSMC as Taiwan's leading company. Our Chairman, Dr. Morris Chang, has also received many individual honors. Business Week magazine, in its January 12, 1998 issue, selected Dr. Chang as one of the "Top 25 Managers of the Year." BankAmerica Robertson Stephens also honored Dr. Chang, citing him as one of the most significant contributors in the 50 years of semiconductor industry.

## 2. Organization





### 3. Directors and Supervisors

(As of February 28, 1999)

| Title Name                      | Date Elected | Term (Year) | Shareholding* | Spouse & Minor Shareholding* | Education & Experience                                                                                                                                        | Remarks                                                            |
|---------------------------------|--------------|-------------|---------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Chairman<br>Morris Chang        | 1997.05.13   | 3           | 35,320,708    | 0                            | Ph.D., Electrical Engineering, Stanford University/<br>Chairman, Vanguard International Semiconductor Corp./<br>Chairman, WYSE Technology Inc./Chairman, TSMC |                                                                    |
| Director<br>A.P.M. van der Poel | 1997.05.13   | 3           | 1,053,565,770 | 0                            | B.S., Electronic Engineering, Eindhoven Technical University/<br>Chairman and CEO, Philips Semiconductors International B.V.                                  | Philips Electronics N.V.<br>Representative of Legal Entity         |
| Director<br>J.C. Lobbézoo       | 1997.05.13   | 3           | 1,053,565,770 | 0                            | B.A., Business Economics, Erasmus University/<br>Chief Financial Officer, Philips Semiconductors International B.V.                                           | Philips Electronics N.V.<br>Representative of Legal Entity         |
| Director<br>G.J. Kleisterlee    | 1997.05.13   | 3           | 1,053,565,770 | 0                            | B.S., Electronic Engineering, Eindhoven Technical University/<br>President, Philips Taiwan                                                                    | Philips Electronics N.V.<br>Representative of Legal Entity         |
| Director<br>L.P. Hsu            | 1997.05.13   | 3           | 1,053,565,770 | 0                            | B.S., Physics, National Cheng-Kung University/<br>Executive Vice President, Philips Taiwan                                                                    | Philips Electronics N.V.<br>Representative of Legal Entity         |
| Director<br>Tzong-Rong Tsai     | 1997.05.13   | 3           | 991,069,594   | 0                            | Ph.D., Economics, Michigan State University/<br>Deputy Executive Secretary, Development Fund, Executive Yuan                                                  | Development Fund, Executive Yuan<br>Representative of Legal Entity |
| Director<br>Ching-Chang Yen     | 1997.05.13   | 3           | 991,069,594   | 0                            | Master of Comparative Law, University of Michigan/<br>Deputy Minister, Ministry of Finance, R.O.C.                                                            | Development Fund, Executive Yuan<br>Representative of Legal Entity |
| Director<br>Chintay Shih        | 1997.05.13   | 3           | 991,069,594   | 0                            | Ph.D., Electrical Engineering, Princeton University/<br>President, Industrial Technology Research Institute                                                   | Development Fund, Executive Yuan<br>Representative of Legal Entity |
| Director<br>I-Kwei Wu           | 1997.05.13   | 3           | 13,662,500    | 0                            | China Junior College of Marine Technology/<br>Chairman, Swanson Plastics Corp.                                                                                | Maw-Chong Investment Co., Ltd.<br>Representative of Legal Entity   |
| Director<br>F.C. Tseng          | 1997.05.13   | 3           | 9,513,763     | 40,511                       | Ph. D. Electrical Engineering, National Cheng-Kung University/<br>President, TSMC                                                                             |                                                                    |
| Supervisor<br>E. Th. Ausems     | 1997.05.13   | 3           | 1,053,565,770 | 0                            | B.A. Economics, Tilburg University/<br>Executive Vice President, Philips Taiwan                                                                               | Philips Electronics N.V.<br>Representative of Legal Entity         |
| Supervisor<br>Chung-Ying Hu     | 1997.05.13   | 3           | 991,069,594   | 0                            | Ph.D., Geophysics, National Central University/Director,<br>Council for Economic Planning and Development, Executive Yuan                                     | Development Fund, Executive Yuan<br>Representative of Legal Entity |
| Supervisor<br>Jerome S.N. Hu    | 1997.05.13   | 3           | 8,791         | 0                            | M.S., Chemical Engineering, University of Michigan/<br>Chairman, Chao Ting-Chen Cultural Education Foundation                                                 |                                                                    |

\* As per the actual reported number of shares on February 28, 1999

### 4. Major officers

(As of February 28, 1999)

| Title Name                          | Date Registered | Shareholding* | Spouse & Minor Shareholding* | Education & Experience                                                                                                                                                                   |
|-------------------------------------|-----------------|---------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| President<br>F.C. Tseng             | 1998.05.12      | 9,513,763     | 40,511                       | Ph. D., Electrical Engineering, National Cheng-Kung University/<br>Sr. Vice President, Operations, TSMC/ President, Vanguard Semiconductor International Corporation/<br>President, TSMC |
| Senior Vice President<br>Quincy Lin | 1995.09.01      | 5,366,975     | 867,564                      | Ph.D., Business Administration, University of Kentucky, U.S.A./<br>Vice President, Corp. Marketing & Sales, TSMC/<br>Senior Vice President, Corp. Development, TSMC                      |

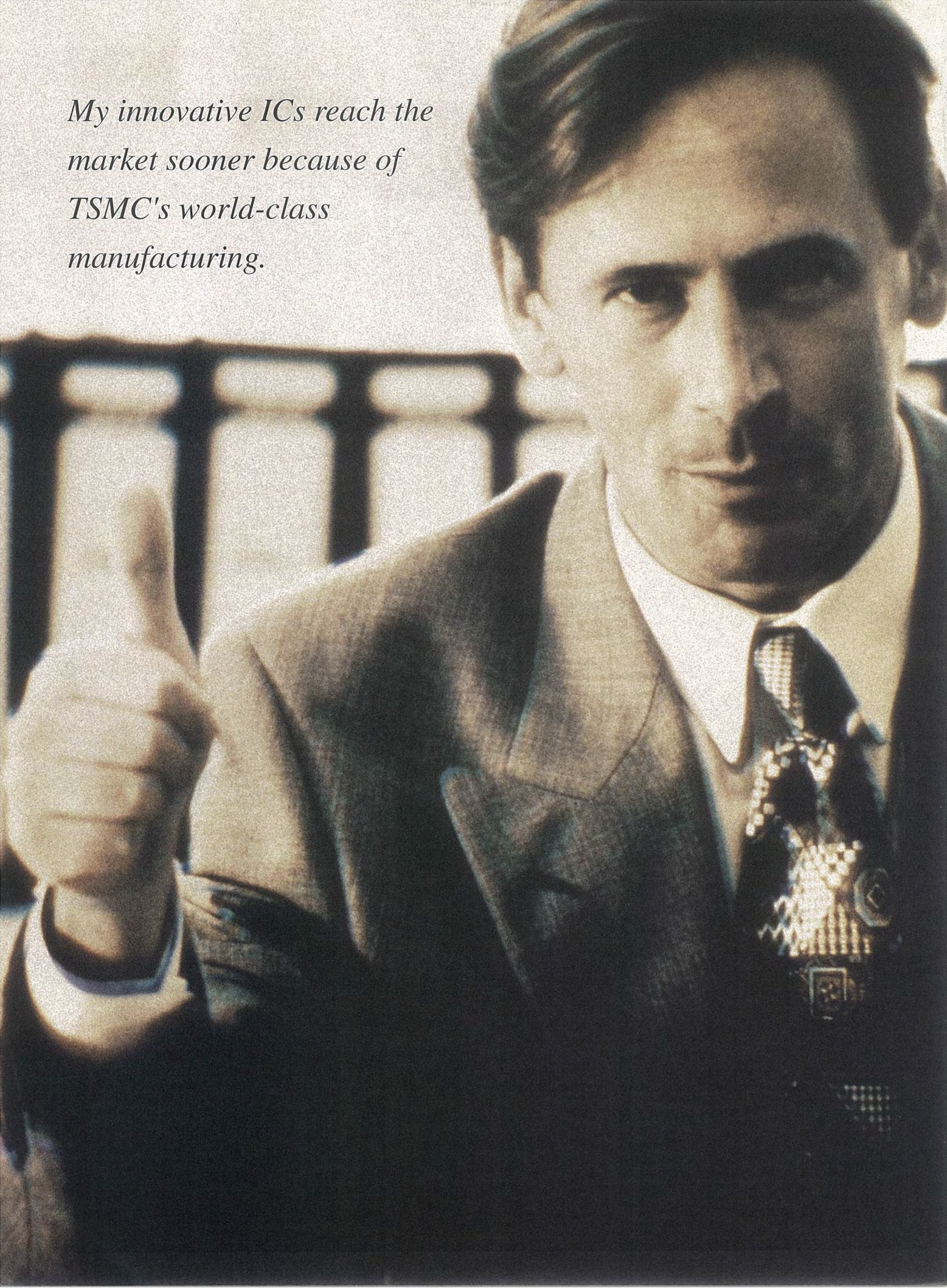
| Title Name                             | Date Registered | Shareholding* | Spouse & Minor Shareholding* | Education & Experience                                                                                                                                                                                                                                      |
|----------------------------------------|-----------------|---------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Senior Vice President<br>Steve Tso     | 1997.03.04      | 1,159,333     | 0                            | Ph.D., Material Science, UC Berkeley, U.S.A./<br>Senior vice President, World-Wide Sales & Marketing, TSMC<br>Senior Vice President, Manufacturing Technology & Services, TSMC                                                                              |
| Senior Vice President<br>K.C. Chen     | 1997.11.24      | 258,740       | 7,000                        | Attorney-at-law (California)/Barrister-at-law (England)/Advocate & Solicitor (Singapore)/<br>President, National Culture and Arts Foundations, Taiwan/<br>Senior Vice President & General Counsel, TSMC,<br>Chairman, TSMC Culture and Education Foundation |
| Senior Vice President<br>Harvey Chang  | 1998.02.03      | 110,000       | 0                            | MBA, Wharton School, University of Pennsylvania, U.S.A./Chairman, China<br>Securities Investment Trust Corp./President, China Development Corp./<br>Senior Vice President & Chief Financial Officer, TSMC                                                   |
| Senior Vice President<br>Ronald Norris | 1998.11.10      | 7,250         | 0                            | M.S., Physics, University of Arkansas, U.S.A./<br>President, TSMC-U.S.A./<br>Senior Vice President, World-Wide Sales & Marketing, TSMC                                                                                                                      |
| Vice President<br>Yen-Chun Huang       | 1995.09.01      | 4,647,002     | 0                            | MBA, Saginaw Valley State University, U. S. A./<br>Vice President, Corp. Services, TSMC/<br>Spokesman & Special Assistant to Chairman, TSMC                                                                                                                 |
| Vice President<br>Jyan-Bang Chen       | 1997.05.13      | 1,381,711     | 0                            | M.S., Physics, National Tsing-Hua University/<br>Vice President, TSMC North-Site/<br>Vice President, TSMC Tainan Site                                                                                                                                       |
| Vice President<br>Shang-Yi Chiang      | 1997.08.05      | 715,767       | 0                            | Ph.D., Electrical Engineering, Stanford University, U. S. A./Department Manager,<br>Device Research & Applications, Hewlett-Packard Laboratories, Hewlett-Packard Company/<br>Vice President, R&D, TSMC                                                     |
| Vice President<br>Ping Yang            | 1997.11.18      | 522,672       | 20,907                       | Ph.D., Electrical Engineering, University of Illinois, Urbana-Champaign, U. S. A./ Director, Device<br>and Flow Design in the Semiconductor Process & Device Center, Texas Instruments Incorporated/<br>Vice President, Corporate Marketing, TSMC           |
| Vice President<br>Che-Chia Wei         | 1998.03.03      | 400,000       | 400                          | Ph.D., Electrical Engineering, Yale University, U.S.A.<br>Senior Vice President, Technology, Chartered Semiconductor Manufacturing Ltd., Singapore/<br>Vice President, TSMC North-Site                                                                      |
| Vice President<br>Swee-Huat Lee        | 1998.08.11      | 0             | 0                            | M.S., Management, Stanford University, U.S.A./<br>Regional Vice President, Network Systems, Lucent Technologies Asia/Pacific Ltd. /<br>Vice President, Human Resources, TSMC                                                                                |

\* As per the actual reported number of shares on February 28, 1999

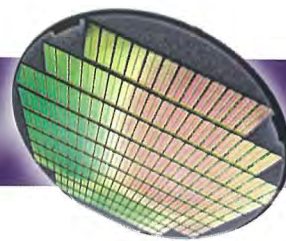
## 5. Status of Bond Issuance

| Issuance                                          | Issuing Date                     | Tenor   | Coupon Rate(or YTM)                                                                             | Outstanding     | Use of Proceeds                            | Status Description                                                      |
|---------------------------------------------------|----------------------------------|---------|-------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------|-------------------------------------------------------------------------|
| US\$350 million<br>Eurodollar<br>Convertible Bond | Jul. 03, 1997                    | 5 years | YTM = 6.28% p.a. (Zero-coupon,<br>136.23% payable at maturity, if<br>not converted or redeemed) | US\$350 million | Fab IV and Fab V Expansion                 | Completed                                                               |
| NT\$4 billion<br>Corporate Bond                   | Mar. 04, 1998                    | 5 years | 7.71% p.a.                                                                                      | NT\$4 billion   | Repay long-term bank loan                  | Completed                                                               |
| NT\$6 billion<br>Corporate Bond                   | Nov. 18, 1998 -<br>Dec. 01, 1998 | 5 years | 7.12% p.a.                                                                                      | NT\$6 billion   | Upgrade of Fab III and Fab IV<br>Equipment | Started in January, 1999<br>and expected to be<br>completed in Q3, 1999 |

*My innovative ICs reach the  
market sooner because of  
TSMC's world-class  
manufacturing.*



# Trust Our Performance



## Operational Highlights

### 1. Business Activities

#### (1) Business Scope

TSMC is dedicated to practicing business at the highest level of integrity and maintaining a single-minded focus on the IC foundry industry. The company provides new product implementation and advanced IC manufacturing services of the highest quality to the worldwide semiconductor industry. Building on our core competencies of manufacturing excellence and attentive customer support, we offer a full range of manufacturing services on a broad range of technologies, including wafer manufacturing, wafer probing, assembly and testing, mask production, and design services. Wafer manufacturing accounted for about 90% of 1998 total revenue.

Over the past 11 years, customers have utilized TSMC's manufacturing services for a wide variety of end-product applications. We estimate that in 1998 TSMC produced approximately 3% of the world's IC supply.

#### (2) Customer Applications

Advanced ICs produced for customers by TSMC are used in a broad range of the end-product applications, including

computers, internet appliances, communication systems, consumer electronic products, automotive and industrial equipment.

### 2. Marketing and Sales

Despite a decline in worldwide IC sales and intense competition in the foundry industry in 1998, TSMC's sales rose 14.3% to NT\$50.23 billion, with profits of NT\$15.34 billion.

The company's superior performance can be attributed to three major factors. First, we maintain close relationships with a large customer base because of our excellent foundry services. TSMC has served over 400 customers in the past 11 years and over 50% of them used our services in 1998. The diversity of our customer base has shielded us from the most serious effects of market downturns. Second, we adhere to a strategy of limited exposure in the memory foundry market, which reduced the negative impact of drops in memory prices. Third, we have re-engineered our company over the past two years, gradually changing TSMC's structure and culture from a production-orientation to a service-orientation. Re-engineering continues, with the goal of building a differentiation by becoming our customers' Virtual Fab.

These factors, combined with our strong market position, the

## Production over the Last Five Years

Unit: Capacity/Quantity (8" wafer) / Amount (NT\$K)

| Year | Wafers    |           |            | Package  |          |        | Others   |          |        |
|------|-----------|-----------|------------|----------|----------|--------|----------|----------|--------|
|      | Capacity  | Quantity  | Amount     | Capacity | Quantity | Amount | Capacity | Quantity | Amount |
| 1994 | 514,247   | 527,876   | 8,699,044  | -        | -        | -      | -        | -        | -      |
| 1995 | 643,764   | 679,532   | 11,507,350 | -        | -        | -      | -        | -        | -      |
| 1996 | 880,837   | 843,755   | 16,721,361 | -        | -        | -      | -        | -        | -      |
| 1997 | 1,177,393 | 1,206,165 | 28,343,668 | -        | -        | -      | -        | -        | -      |
| 1998 | 1,617,231 | 1,202,922 | 28,169,217 | -        | -        | -      | -        | -        | -      |

## Net Sales over the Last Five Years

Unit: Quantity (8" wafer) / Amount (NT\$K)

| Year | Wafers   |            |          |            | Package  |         |          |           | Others   |         |          |           | Total    |            |          |            |
|------|----------|------------|----------|------------|----------|---------|----------|-----------|----------|---------|----------|-----------|----------|------------|----------|------------|
|      | Domestic |            | Exports  |            | Domestic |         | Exports  |           | Domestic |         | Exports  |           | Domestic |            | Exports  |            |
|      | Quantity | Amount     | Quantity | Amount     | Quantity | Amount  | Quantity | Amount    | Quantity | Amount  | Quantity | Amount    | Quantity | Amount     | Quantity | Amount     |
| 1994 | 158,758  | 5,526,433  | 325,160  | 10,748,451 | 1,620    | 99,647  | 31,661   | 2,212,963 | -        | 312,873 | -        | 435,704   | 160,378  | 5,938,953  | 356,820  | 13,397,118 |
| 1995 | 192,512  | 8,540,012  | 448,034  | 16,589,558 | 1,856    | 139,081 | 25,916   | 2,115,917 | -        | 597,449 | -        | 783,974   | 194,368  | 9,276,542  | 473,951  | 19,489,449 |
| 1996 | 247,171  | 9,735,637  | 550,779  | 26,278,058 | 4,157    | 378,020 | 14,324   | 1,119,274 | -        | 886,343 | -        | 1,002,847 | 251,328  | 11,000,000 | 565,103  | 28,400,179 |
| 1997 | 308,616  | 9,963,659  | 796,345  | 29,248,555 | 11,000   | 806,301 | 28,950   | 1,803,038 | -        | 780,892 | -        | 1,333,182 | 319,616  | 11,550,852 | 825,295  | 32,384,775 |
| 1998 | 289,232  | 10,402,803 | 842,280  | 34,468,771 | 9,259    | 668,222 | 35,632   | 2,897,781 | -        | 392,713 | -        | 1,402,718 | 298,491  | 11,463,738 | 877,912  | 38,769,270 |



ability to produce the latest generation technologies, plus increasing capacity in advanced technologies, allowed TSMC to maintain excellent results through a turbulent 1998.

### **3. Market Analysis**

Compared to growth of 5.6% in 1997, the worldwide IC market shrank 8.4% in 1998. Memory-market revenue continued to contract, shrinking by 21% because of falling per-bit prices. Logic component sector declined 5%. Forecasts for 1999 predict that the worldwide IC market will register growth of around 10% to 15% over 1998 lows. They also predict that the memory market will grow in 1999, fueled primarily by the emergence of new applications, and more stable prices resulting from a gradual balancing of supply and demand. Growth rates in the logic component markets are forecast to be between 6% and 12%.

Over the years, TSMC has strategically managed its exposure to the memory market by limiting the proportion of memory manufacturing services to a designated percentage of total sales revenue. This policy has successfully shielded the company from near free-fall in the memory market in 1996 and 1997. In 1998, the policy continued to protect TSMC as the memory market contracted further. TSMC will maintain the policy through 1999 even as we work to expand our share of the emerging market for embedded memory products.

In the market for logic components, in 1998 TSMC's

customer base increased for graphics products, internet hardware, digital consumer electronics, and wireless communication products. All these market sectors registered strong growth and all demanded advanced technologies. Through 1999, TSMC will continue to focus our marketing efforts on customers who require advanced technologies in high growth segments of the logic component markets.

In the long run, we at TSMC believe that foundry services will play an increasingly important role in IC manufacturing worldwide. Fabless companies already depend on foundries, and integrated device manufacturers (IDMs) will initiate stronger business connections with independent foundries for IC manufacturing. Industry forecasts predict that by the year 2000, 15% of worldwide IC production will come from foundries, and that the level will reach 25% to 30% by the year 2008.

TSMC is in an ideal position to benefit from the industry's trend toward "disintegration." Our sales are expected to benefit from the rapid increase in sales of low-priced personal computers, internet services, and multimedia products. Consumer demand for increased functionality is expected to push our customers to IC integration and create a need for higher capacity advanced technologies. TSMC expects to maintain high average selling prices for wafers as our production capacity evolves through more and more advanced technologies.

TSMC fully understands that we may from time to time face short-term over-capacity in the foundry industry and serious competition in the future. To ensure TSMC's continued leadership and profitability in 1999 and beyond, we are determined to establish even closer partnerships with our customers and to provide the most advanced technologies as well as the most comprehensive services.

In the coming years, TSMC will focus on the following state-of-the-art technologies:

#### **(1) Advanced CMOS Logic Processes**

TSMC began mass-production of 0.25 $\mu$ m CMOS logic process in 1998 and 0.22 $\mu$ m at the end of the same year. We expect that 0.18 $\mu$ m CMOS logic process will enter volume production in the first quarter of 1999. The 0.15 $\mu$ m CMOS logic process should be available in early 2000. The move into these advanced technologies helps TSMC's customers develop higher-density, higher-performance chips and enhances their performance and price competitiveness.

#### **(2) Advanced Mixed-Signal Processes**

To serve the mixed digital-and-analog market, in early 1998 TSMC successfully developed the 0.25 $\mu$ m 2-layer-poly, 5-layer-metal process to meet the demands for communication and consumer ICs. This process also makes it easier for TSMC's customers to integrate digital-signal processors and/or data-compression chips with analog circuitry for the fast-growing multimedia market. The 0.18 $\mu$ m mixed-signal

process is expected to be available in the second half of 1999.

#### **(3) Advanced SRAM/Embedded SRAM Processes**

TSMC's 0.25 $\mu$ m high-speed SRAM process became available to customers in 1998. Low-power SRAM using 0.25 $\mu$ m process technology was ready in mid-1997 with mass-production beginning in late 1998. The next generation, 0.18 $\mu$ m process, will be available in 1999. Embedded SRAM utilizing 0.25 $\mu$ m 1-layer-poly, 5-layer-metal process technology, completed the development phase in late 1998 and is now being provided to customers. The 0.18 $\mu$ m embedded SRAM process will be ready at the same time as the 0.18 $\mu$ m logic process. These processes will enable TSMC customers to further reduce costs and enhance performance.

#### **(4) Advanced DRAM/Embedded DRAM Processes**

In 1998, TSMC completed the development of 0.25 $\mu$ m DRAM processes and began mass-production. We had completed the development of 0.35 $\mu$ m embedded DRAM process in 1997 and formally released the process to customers in 1998. The 0.25 $\mu$ m embedded DRAM process will be ready for production in the second quarter of 1999. Embedded DRAM offers great opportunities for TSMC customers in such markets as notebook graphics, disk storage, communications, and digital consumer electronics. DRAM utilizing 0.21 and 0.19 $\mu$ m process technologies should be introduced in the second half of 1999.

#### (5) Advanced Flash/Embedded Flash Processes



In mid-1998 TSMC finished developing non-volatile memory utilizing  $0.35\mu\text{m}$  logic-based 2-layer-poly, 2-layer-metal, split-gate Flash,

and in late 1998 completed development of  $0.35\mu\text{m}$  mixed-signal 2-layer-poly, 4-layer-metal, split-gate embedded Flash. Embedded Flash process helps customers integrate Flash with logic, especially in micro-controller, DSP, and other system-on-a-chip (SOC) applications that require a high degree of integration. Development of  $0.25\mu\text{m}$  Flash/embedded Flash will soon be completed and should be available for volume production in 1999.

#### (6) Special Logic Processes

In 1998 TSMC began developing special logic processes, including CMOS image sensors and high-voltage processes for customers targeting niche markets. CMOS image sensors employing  $0.8/0.6\mu\text{m}$  processes became available in 1998 and development of  $0.5/0.35\mu\text{m}$  process technologies will be finished and available for production in 1999. Development of  $1.0/0.8\mu\text{m}$  1-layer-poly, 2-layer-metal and  $1.0\mu\text{m}$  2-layer-poly, 2-layer-metal high-voltage processes was completed in 1998 and these processes will also be ready for production in 1999. In the coming year, TSMC will develop and begin production of  $0.6/0.5\mu\text{m}$  high-voltage processes.

#### (7) Design Services

TSMC provides strong support to customers through our design service capability. In 1998 TSMC completed development of a library for  $0.25\mu\text{m}$  standard-cells. The  $0.18\mu\text{m}$  library will be introduced to customers in the first quarter of 1999. In addition, the  $0.18\mu\text{m}$  version of the TSMC design kit and IP/ megacells such as ADC/DAC, PLL, and DSP core will be available in early 1999. In addition to our internal efforts, we are also developing cooperative relations with third-party IP companies in order to offer more comprehensive solutions to our customers, facilitate system-on-a-chip (SOC) designs and accelerate time-to-market.

### 4. Labor Relations

Focusing on the need to improve TSMC's productivity and competitiveness, we re-engineered our Performance Management & Development (PMD) process in 1998 for all employees. The PMD process aims at maximizing every employee's potential through clear goal-setting, periodic reviews, and defining achievable development plans. All employees went through a training program that emphasized personal accountability.

Responding to less-than-favorable economic and market conditions in 1998, TSMC employees worked closely with management to cut costs and improve productivity. We also made use of the opportunity to cross train our employees, strengthening our work force in preparation for the anticipated recovery.

## 5. Long-term Investments

(As of December 31, 1998)

Unit: NT\$k, except Investment Shares

| Other Investments                   | Business Activities                                      | Investment Costs | Book Value | Investment Shares |           |            |              |                   | Return on Investment     |           | Investment to TSMC |           |
|-------------------------------------|----------------------------------------------------------|------------------|------------|-------------------|-----------|------------|--------------|-------------------|--------------------------|-----------|--------------------|-----------|
|                                     |                                                          |                  |            | Number of Shares  | Share (%) | Net Worth  | Market Value | Accounting Policy | Investment Income (loss) | Dividends | Investment Costs   | Share (%) |
| Taiwan Mask Corp.                   | Mask Making                                              | 32,129           | 32,129     | 5,589,953         | 2.35      | 255,997    | 284,041      | Cost Method       | -                        | 37,211    | -                  | -         |
| TSMC-USA                            | Marketing & Engineering support                          | 25,588           | 178,294    | 1,000,000         | 100.00    | 178,294    | -            | Equity Method     | 42,063                   | -         | -                  | -         |
| TSMC-Europe                         | Marketing & Engineering support                          | 2,960            | 25,077     | 200               | 100.00    | 25,077     | -            | Equity Method     | 1,541                    | -         | -                  | -         |
| TSMC-Japan                          | Marketing & Engineering support                          | 7,440            | 9,287      | 600               | 100.00    | 9,287      | -            | Equity Method     | 2,256                    | -         | -                  | -         |
| Vanguard Int'l Semiconductor Corp.  | IC design & Manufacturing                                | 5,682,367        | 4,723,014  | 521,417,518       | 25.81     | 4,577,814  | 10,011,216   | Equity Method     | (1,400,026)              | -         | -                  | -         |
| TSMC International Investment Ltd.  | Semiconductor related business investment                | 11,045,068       | 11,096,090 | 379,788,244       | 100.00    | 11,096,090 | -            | Equity Method     | (1,356,890)              | -         | -                  | -         |
| Lian Ya Corporation                 | Liquid nitrogen & Nitrogen gas manufacturing & Marketing | 146,250          | 146,250    | 8,745,750         | 11.25     | 135,222    | -            | Cost Method       | -                        | 11,408    | -                  | -         |
| Shin-Etsu Handotai Taiwan Co., Ltd. | Raw wafer R&D, Manufacturing & Marketing                 | 105,000          | 105,000    | 10,500,000        | 7.00      | 67,265     | -            | Cost Method       | -                        | -         | -                  | -         |
| W. K. Technology Fund               | Venture investment and related business                  | 50,000           | 50,000     | 5,000,000         | 4.17      | 55,136     | -            | Cost Method       | -                        | -         | -                  | -         |
| Po Cherng Investment                | Investment business                                      | 100,000          | 100,657    | -                 | 25.00     | 100,657    | -            | Equity Method     | 657                      | -         | 3,405              | 0         |
| Chi Hsin Investment                 | Investment business                                      | 100,000          | 100,659    | -                 | 25.00     | 100,659    | -            | Equity Method     | 659                      | -         | 3,405              | 0         |

| Other Investments               | Business Activities                     | Investment Costs | Book Value | Investment Shares |           |           |              |                   | Return on Investment     |           | Investment to TSMC              |           |
|---------------------------------|-----------------------------------------|------------------|------------|-------------------|-----------|-----------|--------------|-------------------|--------------------------|-----------|---------------------------------|-----------|
|                                 |                                         |                  |            | Number of Shares  | Share (%) | Net Worth | Market Value | Accounting Policy | Investment Income (loss) | Dividends | Investment Costs                | Share (%) |
| Chi Cherng Investment           | Investment business                     | 100,000          | 100,661    | -                 | 25.00     | 100,661   | -            | Equity Method     | 661                      | -         | 51,771                          | 0.01      |
| Hsin Ruey Investment            | Investment business                     | 100,000          | 100,641    | -                 | 25.00     | 100,641   | -            | Equity Method     | 641                      | -         | 3,405                           | 0         |
| Cherng Huei Investment          | Investment business                     | 100,000          | 100,643    | -                 | 25.00     | 100,643   | -            | Equity Method     | 643                      | -         | 3,405                           | 0         |
| Kung Cherng Investment          | Investment business                     | 100,000          | 100,680    | -                 | 25.00     | 100,680   | -            | Equity Method     | 680                      | -         | 50,509                          | 0.01      |
| Hon Tung Venture Capital        | Venture investment and related business | 40,000           | 40,000     | 4,000,000         | 10.00     | 40,177    | -            | Cost Method       | -                        | -         | -                               | -         |
| Taiwan Semiconductor Technology | IC assembly and related business        | 500,000          | 500,000    | 50,000,000        | 18.87     | 498,312   | -            | Cost Method       | -                        | -         | -                               | -         |
| TSMC Partners                   | Investment business                     | 10,350           | 9,653      | 300,000           | 100.00    | 9,653     | -            | Equity Method     | (55)                     | -         | 74,491<br>(US\$2,278k)<br>(ADR) | 0         |
| Crimson Asia Capital            | Asia investment business                | 19,030           | 19,030     | -                 | -         | 18,504    | -            | Cost Method       | -                        | -         | -                               | -         |

## 6. Personnel Growth over the Last Three Years

| Year | Number of Employees |          |         |       | Average Age | Average Years of Service | Percentage by Education |       |       |             |        |        |
|------|---------------------|----------|---------|-------|-------------|--------------------------|-------------------------|-------|-------|-------------|--------|--------|
|      | Direct Labor        | Engineer | Manager | Total |             |                          | Ph.D.                   | MS/MA | BS/BA | High School | Others | Total  |
| 1996 | 1,830               | 1,715    | 572     | 4,117 | 28          | 3.5                      | 1.8%                    | 19.0% | 37.8% | 41.3%       | 0.1%   | 100.0% |
| 1997 | 2,712               | 2,200    | 681     | 5,593 | 28          | 3.3                      | 1.8%                    | 20.0% | 37.6% | 40.5%       | 0.1%   | 100.0% |
| 1998 | 2,711               | 2,467    | 730     | 5,908 | 29          | 3.9                      | 2.2%                    | 22.2% | 37.7% | 37.8%       | 0.1%   | 100.0% |

## 7. Environmental Protection Measures



In 1998, as in past years, TSMC completed several pollution prevention programs that not only reduced emissions but also generated cost-reduction benefits. These programs have led to a reduction in the use of acids, optimization of the use of Perfluorocompounds (PFCs, one kind of gas causing global warming), and off-site recycling of

sulfuric acid. TSMC represented the members of the Taiwan Semiconductor Industry Association (TSIA) at the Global Semiconductor Industry Conference on PFC emissions control, sponsored by the U.S. Environmental Protection Agency (EPA). At the conference, TSMC reported on our company's efforts to reduce the use of PFCs. TSMC also reported on the results of an energy survey to the National Energy Conservation Conference in Taiwan.

To reduce pollutants emitted from vehicles, the Environmental Protection Agency (EPA) of the Republic of China (ROC) has designated the city of Hsin-Chu as a demonstration site for electric scooters. TSMC is working with the ROC EPA to

promote electric scooters, as well as emission monitoring for gas-burning motorcycles. TSMC also cooperated with the ROC EPA to evaluate ISO14001 achievements, and helped the Industrial Technology Research Institute (ITRI) conduct an ISO14001 training program for Asia-Pacific Economic Cooperation (APEC) members.

In 1998 TSMC joined International SEMATECH, which is composed of fifteen well-known semiconductor companies worldwide. International SEMATECH conducts research on leading edge of manufacturing technology, and has also developed very sophisticated programs for environmental protection, safety and health (ESH). The ESH programs conducted in 1998 include PFC reduction, water optimization, energy conservation, and wet bench fire safety. By participating in these programs TSMC has been able to benchmark Taiwan's local ESH efforts with international practices and in an effort to achieve continuous improvement.

## 8. Important Contracts

### [1] Technology Cooperation Agreement

- Term of Agreement: 7/9/1997 - 7/9/2007
- Summary: Under this agreement, TSMC is obliged to pay a technical assistance fee to Philips Electronics N.V. of a certain percentage of net sales for certain products.
- Contracting Party: Philips Electronics N.V.

## **(2) Submicron Technology Licensing Agreement**

- Term of Agreement: 11/20/1990 – 12/31/2000
- Summary: Under this agreement, TSMC is obliged to pay a licensing fee of NT\$129.4 million to the Industrial Technology Research Institute over a five-year period, plus a royalty fee of a certain percentage of net sales for certain products through December 31, 1998. The entire licensing fee had been paid by December 31, 1995.
- Contracting Party: The Industrial Technology Research Institute

## **(3) Building and Equipment Leasing Agreement (FAB I )**

- Term of Agreement: 4/1/1997 – 3/31/2002
- Summary: Under this agreement, TSMC leases certain buildings and equipment from the Ministry of Economic Affairs.
- Contracting Party: Ministry of Economic Affairs

## **(4) Land and Public Facility Leasing Agreement (FAB I)**

- Term of Agreement: 4/1/1997 – 3/31/2002
- Summary: Under this agreement, TSMC leases certain land and public facilities from the Industrial Technology Research Institute.

- Contracting Party: The Industrial Technology Research Institute

## **(5) Option Agreements**

- Term of Agreement: 1995 – 2001
- Summary: Under these agreements, TSMC guarantees a pre-determined capacity for a set number of years to customers in the United States, Europe, and Asia. As of the end of 1998, more than ten companies had signed option agreements with TSMC.
- Contracting Parties: More than 10 companies in the U.S.A., Europe, and Asia.

## **(6) Manufacturing Agreement**

- Term of Agreement: three years, upon commencement of production at WaferTech, LLC
- Summary: Under this agreement, TSMC is obliged for three years, upon commencement of production at WaferTech, LLC, to purchase a minimum of eighty-five percent of calculated installed capacity of WaferTech, LLC. TSMC has the option to purchase up to one hundred percent of the calculated installed capacity of WaferTech, LLC. In the event that TSMC is unable or unwilling to purchase the minimum purchase allocation, TSMC will be obliged to pay compensation to WaferTech, LLC.
- Contracting Party: WaferTech, LLC

## **(7) Purchase Agreement**

- Term of Agreement: three years upon commencement of production at WaferTech, LLC.
- Summary: Under this agreement, TSMC is obliged to supply, and the three customers are obliged to purchase, a certain portion of wafers produced by WaferTech, LLC. In the event that TSMC, or any of the customers, is unable or unwilling to supply or purchase the minimum purchase allocation, the defaulting party will be obliged to pay compensation to the opposite party.
- Contracting Parties: Analog Devices, Inc., Altera Corporation and Integrated Silicon Solutions, Inc.

## **9. Litigation Proceedings**

### **(1) Antidumping Investigation Against SRAMs**

On February 25, 1997, Micron Technology Inc. filed a petition for an antidumping investigation against SRAMs from Korea and Taiwan. Following the U.S. International Trade Commission's final determination in April 1998 that U.S. industry is materially injured by imports from Taiwan, the U.S. Department of Commerce (DOC) announced an antidumping duty order on April 16, 1998. Since TSMC is not granted an individual rate, subject goods manufactured by TSMC will be subject to the "all others" rate of 41.30%. SRAMs account for a very small portion of TSMC's total sales

and TSMC's direct sales to the U.S. are even less. Thus, the impact on TSMC's business is expected to be very limited.

### **(2) Antidumping Investigation Against DRAMs**

On October 22, 1998, Micron Technology Inc. filed a petition for an antidumping investigation against DRAMs from Taiwan. The U.S. International Trade Commission made a preliminary determination in December 1998 that there is a reasonable indication of material injury to U.S. industry by imports from Taiwan. The U.S. Department of Commerce is expected to make a preliminary determination of dumping duty on DRAMs from Taiwan in May, 1999. Since the sales of DRAMs account for a very small portion of TSMC's total sales and TSMC's direct sales to the U.S. are even less, the impact on TSMC's business is expected to be very limited.

## **10. Y2K Readiness Program**

TSMC recognized early on the importance of preparing for the year 2000 and in December 1997 set up the Corporate Y2K Project. The team now includes a Y2K Project Steering Committee, a Core Team and a Corporate Y2K Project Office all working to ensure that our customers' business operations will not be influenced by Year-2000 problems. TSMC's Y2K Team has produced the Y2K White Paper to define accurately Y2K problems and solutions as well as the project's organization. The document includes detailed guidelines under the following headings: Roles and Responsibilities, Methodology and Milestones, Process Flow, Auditing and

Management, Budget Control and Supply Management. The goal of the Y2K Readiness Program is to make TSMC Year-2000-Ready before April 30, 1999.

### **(1) Computerized Level and Influence**

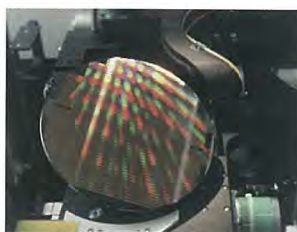
The level of computerization of operations in every department of our company is very high. Recognizing that an abnormal shut down or incorrect calculation by our computer systems could have a significant impact on our mission-critical business, the Y2K Project has a broad mandate to prepare all systems and equipment affecting TSMC. Y2K readiness activities are categorized as follows:

- IT Infrastructure -- Computer and Communication Equipment
- Commercial Software
- In-house Applications
- Manufacturing Equipment
- Facilities
- Supply Chain

Our aim is to solve all related Y2K problems and to ensure that all systems and equipment will process accurately after the rollover to the Year 2000.

### **(2) Project Progress and Budget**

TSMC's step-by-step approach includes awareness, inventory



approximately US\$17 million.

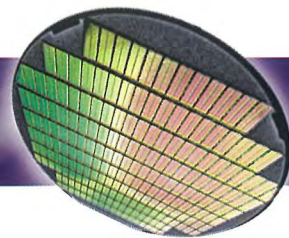
### **(3) Possible Impact**

TSMC gives the Y2K Project first level priority. The president of TSMC chairs the Y2K Steering Committee. TSMC's Corporate Development Vice President is the executive ultimately responsible for the Y2K Project and holds weekly Y2K Project reviews. The Y2K Project Core Team monitors and controls progress in each area. We have mobilized all the resources of TSMC to cooperate with consultants in solving the Year 2000 problem. We also have completed Y2K contingency plans, but fully expect that the impact of Y2K will be negligible and that all TSMC's manufacturing and services will be unaffected.

*TSMC cares about our  
future success as much  
as we do.*



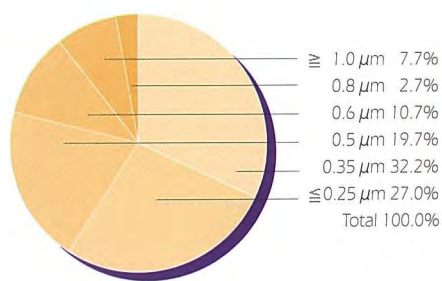
# Trust Our Vision



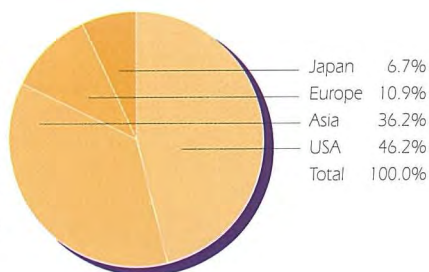
## Business Plans

### 1. Production and Sales Plans for 1999

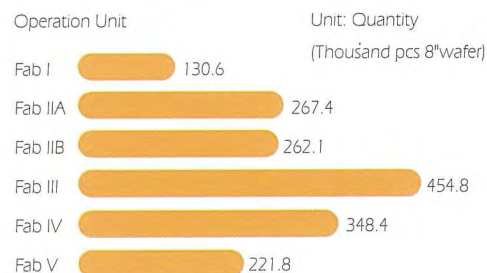
Sales Plan by Technology



Sales Plan by Area



Production Plan



Total: 1,685.1 (Thousand pcs 8" wafer)

### 2. Capital Increase for Expansion Plans in 1999

| Item                         | Amount (NT\$ Million) | Objectives                                                               |
|------------------------------|-----------------------|--------------------------------------------------------------------------|
| Fab VI Project -Construction | 4,620                 | Scheduled to produce 8" wafers by mid-2000                               |
| Fab V                        | 6,930                 | Increase 8" wafer output capacity to 16,000 pcs/month by the end of 1999 |
| Fab IV                       | 6,831                 | Upgrade product mix                                                      |
| Fab III                      | 3,168                 | Upgrade product mix                                                      |
| Replacement and others       | 4,197                 | Maintain technology superiority and competitiveness                      |
| <b>Total</b>                 | <b>525,746</b>        |                                                                          |

Capital expenditures will be funded by internally generated operating cash flow

### 3. Research and Development Plans

#### (1) R&D Investment and Achievements

##### ● R&D Investment

| Year | Amount (NT\$) |
|------|---------------|
| 1996 | 1,493,999     |
| 1997 | 2,505,303     |
| 1998 | 3,246,165     |

##### ● R&D Achievements

TSMC has the largest and the most outstanding semiconductor R&D organization in Taiwan and in the world's dedicated foundry industry. Over the last three years, TSMC's overall R&D investment has increased even more rapidly than revenue growth, reflecting our determination to provide customers with world-class, leading-edge technology. In 1998 alone, TSMC spent over NT\$3.2 billion on R&D. Also in 1998, TSMC won the highest possible honor among the awards for Industrial Technology Advancement presented by the Ministry of Economic Affairs in Taiwan.

In 1998, TSMC obtained 220 US patents and 170 ROC patents, ranking ninth in the world for the acquisition of US patents for IC process technology, and acquiring more patents than any other Taiwan company. This achievement led Taiwan's National Bureau of Standards to award TSMC the Gold Medal Prize at the National Invention Awards.

TSMC R&D leads the IC foundry industry and now matches worldwide IC industry leaders in the development and introduction of low voltage, low power and high performance logic process technology. After the successful transfer and ramp up to mass production of the high

performance 0.25 $\mu$ m logic process, in 1998 TSMC R&D developed and introduced the next advancement, 0.18 $\mu$ m logic technology. TSMC's 0.18 $\mu$ m logic process has the most aggressive design rules in the world, as well as very advanced low voltage, high performance transistors with gate length of less than 0.15 $\mu$ m. This new process technology is capable of supporting microprocessors and graphics chips that operate at speed in excess of 600MHz. TSMC's 0.18 $\mu$ m technology also has the most advanced low-k (low dielectric constant) insulator integrated with conventional AlCu (aluminum-copper) metallization to reduce interconnect RC (resistance/capacitance) delay and dramatically enhance the performance of our customers' products. In addition, TSMC has demonstrated the most advanced copper interconnect process as a fully design-rule-compatible option to our 0.18 $\mu$ m logic technology. TSMC's copper interconnect process has the world's tightest design rules in this generation and is the first from a dedicated foundry.

TSMC has the foundry industry's largest in-house mask fabrication facility. We provide excellent quality and cycle time to support fast prototyping and production. In 1998, our mask technology R&D and in-house mask shop demonstrated advanced optical-proximity-correction (OPC) mask technology as well as phase-shift mask (PSM) technology. Both these techniques are used in our 0.25 $\mu$ m and 0.18 $\mu$ m logic processes and will be the key to developing future generation technologies.

TSMC R&D did pioneering work on embedded memory for rapidly developing system-on-a-chip (SOC) applications. In 1998, we enriched our SOC technology menu with the release of a very dense high-speed embedded SRAM for 0.25 $\mu$ m and 0.18 $\mu$ m generation logic technologies in

microprocessor and graphics applications. We also released 0.35 $\mu$ m embedded DRAM for disk drives and multi-media applications, as well as 0.35 $\mu$ m embedded Flash memory for micro-controllers and wireless applications. These embedded memory processes are supported by a complete set of compilers, design kits, and test support to facilitate customer design procedures and to speed the introduction of SOC products.

In the area of stand-alone memory, TSMC R&D introduced the world's smallest 0.25 $\mu$ m 4T SRAM process last year. An extremely low-standby 4Mb 6T SRAM process was also released for applications that demand low-power. We are currently developing and prototyping future generations of embedded and stand-alone memory processes. Some examples are: 0.15 $\mu$ m and 0.13 $\mu$ m embedded SRAM; 0.18 $\mu$ m high-speed low-power SRAM; 0.25 $\mu$ m and 0.18 $\mu$ m embedded DRAM; 0.25 $\mu$ m and 0.18 $\mu$ m embedded Flash memory, and 0.22 $\mu$ m EEPROM memory processes.

In 1998, TSMC R&D introduced a 0.25 $\mu$ m mixed-signal process with a rich set of modular analog devices and passive components, for example, high-Q metal-insulators-metal capacitors, precision resistors and low threshold devices. They are used in modems, audio, and other mixed-digital-analog SOC, as well as wireless baseband applications. The process will soon be enriched with modular high-Q inductors for RF and wireless applications. Development of advanced next-generation 0.18 $\mu$ m mixed-signal, baseband, and RF technologies is underway to provide a complete set of SOC solutions.

## **(2) Future Developments**

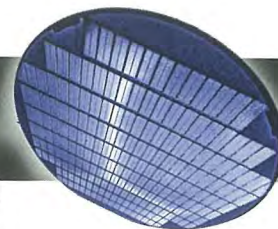
TSMC R&D is committed to being a world leader in IC process technology. Our R&D team has already begun working on future generations of process technology (0.15 $\mu$ m, 0.13 $\mu$ m, and 0.1 $\mu$ m), transistor modules, mask technology, and manufacturing technology for high performance logic, mixed-signal, RF/wireless, and embedded memory applications. In 1999 TSMC will install the first 193nm step-and-scan photolithographic production equipment in Taiwan. This equipment is capable of sub-0.13 $\mu$ m production and 0.1 $\mu$ m research and development. TSMC is still the only Taiwanese member of both the International SEMATECH and the 300mm (I300I) Project. TSMC's membership in these organizations further demonstrates our dedication and strength in R&D and illustrates our track record as the world leader in IC foundry technology.

TSMC is proud to employ the foundry industry's most skilled, most experienced, and most dedicated R&D staff, both in management and engineering positions. Our investment in the most advanced processes, tools and materials, and our commitment to excellence and quality, are second to none. TSMC R&D strives to be the cornerstone of the Virtual Fab for our customers. Our goal is to more than satisfy all of our customers' semiconductor manufacturing requirements by providing the world's best and most cost-effective technology.

*Partnering with TSMC is a  
win-win alliance.*



# Trust Our Fidelity



## *Financial Statements*

All financial information discussed in this Annual Report is derived from the unconsolidated financial statements included herein that were prepared on the basis of generally accepted accounting principles in the Republic of China which differs significantly, in certain respects, from generally accepted accounting principles in the United States ("US GAAP") and certain other countries. Consolidated financial statements are also included herein. TSMC will file an Annual Report on Form 20-F with the United States Securities and Exchange Commission (the "SEC") prior to June 30, 1999 which will include consolidated financial statements that include a reconciliation of certain items to US GAAP, as required by applicable SEC regulations and the listing requirements of the New York Stock Exchange.

## 1. Brief Balance Sheets

Financial analysis from 1994 to 1998

Unit: NT\$K

| Item                        | 1994       | 1995       | 1996       | 1997        | 1998        |
|-----------------------------|------------|------------|------------|-------------|-------------|
| Current assets              | 7,659,444  | 16,070,964 | 16,529,359 | 23,790,795  | 26,378,422  |
| Long-term stock investments | 3,074,147  | 4,989,037  | 12,608,506 | 19,220,371  | 17,537,765  |
| Fixed assets                | 14,986,932 | 26,643,665 | 41,978,952 | 61,697,723  | 73,636,209  |
| Other assets                | 386,580    | 599,369    | 2,018,827  | 3,804,923   | 6,554,817   |
| Current liabilities         |            |            |            |             |             |
| Before distribution         | 2,897,189  | 5,075,481  | 5,357,895  | 10,088,672  | 8,138,796   |
| After distribution          | 3,233,580  | 5,926,696  | 5,926,138  | 10,250,285  | *           |
| Long-term liabilities       | 3,259,206  | 5,556,381  | 5,720,000  | 20,009,357  | 25,025,206  |
| Other liabilities           | 1,119,880  | 4,091,928  | 9,943,809  | 9,001,390   | 6,872,545   |
| Capital stock               | 7,800,000  | 14,390,000 | 26,542,000 | 40,813,000  | 60,471,760  |
| Capital surplus             | 875        | 19,428     | 59,086     | 62,082      | 164,219     |
| Retained earnings           |            |            |            |             |             |
| Before distribution         | 11,029,256 | 19,165,640 | 25,523,456 | 28,641,292  | 24,162,113  |
| After distribution          | 4,102,865  | 6,162,425  | 10,684,213 | 8,820,919   | *           |
| Total Assets                | 26,107,103 | 48,303,035 | 73,135,644 | 108,513,812 | 124,107,213 |
| Total Liabilities           |            |            |            |             |             |
| Before distribution         | 7,276,275  | 14,723,790 | 21,021,704 | 39,099,419  | 40,036,547  |
| After distribution          | 7,612,666  | 15,575,005 | 21,589,947 | 39,261,032  | *           |
| Total Equity                |            |            |            |             |             |
| Before distribution         | 18,830,828 | 33,579,245 | 52,113,940 | 69,414,393  | 84,070,666  |
| After distribution          | 18,494,437 | 32,728,030 | 51,545,697 | 69,252,780  | *           |

\*Subject to change after shareholders' meeting resolution

## 2. Brief Statements of Income

Financial analysis from 1994 to 1998

Unit: NT\$K  
(Except EPS: NT\$)

| Item                   | 1994       | 1995       | 1996       | 1997       | 1998       |
|------------------------|------------|------------|------------|------------|------------|
| Net sales              | 19,336,071 | 28,765,991 | 39,400,179 | 43,935,627 | 50,233,008 |
| Gross profit*          | 10,091,902 | 16,104,950 | 21,979,249 | 21,094,156 | 21,540,943 |
| Income from operations | 8,615,119  | 13,897,006 | 18,235,246 | 15,489,780 | 16,202,245 |
| Interest revenue       | 210,135    | 367,986    | 653,462    | 501,434    | 566,020    |
| Interest expense       | 197,062    | 258,000    | 277,161    | 546,490    | 981,388    |
| Profit before tax      | 8,580,744  | 14,314,528 | 18,972,932 | 15,517,103 | 13,648,622 |
| Net profit             | 8,474,014  | 15,081,273 | 19,400,689 | 17,960,075 | 15,344,203 |
| Earnings per share     | 10.86 **   | 10.48 **   | 7.31 **    | 4.40 **    | 2.54 **    |
|                        | 1.41 ***   | 2.50 ***   | 3.21 ***   | 2.97 ***   | -          |
| Capitalized interest   | 15,868     | 102,926    | 181,168    | 255,054    | 661,414    |

\* Certain accounts of 1994 through 1997 have been reclassified to conform to 1998 classifications

\*\* Based on weighted average shares outstanding in each year

\*\*\* Retroactive adjustment for capitalizations of unappropriated earnings and bonus to employees

### 3. Financial Analysis

Financial analysis from 1994 to 1998

| Item                                     | 1994    | 1995    | 1996    | 1997    | 1998   |
|------------------------------------------|---------|---------|---------|---------|--------|
| Capital Structure Analysis               |         |         |         |         |        |
| Debts ratio (%)                          | 27.87   | 30.48   | 28.74   | 36.03   | 32.26  |
| Long-term fund to fixed assets (%)       | 147.40  | 146.89  | 137.77  | 144.94  | 148.16 |
| Liquidity Analysis                       |         |         |         |         |        |
| Current ratio (%)                        | 264.38  | 316.64  | 308.50  | 235.82  | 324.11 |
| Quick ratio (%)                          | 214.33  | 257.83  | 247.77  | 185.78  | 273.86 |
| Times interest earned (times)            | 41.22   | 40.38   | 42.40   | 20.04   | 8.91   |
| Operating Performance Analysis           |         |         |         |         |        |
| Average collection turnover (times)      | 8.55    | 8.12    | 8.80    | 6.22    | 5.90   |
| Average collection days                  | 42.69   | 44.95   | 41.00   | 58.68   | 61.85  |
| Average inventory turnover (times)*      | 8.01    | 7.73    | 7.24    | 6.12    | 6.82   |
| Average inventory turnover days*         | 45.57   | 47.22   | 50.43   | 59.69   | 53.49  |
| Fixed assets turnover (times)            | 1.29    | 1.08    | 0.94    | 0.71    | 0.68   |
| Total assets turnover (times)            | 0.74    | 0.60    | 0.54    | 0.41    | 0.40   |
| Profitability Analysis                   |         |         |         |         |        |
| Return on total assets (%)               | 41.17   | 41.23   | 32.40   | 20.35   | 14.04  |
| Return ratio on stockholders' equity (%) | 56.62   | 57.55   | 45.28   | 29.56   | 19.99  |
| Operating income to capital stock (%)    | 110.45  | 96.57   | 68.70   | 37.95   | 26.79  |
| Profit before tax to capital stock (%)   | 110.01  | 99.48   | 71.48   | 38.02   | 22.57  |
| Profit after tax to net sales (%)        | 43.82   | 52.43   | 49.24   | 40.88   | 30.55  |
| Net worth per share (NTD)                | 24.14   | 23.34   | 19.63   | 17.01   | 13.90  |
| Earnings per share (NTD)                 | 1.41 ** | 2.50 ** | 3.21 ** | 2.97 ** | 2.54   |
| Dividends per share (NTD)                | 8.00    | 8.00    | 5.00    | 4.50    | ***    |
| Cash dividends (NTD)                     | -       | -       | -       | -       | ***    |
| Stock dividends (NTD)                    | 8.00    | 8.00    | 5.00    | 4.50    | ***    |
| Cash Flow                                |         |         |         |         |        |
| Cash flow ratio (%)                      | 394.12  | 348.45  | 452.74  | 201.55  | 417.00 |
| Cash flow adequacy ratio (%)             | 103.20  | 111.94  | 113.70  | 97.96   | 102.04 |
| Cash flow reinvestment ratio (%)         | 34.34   | 31.94   | 28.21   | 16.28   | 21.65  |
| Leverage                                 |         |         |         |         |        |
| Operating leverage                       | 1.70    | 1.69    | 1.79    | 2.15    | 2.69   |
| Financial leverage                       | 1.02    | 1.02    | 1.02    | 1.04    | 1.06   |

\* Certain accounts of 1994 through 1997 have been reclassified to conform to 1998 classifications

\*\* Retroactive adjustment for capitalizations of unappropriated earnings and bonus to employees

\*\*\* Subject to change after shareholders' meeting resolution

#### 4. Net Worth, Earnings, Dividends and Market Price Per Share

|                                       | 1996          | 1997          | 1998          |
|---------------------------------------|---------------|---------------|---------------|
| Market price per share                |               |               |               |
| Highest market price                  | 106.00        | 173.00        | 173.00        |
| Lowest market price                   | 49.10         | 55.50         | 56.50         |
| Average market price                  | 63.83         | 109.35        | 100.80        |
| Net worth per share                   |               |               |               |
| Before distribution                   | 19.63         | 17.01         | 13.90         |
| After distribution                    | 19.42         | 16.97         | -             |
| Earnings per share                    |               |               |               |
| Weighted average shares               | 2,654,200,000 | 4,081,300,000 | 6,047,176,000 |
| Earnings per share                    | 7.31          | 4.40          | 2.54          |
| Earnings per share <sup>1</sup>       | 3.21          | 2.97          | -             |
| Dividends per share                   |               |               |               |
| Cash dividends                        | -             | -             | *             |
| Stock dividends                       |               |               |               |
| Dividends from retained earnings      | 5.00          | 4.50          | *             |
| Dividends from capital surplus        | -             | -             | *             |
| Return on investment                  |               |               |               |
| Price/Earning ratio <sup>2</sup>      | 8.73          | 24.85         | 39.69         |
| Price/Dividend ratio <sup>3</sup>     | -             | -             | *             |
| Cash dividend yield rate <sup>4</sup> | 0             | 0             | *             |

\*Subject to change after shareholders' meeting resolution

Note 1. Retroactive adjustment for capitalizations of unappropriated earnings and bonus to employees

Note 2. Price/Earning ratio = Average market price/Earnings per share

Note 3. Price/Dividend ratio = Average market price/Cash dividends per share

Note 4. Cash dividend yield rate = Cash dividends per share/Average market price

## 5. Auditors' Opinion from 1994 to 1998

| Year | CPA                    | Audit Opinion                                                                                     |
|------|------------------------|---------------------------------------------------------------------------------------------------|
| 1994 | S.C. Huang, Jerry Tsai | An Unqualified Opinion                                                                            |
| 1995 | S.C. Huang, Edward Way | An Unqualified Opinion, except the adoption of Statement of Financial Accounting Standards No.22. |
| 1996 | S.C. Huang, Edward Way | An Unqualified Opinion                                                                            |
| 1997 | S.C. Huang, Edward Way | An Unqualified Opinion                                                                            |
| 1998 | S.C. Huang, Edward Way | An Unqualified Opinion                                                                            |

12F, No. 156, Sec. 3, Min-Sheng E. Rd., Taipei, Taiwan, R.O.C.  
Tel: 886-2-2545-9988

## 6. Supervisors' Report

The Board of Directors have prepared and submitted to us the Company's 1998 business report, balance sheet, statement of profit and loss, statements of changes in shareholders' equity, statements of cash flows, inventories of major assets and proposal for allocating profit. The CPAs of T.N. SOONG & CO were retained to audit the balance sheet, statement of profit and loss, statements of changes in shareholders' equity, statements of cash flows and inventories of major assets and have submitted a report relating thereto. The above reports, statements and proposal have been further examined as being correct and accurate by the undersigned, the supervisors of Taiwan Semiconductor Manufacturing Co., Ltd. According to Article 219 of the Company Law, we hereby submit this report.

Taiwan Semiconductor Manufacturing Co., Ltd.

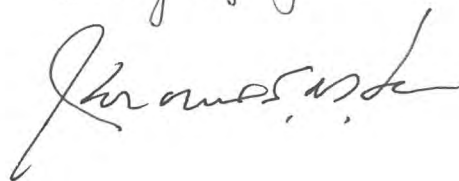
Supervisor E. Th. Ausems



Supervisor Chung-Ying Hu



Supervisor Jerome S. N. Hu



March 4, 1999

## 7. Statement of Internal Control

Taiwan Semiconductor Manufacturing Co., Ltd.  
Statement of Internal Control  
(Translation)

Date: March 2, 1999

TSMC has conducted a self-assessment of internal controls for the period of January 1, 1998 to December 31, 1998, based on TSMC's internal control system. The results are as follows:

1. TSMC acknowledges that the Board of Directors and management personnel are responsible for establishing, performing, and maintaining an internal control system, which has already been established. The purpose of the internal control system is to provide a reasonable assurance for achieving the company's goals: efficient and effective operations (including profit, efficiency and the safeguard of assets, etc.), reliability of financial reports, and compliance with applicable laws and regulations.
2. The internal control system has an inherent constraint. No matter how impeccable the system is, it can only provide a reasonable assurance of achieving the three goals abovementioned. Due to the changes in the environment and changing circumstances, the effectiveness of the internal control system may vary accordingly. However, TSMC's internal control system has self-monitoring functions with which once a shortcoming is found, action will be taken to cure.
3. TSMC evaluates the effectiveness in the design and performance of its internal control system in accordance with the items for evaluating the effectiveness of internal control system as indicated in the Points Governing the Establishment of Internal Control Systems by Public Companies (the "Points") announced by the Securities and Futures Commission of the Ministry of Finance. Based on management control process, the items for assessing the internal control system specified in the Points divide internal control into five components: 1. Control Environment; 2. Risk Assessments; 3. Control Activities; 4. Information and Communication; 5. Monitoring. Each component comprises certain factors. For the said factors please refer to the Points.
4. TSMC has evaluated the effectiveness in the design and performance of its internal control system in accordance with the aforesaid factors.
5. Based upon the results of evaluation abovementioned, TSMC is of the opinion that the design and performance of its internal control, including the efficiency and effectiveness of operations, reliability of financial reports, and compliance with applicable laws and regulations, during the period of January 1, 1998 to December 31, 1998 is effective and provide a reasonable assurance of achieving the abovementioned goals.
6. This Statement of Internal Control will be a prominent feature of TSMC's annual report and prospectus, and will be released to the public. Should any statement herein involve forgery, concealment or any other illegality, Articles 20, 32, 171 and 174 of the Security Transaction Law shall apply.
7. This Statement of Internal Control has been approved by TSMC's Board of Directors at the meeting of March 2, 1999 with 10 directors present at the meeting and 0 director disagreeing with this Statement of Internal Control.

Morris Chang  
Chairman of the Board

F.C. Tseng  
President

Taiwan Semiconductor Manufacturing Company, Ltd.

## 8. Financial Statements & Independent Auditors' Report

We have examined the balance sheets of Taiwan Semiconductor Manufacturing Company Ltd. as of December 31, 1998 and 1997, and the related statements of income, changes in shareholders' equity and cash flows for the years then ended. Our examinations were made in accordance with the regulations governing such examinations and generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the financial statements referred to above present fairly the financial position of Taiwan Semiconductor Manufacturing Company Ltd. as of December 31, 1998 and 1997, and the results of its operations and its cash flows for the years then ended, in conformity with the regulations governing the preparation of financial statements of public companies and generally accepted accounting principles applied on a consistent basis.



January 27, 1999

## BALANCE SHEETS

December 31, 1998 and 1997

(In Thousand New Taiwan Dollars Except Par Value)

|                                                     | 1998                  |            | 1997                  |            |
|-----------------------------------------------------|-----------------------|------------|-----------------------|------------|
| ASSETS                                              | Amount                | %          | Amount                | %          |
| CURRENT ASSETS                                      |                       |            |                       |            |
| Cash and cash equivalents (Notes 2 and 3)           | \$ 8,292,152          | 7          | \$ 2,534,242          | 2          |
| Short-term investments (Notes 2 and 4)              | 5,661,327             | 5          | 4,970,832             | 5          |
| Receivable from related parties (Note 14)           | 234,507               | -          | 503,040               | -          |
| Notes receivable                                    | 34,868                | -          | 234,912               | -          |
| Accounts receivable                                 | 7,936,255             | 6          | 9,634,203             | 9          |
| Allowance for doubtful receivables (Note 2)         | (283,090)             | -          | (293,087)             | -          |
| Allowance for sales returns and allowances (Note 2) | (441,973)             | -          | (535,214)             | -          |
| Inventories (Notes 2 and 5)                         | 3,688,777             | 3          | 4,720,031             | 4          |
| Deferred income tax assets (Notes 2 and 13)         | 406,739               | -          | 667,228               | 1          |
| Prepayments and other (Notes 14 and 17)             | 848,860               | 1          | 1,354,608             | 1          |
| Total Current Assets                                | <u>26,378,422</u>     | <u>22</u>  | <u>23,790,795</u>     | <u>22</u>  |
| LONG-TERM INVESTMENTS (Notes 2 and 6)               | <u>17,537,765</u>     | <u>14</u>  | <u>19,220,371</u>     | <u>18</u>  |
| PROPERTIES (Notes 2, 7 and 15)                      |                       |            |                       |            |
| Cost                                                |                       |            |                       |            |
| Buildings                                           | 20,037,080            | 17         | 18,125,783            | 17         |
| Machinery and equipment                             | 77,290,435            | 62         | 64,525,249            | 59         |
| Office equipment                                    | <u>1,657,981</u>      | <u>1</u>   | <u>791,462</u>        | <u>1</u>   |
| Total cost                                          | 98,985,496            | 80         | 83,442,494            | 77         |
| Accumulated depreciation                            | (40,786,249)          | (33)       | (26,502,409)          | (24)       |
| Prepayments and construction in progress            | <u>15,436,962</u>     | <u>12</u>  | <u>4,757,638</u>      | <u>4</u>   |
| Net Properties                                      | <u>73,636,209</u>     | <u>59</u>  | <u>61,697,723</u>     | <u>57</u>  |
| OTHER ASSETS                                        |                       |            |                       |            |
| Deferred charges - net                              | 711,822               | -          | 641,989               | -          |
| Deferred income tax assets (Notes 2 and 13)         | 5,811,827             | 5          | 3,080,099             | 3          |
| Refundable deposits                                 | 21,918                | -          | 73,585                | -          |
| Miscellaneous                                       | <u>9,250</u>          | <u>-</u>   | <u>9,250</u>          | <u>-</u>   |
| Total Other Assets                                  | <u>6,554,817</u>      | <u>5</u>   | <u>3,804,923</u>      | <u>3</u>   |
| TOTAL ASSETS                                        | <u>\$ 124,107,213</u> | <u>100</u> | <u>\$ 108,513,812</u> | <u>100</u> |

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

|                                                                                                                                                         | 1998                  |            | 1997                  |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------|-----------------------|------------|
| LIABILITIES AND SHAREHOLDERS' EQUITY                                                                                                                    | Amount                | %          | Amount                | %          |
| CURRENT LIABILITIES                                                                                                                                     |                       |            |                       |            |
| Commercial papers payable (Note 8)                                                                                                                      | \$ -                  | -          | \$ 250,000            | -          |
| Payable to related parties (Note 14)                                                                                                                    | 359,097               | -          | 794,313               | 1          |
| Accounts payable                                                                                                                                        | 2,047,871             | 2          | 2,660,146             | 2          |
| Accounts payable - construction and equipment                                                                                                           | 3,181,099             | 3          | 4,965,985             | 5          |
| Income tax payable (Notes 2 and 13)                                                                                                                     | 775,508               | 1          | -                     | -          |
| Current portion of long-term bank loans (Note 9)                                                                                                        | 299,449               | -          | -                     | -          |
| Accrued expenses and other                                                                                                                              | 1,475,772             | 1          | 1,418,228             | 1          |
| Total Current Liabilities                                                                                                                               | 8,138,796             | 7          | 10,088,672            | 9          |
| LONG-TERM BANK LOANS (Notes 7 and 9)                                                                                                                    | 2,393,489             | 2          | 8,025,900             | 7          |
| LONG-TERM BONDS PAYABLE (Note 10)                                                                                                                       | 22,631,717            | 18         | 11,983,457            | 11         |
| ACCRUED PENSION LIABILITIES (Notes 2 and 12)                                                                                                            | 748,720               | -          | 487,705               | 1          |
| GUARANTEE DEPOSITS (Note 16)                                                                                                                            | 6,123,825             | 5          | 8,513,685             | 8          |
| Total Liabilities                                                                                                                                       | 40,036,547            | 32         | 39,099,419            | 36         |
| SHAREHOLDERS' EQUITY                                                                                                                                    |                       |            |                       |            |
| Capital stock, \$10 par value; authorized - 8,500,000 thousand shares; issued - 6,047,176 thousand shares in 1998 and 4,081,300 thousand shares in 1997 | 60,471,760            | 49         | 40,813,000            | 38         |
| Capital surplus                                                                                                                                         | 164,219               | -          | 62,082                | -          |
| Legal reserve                                                                                                                                           | 6,724,240             | 5          | 4,928,532             | 4          |
| Unappropriated earnings                                                                                                                                 | 17,437,873            | 14         | 23,712,760            | 22         |
| Cumulative translation adjustment (Note 2)                                                                                                              | (727,426)             | -          | (101,981)             | -          |
| Total Shareholders' Equity                                                                                                                              | 84,070,666            | 68         | 69,414,393            | 64         |
| TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY                                                                                                              | <u>\$ 124,107,213</u> | <u>100</u> | <u>\$ 108,513,812</u> | <u>100</u> |

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

## STATEMENTS OF INCOME

For the Years Ended December 31, 1998 and 1997  
(In Thousand New Taiwan Dollars, Except Earnings Per Share)

|                                                                                                           | 1998                 |           | 1997                 |           |
|-----------------------------------------------------------------------------------------------------------|----------------------|-----------|----------------------|-----------|
|                                                                                                           | Amount               | %         | Amount               | %         |
| GROSS SALES (Notes 2 and 14)                                                                              | \$ 51,441,572        |           | \$ 44,765,428        |           |
| SALES RETURNS AND ALLOWANCES                                                                              | (1,208,564)          |           | (829,801)            |           |
| NET SALES                                                                                                 | 50,233,008           | 100       | 43,935,627           | 100       |
| COST OF SALES (Note 14)                                                                                   | 28,692,065           | 57        | 22,841,471           | 52        |
| GROSS PROFIT                                                                                              | 21,540,943           | 43        | 21,094,156           | 48        |
| OPERATING EXPENSES (Note 14)                                                                              |                      |           |                      |           |
| General and administrative                                                                                | 1,284,849            | 3         | 1,583,228            | 4         |
| Marketing                                                                                                 | 807,684              | 2         | 1,515,845            | 3         |
| Research and development                                                                                  | 3,246,165            | 6         | 2,505,303            | 6         |
| Total Operating Expenses                                                                                  | 5,338,698            | 11        | 5,604,376            | 13        |
| INCOME FROM OPERATIONS                                                                                    | 16,202,245           | 32        | 15,489,780           | 35        |
| NON-OPERATING INCOME                                                                                      |                      |           |                      |           |
| Interest                                                                                                  | 566,020              | 1         | 501,434              | 1         |
| Gain on disposal of long-term investments                                                                 | 756,522              | 2         | 311,453              | 1         |
| Gain on disposal of properties                                                                            | 3,332                | -         | 3,131                | -         |
| Foreign exchange gain - net (Note 2)                                                                      | 105,509              | -         | -                    | -         |
| Investment income recognized by equity method - net (Notes 2 and 6)                                       | -                    | -         | 17,804               | -         |
| Other                                                                                                     | 63,275               | -         | 23,891               | -         |
| Total Non-Operating Income                                                                                | 1,494,658            | 3         | 857,713              | 2         |
| NON-OPERATING EXPENSES                                                                                    |                      |           |                      |           |
| Interest (Note 7)                                                                                         | 981,388              | 3         | 546,490              | 1         |
| Investment loss recognized by equity method - net (Notes 2 and 6)                                         | 2,707,170            | 5         | -                    | -         |
| Provision for loss on short-term investments                                                              | 121,926              | -         | -                    | -         |
| Issuance costs of bonds                                                                                   | 143,644              | -         | 66,361               | -         |
| Loss on disposal of properties                                                                            | 2,507                | -         | 7,722                | -         |
| Foreign exchange loss - net (Note 2)                                                                      | -                    | -         | 188,884              | 1         |
| Other                                                                                                     | 91,646               | -         | 20,933               | -         |
| Total Non-Operating Expenses                                                                              | 4,048,281            | 8         | 830,390              | 2         |
| INCOME BEFORE INCOME TAX                                                                                  | 13,648,622           | 27        | 15,517,103           | 35        |
| INCOME TAX BENEFIT (Notes 2 and 13)                                                                       | 1,695,581            | 3         | 2,442,972            | 6         |
| NET INCOME                                                                                                | <u>\$ 15,344,203</u> | <u>30</u> | <u>\$ 17,960,075</u> | <u>41</u> |
| EARNINGS PER SHARE                                                                                        |                      |           |                      |           |
| Based on weighted-average shares outstanding of 6,047,176 thousand in 1998 and 4,081,300 thousand in 1997 | <u>\$2.54</u>        |           | <u>\$4.40</u>        |           |
| Based on 6,047,176 thousand shares                                                                        |                      |           | <u>\$2.97</u>        |           |

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

## STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

For the Years Ended December 31, 1998 and 1997

(In Thousand New Taiwan Dollars)

|                                                                        | CAPITAL STOCK ISSUED |                     | CAPITAL SURPLUS (Note 2)         |                                         |             |                  | RETAINED EARNINGS (Note 11) |                            |                     | CUMULATIVE<br>TRANSLATION<br>ADJUSTMENT<br>(Note 2) | TOTAL<br>SHAREHOLDERS'<br>EQUITY |
|------------------------------------------------------------------------|----------------------|---------------------|----------------------------------|-----------------------------------------|-------------|------------------|-----------------------------|----------------------------|---------------------|-----------------------------------------------------|----------------------------------|
|                                                                        | Shares<br>(Thousand) | Amount              | From<br>Long-term<br>Investments | Gain on<br>Disposal<br>of<br>Properties | Donation    | Total            | Legal<br>Reserve            | Unappropriated<br>Earnings | Total               |                                                     |                                  |
| BALANCE, JANUARY 1, 1997                                               | 2,654,200            | \$26,542,000        | \$ -                             | \$59,031                                | \$55        | \$59,086         | \$2,992,429                 | \$22,531,027               | \$25,523,456        | \$ (10,602)                                         | \$52,113,940                     |
| Appropriations of prior year's earnings<br>(Note 11)                   |                      |                     |                                  |                                         |             |                  |                             |                            |                     |                                                     |                                  |
| Legal reserve                                                          | -                    | -                   | -                                | -                                       | -           | -                | 1,936,103                   | (1,936,103)                | -                   | -                                                   | -                                |
| Bonus to employees                                                     |                      |                     |                                  |                                         |             |                  |                             |                            |                     |                                                     |                                  |
| Cash                                                                   | -                    | -                   | -                                | -                                       | -           | -                | -                           | (393,994)                  | (393,994)           | -                                                   | (393,994)                        |
| Stock                                                                  | 100,000              | 1,000,000           | -                                | -                                       | -           | -                | -                           | (1,000,000)                | (1,000,000)         | -                                                   | -                                |
| Stock dividends - 50%                                                  | 1,327,100            | 13,271,000          | -                                | -                                       | -           | -                | -                           | (13,271,000)               | (13,271,000)        | -                                                   | -                                |
| Bonus to directors and supervisors                                     | -                    | -                   | -                                | -                                       | -           | -                | -                           | (174,249)                  | (174,249)           | -                                                   | (174,249)                        |
| Net income in 1997                                                     | -                    | -                   | -                                | -                                       | -           | -                | -                           | 17,960,075                 | 17,960,075          | -                                                   | 17,960,075                       |
| Gain on disposal of properties                                         | -                    | -                   | -                                | 2,996                                   | -           | 2,996            | -                           | (2,996)                    | (2,996)             | -                                                   | -                                |
| Translation adjustment                                                 | -                    | -                   | -                                | -                                       | -           | -                | -                           | -                          | -                   | (91,379)                                            | (91,379)                         |
| BALANCE, DECEMBER 31, 1997                                             | 4,081,300            | 40,813,000          | -                                | 62,027                                  | 55          | 62,082           | 4,928,532                   | 23,712,760                 | 28,641,292          | (101,981)                                           | 69,414,393                       |
| Appropriations of prior year's earnings<br>(Note 11)                   |                      |                     |                                  |                                         |             |                  |                             |                            |                     |                                                     |                                  |
| Legal reserve                                                          | -                    | -                   | -                                | -                                       | -           | -                | 1,795,708                   | (1,795,708)                | -                   | -                                                   | -                                |
| Bonus to employees - Stock                                             | 129,291              | 1,292,910           | -                                | -                                       | -           | -                | -                           | (1,292,910)                | (1,292,910)         | -                                                   | -                                |
| Stock dividends - 45%                                                  | 1,836,585            | 18,365,850          | -                                | -                                       | -           | -                | -                           | (18,365,850)               | (18,365,850)        | -                                                   | -                                |
| Bonus to directors and supervisors                                     | -                    | -                   | -                                | -                                       | -           | -                | -                           | (161,613)                  | (161,613)           | -                                                   | (161,613)                        |
| Net income in 1998                                                     | -                    | -                   | -                                | -                                       | -           | -                | -                           | 15,344,203                 | 15,344,203          | -                                                   | 15,344,203                       |
| Gain on disposal of properties                                         | -                    | -                   | -                                | 3,009                                   | -           | 3,009            | -                           | (3,009)                    | (3,009)             | -                                                   | -                                |
| Adjusting arising from changes in<br>ownership percentage in investees | -                    | -                   | 99,128                           | -                                       | -           | 99,128           | -                           | -                          | -                   | -                                                   | 99,128                           |
| Translation adjustment                                                 | -                    | -                   | -                                | -                                       | -           | -                | -                           | -                          | -                   | (625,445)                                           | (625,445)                        |
| BALANCE, DECEMBER 31, 1998                                             | <u>6,047,176</u>     | <u>\$60,471,760</u> | <u>\$99,128</u>                  | <u>\$65,036</u>                         | <u>\$55</u> | <u>\$164,219</u> | <u>\$6,724,240</u>          | <u>\$17,437,873</u>        | <u>\$24,162,113</u> | <u>\$ (727,426)</u>                                 | <u>\$84,070,666</u>              |

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

## STATEMENTS OF CASH FLOWS

For the Years Ended December 31, 1998 and 1997

(In Thousand New Taiwan Dollars)

|                                                          | 1998                | 1997                |
|----------------------------------------------------------|---------------------|---------------------|
| CASH FLOWS FROM OPERATING ACTIVITIES                     |                     |                     |
| Net income                                               | \$ 15,344,203       | \$ 17,960,075       |
| Depreciation and amortization                            | 14,592,897          | 9,762,544           |
| Deferred income tax                                      | (2,471,239)         | (1,929,064)         |
| Investment loss (income) recognized by equity method-net | 2,707,170           | (17,804)            |
| Gain on disposal of long-term investments                | (756,522)           | (311,453)           |
| Loss (gain) on disposal of properties - net              | (371)               | 9,526               |
| Accretion in redemption value of bonds                   | 875,760             | 433,457             |
| Accrued pension liabilities                              | 261,015             | 158,976             |
| Allowance for doubtful receivables                       | (9,997)             | 137,460             |
| Allowance for sales returns and allowances               | (93,241)            | 80,924              |
| Changes in operating assets and liabilities              |                     |                     |
| Receivable from related parties                          | 268,533             | (151,151)           |
| Notes receivable                                         | 200,044             | (113,736)           |
| Accounts receivable                                      | 1,697,948           | (4,914,412)         |
| Inventories                                              | 1,031,254           | (1,969,495)         |
| Prepayments and other current assets                     | 505,748             | (970,741)           |
| Payable to related parties                               | (435,216)           | 341,215             |
| Accounts payable                                         | (612,275)           | 1,687,186           |
| Income tax payable                                       | 775,508             | (447,780)           |
| Accrued expenses and other current liabilities           | 57,544              | 588,188             |
| Net Cash Provided by Operating Activities                | <u>33,938,763</u>   | <u>20,333,915</u>   |
| CASH FLOWS FROM INVESTING ACTIVITIES                     |                     |                     |
| Increase in short-term investments                       | (690,495)           | (4,970,832)         |
| Increase in long-term investments                        | (1,676,239)         | (5,245,762)         |
| Proceeds from disposal of long-term investments          | 1,466,879           | 341,786             |
| Acquisition of properties                                | (28,066,471)        | (28,020,842)        |
| Proceeds from disposal of properties                     | 3,476               | 38,256              |
| Increase in deferred charges                             | (322,735)           | (607,028)           |
| Decrease in refundable deposits                          | 51,667              | 45,531              |
| Net Cash Used in Investing Activities                    | <u>(29,233,918)</u> | <u>(38,418,891)</u> |

|                                                                                                           | 1998                 | 1997                 |
|-----------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| CASH FLOWS FROM FINANCING ACTIVITIES                                                                      |                      |                      |
| Increase (decrease) in commercial papers payable                                                          | \$ (250,000)         | \$ 250,000           |
| Issuance of bonds                                                                                         | 9,772,500            | 11,550,000           |
| Increase (decrease) in long-term bank loans                                                               | (5,332,962)          | 2,305,900            |
| Decrease in guarantee deposits                                                                            | (2,389,860)          | (305,637)            |
| Increase in payment received in advance - equipment                                                       | -                    | 163,780              |
| Bonus to employees                                                                                        | -                    | (393,994)            |
| Bonus to directors and supervisors                                                                        | (161,613)            | (174,249)            |
| Adjustment for forward contract payable                                                                   | (585,000)            | (1,469,030)          |
| Net Cash Provided by Financing Activities                                                                 | <u>1,053,065</u>     | <u>11,926,770</u>    |
| NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS                                                      | 5,757,910            | (6,158,206)          |
| CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR                                                              | <u>2,534,242</u>     | <u>8,692,448</u>     |
| CASH AND CASH EQUIVALENTS, END OF YEAR                                                                    | <u>\$ 8,292,152</u>  | <u>\$ 2,534,242</u>  |
| SUPPLEMENTAL INFORMATION                                                                                  |                      |                      |
| Interest paid (excluding capitalized amounts)                                                             | <u>\$ 850,661</u>    | <u>\$ 477,643</u>    |
| Income tax paid                                                                                           | <u>\$ 17,457</u>     | <u>\$ -</u>          |
| Noncash investing and financing activities - effect of exchange rate changes on cash and cash equivalents | <u>\$ (150,518)</u>  | <u>\$ 43,774</u>     |
| Current portion of long-term bank loans                                                                   | <u>\$ 299,449</u>    | <u>\$ -</u>          |
| Cash paid for acquisition of properties                                                                   |                      |                      |
| Total acquisition                                                                                         | \$ 26,281,585        | \$ 30,421,300        |
| Accounts payable-construction and equipment                                                               | 1,784,886            | (2,400,458)          |
|                                                                                                           | <u>\$ 28,066,471</u> | <u>\$ 28,020,842</u> |

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

## NOTES TO FINANCIAL STATEMENTS

(Amounts in Thousand New Taiwan Dollars, Unless Specified Otherwise)

### **(1) GENERAL**

The Company is engaged mainly in the a) manufacture, sale, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices, and b) manufacture and design of masks.

The Company's shares are listed and traded on the Taiwan Stock Exchange.

On October 8, 1997, the Company offered shares of stock in the New York Stock Exchange in the form of American Depositary Receipts (ADRs).

### **(2) SIGNIFICANT ACCOUNTING POLICIES**

The Company's significant accounting policies, which conform to generally accepted accounting principles in the Republic of China, are summarized as follows:

#### **Cash equivalents**

Government bonds acquired under repurchase agreements and commercial papers with original maturities of less than three months are classified as cash equivalents.

#### **Short-term investments**

Short-term investments are stated at the lower cost or market value. The costs of investments sold are determined individually.

#### **Allowance for doubtful receivables**

Allowance for doubtful receivables is provided on the basis of a review of the collectibility of individual receivables.

#### **Sales and allowance for sales returns and allowances**

Sales are recognized when products are shipped to customers. Allowances for sales returns and allowances are provided based on experience; such provisions are deducted from sales and the related costs are deducted from cost of sales.

#### **Inventories**

Inventories are stated at the lower of standard cost (adjusted to approximate weighted average cost) or market value. Market value represents net realizable value for finished goods and work in process, and replacement value for raw materials, supplies and spare parts.

#### **Long-term investments**

Investments representing at least 20% of the voting stock of each investee and for which the Company exercises significant influence on the investees are accounted for by equity method. The difference between the investment cost and the proportionate share in the equity of the investee at the date of acquisition is amortized on a straight - line method over five years ; such amortization is recognized as investment income or loss. Changes in ownership percentage of investee accounted for by equity method as a result of not recognizing newly issued shares according to the original percentage of ownership increase or decrease investee equity. Increases or decreases are accounted for as adjustments for paid-in capital and long-term investments.

Other investments are accounted for by cost method.

Investments in listed companies are stated at the lower of cost or market price. When book value of these investments are lower than the carrying value of stock, the reductions from cost are charged to shareholders' equity. When the value appreciates, a reversal of the previous reduction will be written off.

Investments in foreign mutual funds are stated at the lower of cost or fund value. When book value of these investments are lower than the carrying value of fund, the reductions from cost are charged to shareholders' equity. When the value appreciates, a reversal of the previous reduction will be written off.

The costs of investments disposed of are determined by the weighted average method.

### **Properties**

Major additions, renewals and betterment, and interest expense incurred during the construction period are capitalized. Maintenance and repairs are expensed currently.

Depreciation is provided on the straight-line method over estimated service lives which range as follows: buildings - 10 to 20 years; machinery and equipment - 5 to 10 years; office equipment - 3 to 5 years.

Upon sale or disposal of properties, the related cost and accumulated depreciation are removed from the accounts, and any gain or loss is credited or charged to income. Any such gain, less applicable income tax, is transferred to capital surplus at year-end.

### **Pension benefits**

Net periodic pension costs are recorded on the basis of actuarial calculations. Unrecognized net transition obligation is amortized over 25 years.

### **Income tax**

The Company has adopted interperiod tax allocation. Deferred income taxes are recognized for tax effects of deductible temporary differences, unused tax credits, and operating loss carryforwards. Valuation allowance is provided for deferred tax assets that are not certain to be realized.

Income taxes (10%) on undistributed earnings generated in 1998 and onward are recorded as expense in the year when the shareholders have resolved that the earnings shall be retained.

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

### **Derivative financial instruments**

Forward exchange contracts for hedging purposes are recorded at the spot rates as of the contract dates. The foreign-currency amount of each contract multiplied by the difference between the spot rate on the contract date and the contracted forward rate is amortized over the contract period. At year-end, the balances of forward exchange receivables or payables are translated on the basis of prevailing exchange rates and the resulting gains or losses are credited or charged to income.

Gains or losses and discounts or premiums on forward exchange contracts entered into as hedges of foreign investments are recorded as cumulative translation adjustments under shareholders' equity.

Interest rate swap transactions entered into to manage liabilities are accounted for on an accrual basis, in which cash settlement receivable or payable is recorded as an adjustment to interest income or expense.

European option contracts entered into for hedging purposes are not recorded as assets or liabilities on the contract dates as adjustment to the underlying items. Gains or losses upon settlement are credited or charged to income. Premiums received or paid are amortized over each contract period.

### **Foreign-currency transactions**

Foreign-currency transactions, except those involving derivative financial instruments, are recorded in New Taiwan dollars at the rates of exchange in effect when the transactions occur. Gains or losses caused by the application of different foreign exchange rates when cash in foreign currency is converted into New Taiwan dollar, or when foreign-currency receivables and payables are settled, are credited or charged to income in the year of conversion or settlement. At year-end, the balances of foreign-currency assets and liabilities are restated at prevailing exchange rates, and the resulting differences are recorded as follows:

- a. Long-term stock investments accounted for by equity method - as cumulative translation adjustment under shareholders' equity.
- b. Long-term stock investments accounted for by cost method - as translation adjustment (same as above) if the translated New Taiwan dollar amount is lower than cost; otherwise, no adjustment is made.
- c. Other assets and liabilities - credited or charged to current income.

### (3) CASH AND CASH EQUIVALENTS

|                                                       | 1998                | 1997                |
|-------------------------------------------------------|---------------------|---------------------|
| Cash and bank deposits                                | \$ 7,453,517        | \$ 2,189,808        |
| Government bonds acquired under repurchase agreements | 804,564             | -                   |
| Commercial papers                                     | 34,071              | 344,434             |
|                                                       | <u>\$ 8,292,152</u> | <u>\$ 2,534,242</u> |

### (4) SHORT-TERM INVESTMENTS

|                      | 1998                | 1997                |
|----------------------|---------------------|---------------------|
| U.S. Treasury bonds  | \$ 4,625,769        | \$ 4,582,672        |
| Other bonds          | 626,844             | 388,160             |
| Listed Stocks        | 530,640             | -                   |
|                      | 5,783,253           | 4,970,832           |
| Allowance for losses | (121,926)           | -                   |
|                      | <u>\$ 5,661,327</u> | <u>\$ 4,970,832</u> |

### (5) INVENTORIES

|                          | 1998                | 1997                |
|--------------------------|---------------------|---------------------|
| Finished goods           | \$ 467,368          | \$ 521,950          |
| Work in process          | 2,346,837           | 2,539,137           |
| Raw materials            | 371,874             | 1,028,528           |
| Supplies and spare parts | 619,971             | 737,216             |
|                          | 3,806,050           | 4,826,831           |
| Allowance for losses     | (117,273)           | (106,800)           |
|                          | <u>\$ 3,688,777</u> | <u>\$ 4,720,031</u> |

## (6) LONG-TERM INVESTMENTS

|                                      | 1998                 |                | 1997                 |                |
|--------------------------------------|----------------------|----------------|----------------------|----------------|
|                                      | Carrying Value       | % of Ownership | Carrying Value       | % of Ownership |
| Stocks                               |                      |                |                      |                |
| Equity method                        |                      |                |                      |                |
| TSMC International Investment        | \$ 11,096,090        | 100            | \$ 12,489,962        | 100            |
| Vanguard International Semiconductor | 4,723,014            | 26             | 5,697,114            | 27             |
| TSMC - U.S.A.                        | 178,294              | 100            | 141,485              | 100            |
| TSMC - Europe                        | 25,077               | 100            | 22,114               | 100            |
| TSMC - Japan                         | 9,287                | 100            | 6,020                | 100            |
| TSMC Partners                        | 9,653                | 100            | -                    | -              |
| Po Cherng Investment                 | 100,657              | 25             | -                    | -              |
| Chi Hsin Investment                  | 100,659              | 25             | -                    | -              |
| Kung Cherng Investment               | 100,680              | 25             | -                    | -              |
| Chi Cherng Investment                | 100,661              | 25             | -                    | -              |
| Hsin Ruey Investment                 | 100,641              | 25             | -                    | -              |
| Cherng Huei Investment               | 100,643              | 25             | -                    | -              |
|                                      | <u>16,645,356</u>    |                | <u>18,356,695</u>    |                |
| Cost method                          |                      |                |                      |                |
| Taiwan Mask                          | 32,129               | 2              | 57,032               | 4              |
| Taiwan Semiconductor Technology      | 500,000              | 19             | -                    | -              |
| Lian Ya                              | 146,250              | 11             | 146,250              | 11             |
| Shin-Etsu Handotai Taiwan            | 105,000              | 7              | 105,000              | 7              |
| W.K. Technology Fund IV              | 50,000               | 4              | 50,000               | 4              |
| Hon Tung Venture Capital             | 40,000               | 10             | -                    | -              |
| Caesar Technology Inc.               | -                    | -              | 505,394              | 17             |
|                                      | <u>873,379</u>       |                | <u>863,676</u>       |                |
| Fund - at cost                       |                      |                |                      |                |
| Crimson Asia Capital                 | 19,030               | -              | -                    | -              |
|                                      | <u>\$ 17,537,765</u> |                | <u>\$ 19,220,371</u> |                |

Net investment losses and income recognized by equity method in 1998 and 1997 were \$2,707,170 and \$17,804, respectively. The carrying values of investments accounted for by equity method and the related investment income and losses for each years were based on audited financial statements of the investees in the same period, with the exception of TSMC - Japan. TSMC-Japan is not required to issue audited financial statements under ROC regulations, as its current scope of operations is not significant.

Information on the investments accounted for by cost method are as follows:

|                               | 1998       | 1997       |
|-------------------------------|------------|------------|
| Market value of listed stocks | \$ 255,997 | \$ 895,348 |
| Equity in unlisted stocks     | 796,112    | 792,079    |
| Net assets value of fund      | 18,504     | -          |

## (7) PROPERTIES

Accumulated depreciation consists of the following:

|                         | 1998                 | 1997                 |
|-------------------------|----------------------|----------------------|
| Buildings               | \$ 5,475,083         | \$ 3,686,442         |
| Machinery and equipment | 34,390,645           | 22,387,187           |
| Office equipment        | 920,521              | 428,780              |
|                         | <u>\$ 40,786,249</u> | <u>\$ 26,502,409</u> |

The status of the various expansion plans as of December 31, 1998 is as follows:

|                           | Estimated<br>Cost | Accumulated<br>Expenditures | Expected<br>Date of Start<br>Of Operations |
|---------------------------|-------------------|-----------------------------|--------------------------------------------|
| Sixth manufacturing plant | \$ 34,650,000     | \$ 10,069,781               | June, 2000                                 |

Interest expense capitalized in 1998 and 1997 were \$661,414 and \$255,054, respectively.

As of December 31, 1998, properties with an aggregate net book value of about \$6,073,544 are mortgaged as collateral for long-term bank loans.

## (8) COMMERCIAL PAPERS PAYABLE

Commercial papers payable are due in March 1998, bear 8.4% interest, and are guaranteed by financial institutions.

Unused credit lines for short-term loans as of December 31, 1998 aggregate about \$7,232,200.

## (9) LONG-TERM BANK LOANS

|                                                                                     | 1998                | 1997                |
|-------------------------------------------------------------------------------------|---------------------|---------------------|
| New Taiwan dollar loans                                                             |                     |                     |
| Bank acceptances: 1998 -- repayable by December 1999, 6.95% interest;               |                     |                     |
| 1997- repayable by October 2000 (prepaid in September 1998), 8.25%-8.50% interest   | \$ 299,449          | \$ 1,680,000        |
| Commercial papers, repayable by May 2003, 7%~7.08% interest                         | 2,393,489           | -                   |
| U.S. dollar loans (thousands)                                                       |                     |                     |
| US\$156,000, repayable in semi-annual installments from                             |                     |                     |
| June 1997 to December 2001 (prepaid in May 1998), 7.03% interest                    | -                   | 5,148,000           |
| US\$36,300, repayable in October 1999 (prepaid in April 1998), 5.96%-6.56% interest | -                   | 1,197,900           |
|                                                                                     | 2,692,938           | 8,025,900           |
| Current Portion                                                                     | (299,449)           | -                   |
|                                                                                     | <u>\$ 2,393,489</u> | <u>\$ 8,025,900</u> |

Unused credit lines for long-term bank loans as of December 31, 1998 aggregate about \$6,191,010.

## (10) LONG-TERM BONDS PAYABLE

|                                                                                                                     | 1998                 | 1997                 |
|---------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Foreign bonds - US\$350,000, non-interest bearing,<br>repayable together with accretion of \$1,309,217 in July 2002 | \$ 12,631,717        | \$ 11,983,457        |
| Domestic unsecured bonds                                                                                            |                      |                      |
| Repayable in March 2003, 7.71% annual interest<br>payable semi-annually                                             | 4,000,000            | -                    |
| Repayable by November 2003, 7.12% annual<br>interest payable annually                                               | 6,000,000            | -                    |
|                                                                                                                     | <u>\$ 22,631,717</u> | <u>\$ 11,983,457</u> |

The foreign bonds can be converted into common stocks of the Company at a specified price per share (adjustable by a formula) before maturity. The Company may redeem the bonds before maturity when certain conditions are met.

The holders of the bonds of \$6,000,000 and the Company can exercise resale agreements or repurchase agreements, respectively, thirty days before the second and third year after issuance of the bonds.

## (11) SHAREHOLDERS' EQUITY

Under Company Law, capital surplus can only be used to offset a deficit or transferred to capital.

The Company's Articles of Incorporation provide that the following shall be appropriated from the annual net income (less any deficit):

a) 10% legal reserve;

b) Bonus to directors and supervisors and to employees equal to 1% and at least 1% of the remainder, respectively.

These appropriations and the disposition of the remaining net income shall be resolved by the shareholders in the following year and given effect to in the financial statements of that year.

Under the Company Law, the appropriation for legal reserve shall be made until the reserve equals the Company's capital. This reserve may be used to offset a deficit; also, when the reserve has reached 50% of the paid-in capital, up to 50% thereof can be transferred to capital.

Imputation credit is not granted for the appropriation of undistributed earnings prior to 1997. Shareholders can apply the creditable ratio of the stock dividend distribution date to calculate the imputation credit for undistributed earnings after 1997.

The unappropriated retained earnings as of December 31, 1998 consist of:

| Period Earned  | Amount               |
|----------------|----------------------|
| Before FY 1998 | \$ 2,096,679         |
| FY 1998        | 15,341,194           |
|                | <u>\$ 17,437,873</u> |

Under the Integrated Income Tax System which became effective on January 1, 1998, non-corporate shareholders are allowed a tax credit for the income tax paid or payable by the Company on earnings generated in 1998 and onwards. An Imputation Credit Account (ICA) is maintained by the Company for such income tax and the tax credit allocated to each shareholder. The maximum credit available for allocation to each shareholder cannot exceed the balance shown in the ICA on the date of distribution of dividends.

As of January 27, 1999, the creditable taxes aggregated \$22,633, equivalent to 0.15% of the unappropriated earnings in 1998 (this percentage may change depending on the balance of the ICA on the dividend distribution date.)

## (12) PENSION PLAN

The Company has a pension plan for all regular employees, which provides benefits based on length of service and average monthly salary at the time of retirement.

The Company makes monthly contributions, equal to 2% of salaries, to a pension fund, which is administered by the employees pension fund monitoring committee and deposited in the committee's name in the Central Trust of China.

Certain pension information are summarized as follows:

|                                                                           | 1998              | 1997              |
|---------------------------------------------------------------------------|-------------------|-------------------|
| a. Components of pension cost                                             |                   |                   |
| Service cost                                                              | \$ 212,398        | \$ 198,503        |
| Interest cost                                                             | 69,390            | 50,564            |
| Projected return on plan assets                                           | (16,992)          | (12,875)          |
| Amortization of prior period service cost                                 | 8,300             | 8,300             |
|                                                                           | <u>\$ 273,096</u> | <u>\$ 244,492</u> |
| b. Reconciliation of the fund status of the plan and accrued pension cost |                   |                   |
| Benefit obligation                                                        |                   |                   |
| Vested benefit obligation                                                 | \$ 579            | \$ 446            |
| Nonvested benefit obligation                                              | 310,430           | 260,849           |
| Accumulated benefit obligation                                            | 311,009           | 261,295           |
| Additional benefits based on future salaries                              | 817,006           | 729,989           |
| Projected benefit obligation                                              | 1,128,015         | 991,284           |
| Fair value of plan assets                                                 | (287,493)         | (212,851)         |
| Funded status                                                             | 840,522           | 778,433           |
| Unrecognized prior service cost                                           | -                 | -                 |
| Unrecognized net transitional obligation                                  | (182,591)         | (190,891)         |
| Unrecognized net gain (loss)                                              | 91,059            | (55,914)          |
| Additional liability                                                      | -                 | -                 |
| Accrued pension liabilities                                               | <u>\$ 748,990</u> | <u>\$ 531,628</u> |
| c. Actuarial assumptions                                                  |                   |                   |
| Discount rate used in determining present values                          | 7%                | 7%                |
| Future salary increase rate                                               | 6.5%              | 7%                |
| Expected rate of return plan on assets                                    | 7%                | 7%                |
| d. Contributions to pension fund                                          | <u>\$ 51,055</u>  | <u>\$ 44,747</u>  |
| e. Payments from pension fund                                             | <u>\$ -</u>       | <u>\$ -</u>       |

### (13) INCOME TAX BENEFIT (EXPENSE)

|                                                                     | 1998                | 1997                |
|---------------------------------------------------------------------|---------------------|---------------------|
| Income tax currently payable before tax credits                     | \$ (1,297,000)      | \$ (665,000)        |
| Tax credits                                                         | <u>751,492</u>      | <u>665,000</u>      |
| Net change in deferred income tax assets (liabilities) for the year |                     |                     |
| Investment tax credits                                              | 2,590,089           | 2,579,214           |
| Temporary differences                                               | (119,000)           | -                   |
| Valuation allowance                                                 | -                   | (650,150)           |
| Adjustment of prior years' taxes                                    | <u>(230,000)</u>    | <u>513,908</u>      |
|                                                                     | <u>\$ 1,695,581</u> | <u>\$ 2,442,972</u> |

A reconciliation of income tax currently payable before tax credits is shown below:

|                                              | 1998                | 1997              |
|----------------------------------------------|---------------------|-------------------|
| Tax on pretax income at statutory rate (20%) | \$ 2,729,724        | \$ 3,103,421      |
| Permanent differences                        |                     |                   |
| Tax-exempt income                            | (1,413,371)         | (2,432,733)       |
| Others                                       | <u>(19,353)</u>     | <u>(5,688)</u>    |
| Tax currently payable                        | <u>\$ 1,297,000</u> | <u>\$ 665,000</u> |

Deferred income tax assets and liabilities as of December 31, 1998 and 1997 consist of:

|                        | 1998                | 1997                |
|------------------------|---------------------|---------------------|
| Current                |                     |                     |
| Investment tax credits | <u>\$ 406,739</u>   | <u>\$ 667,228</u>   |
| Noncurrent             |                     |                     |
| Investment tax credits | \$ 5,930,827        | \$ 4,450,249        |
| Temporary differences  | 247,844             | -                   |
| Depreciation           | (366,844)           | -                   |
| Valuation allowance    | -                   | (1,370,150)         |
|                        | <u>\$ 5,811,827</u> | <u>\$ 3,080,099</u> |

Unused investment tax credits arising from investments in machinery and equipment, and research and development expenditures as of December 31, 1998 will expire as follows:

| Year of Expiry | Amount       |
|----------------|--------------|
| 2000           | \$ 1,327,847 |
| 2001           | 3,747,512    |
| 2002           | 1,262,207    |

The income from the following projects and services are exempt from income tax:

|                                                                                                                               | Tax-Exemption Period |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Computer-aided design services                                                                                                | 1994 to 1997         |
| Expansion of first and second manufacturing plants                                                                            | 1994 to 1997         |
| Expansion of second manufacturing plant and computer-aided design services, and third manufacturing plant                     | 1996 to 1999         |
| Expansion of first and second manufacturing plants-modules A and B, third manufacturing plant, and fourth manufacturing plant | 1997 to 2000         |

Income tax returns through 1996 have been examined by the tax authorities.

## (14) RELATED PARTY TRANSACTIONS

The Company has business transactions with the following related parties:

- a. Industrial Technology Research Institute (ITRI); its director is the Company's chairman.
- b. Philips Electronics N.V., a major shareholder.
- c. Subsidiaries
  - TSMC International Investment (TSMC - BVI)
  - TSMC - U.S.A.
  - TSMC - Europe
  - TSMC - Japan
- d. Caesar Technology Inc. (CTI), an investee through January 1998
- e. Vanguard International Semiconductor Corporation (VIS), an investee
- f. WaferTech, LLC, an indirect investee of TSMC-BVI
- g. TSMC Technology, an investee of TSMC-BVI

The transactions with the aforementioned parties, except those disclosed in other notes, are summarized as follows:

|                                             | 1998                |            | 1997                |            |
|---------------------------------------------|---------------------|------------|---------------------|------------|
|                                             | Amount              | %          | Amount              | %          |
| <b>For the period</b>                       |                     |            |                     |            |
| <b>Sales</b>                                |                     |            |                     |            |
| ITRI                                        | \$ 173,375          | -          | \$ 240,549          | 1          |
| Philips and its affiliates                  | 3,422,090           | 7          | 3,150,057           | 7          |
| VIS                                         | 65,301              | -          | 27,681              | -          |
| WaferTech                                   | 38,452              | -          | 8,986               | -          |
|                                             | <u>\$ 3,699,218</u> | <u>7</u>   | <u>\$ 3,427,273</u> | <u>8</u>   |
| <b>Rental expense</b>                       |                     |            |                     |            |
| ITRI                                        | \$ 161,477          | 67         | \$ 161,023          | 80         |
| <b>Manufacturing expenses</b>               |                     |            |                     |            |
| Technical assistance fee - Philips          | \$ 637,136          | 100        | \$ 777,144          | 100        |
| Processing charges - CTI                    | \$ -                | -          | \$ 282,675          | 42         |
| <b>Marketing expenses</b>                   |                     |            |                     |            |
| TSMC - U.S.A. (Commissions)                 | \$ 388,513          | 48         | \$ 889,298          | 59         |
| TSMC - U.S.A. (Service charge)              | 78,448              | 10         | 41,101              | 3          |
| TSMC - Europe (Commissions)                 | 51,665              | 6          | 150,964             | 10         |
| TSMC - Japan (Commissions)                  | 25,975              | 3          | -                   | -          |
|                                             | <u>\$ 544,601</u>   | <u>67</u>  | <u>\$ 1,081,363</u> | <u>72</u>  |
| <b>At end of period</b>                     |                     |            |                     |            |
| <b>Receivable</b>                           |                     |            |                     |            |
| ITRI                                        | \$ 30,668           | 13         | \$ 50,781           | 10         |
| Philips and its affiliates                  | 162,750             | 69         | 362,576             | 72         |
| VIS                                         | 7,884               | 3          | 3,532               | 1          |
| TSMC - Japan                                | 17,550              | 8          | -                   | -          |
| WaferTech                                   | 6,405               | 3          | 86,141              | 17         |
| TSMC Technology                             | 9,250               | 4          | -                   | -          |
| TSMC - Europe                               | -                   | -          | 10                  | -          |
|                                             | <u>\$ 234,507</u>   | <u>100</u> | <u>\$ 503,040</u>   | <u>100</u> |
| <b>Prepayments and other current assets</b> |                     |            |                     |            |
| Prepaid rental - ITRI                       | \$ 42,462           | 9          | \$ 42,277           | 2          |
| <b>Payable</b>                              |                     |            |                     |            |
| Philips and its affiliates                  | \$ 155,086          | 43         | \$ 199,725          | 25         |
| TSMC - U.S.A.                               | 60,746              | 17         | 503,505             | 63         |
| TSMC - Europe                               | 10,713              | 3          | 88,903              | 12         |
| TSMC - Japan                                | 9,603               | 3          | -                   | -          |
| WaferTech                                   | 122,949             | 34         | -                   | -          |
| CTI                                         | -                   | -          | 2,180               | -          |
|                                             | <u>\$ 359,097</u>   | <u>100</u> | <u>\$ 794,313</u>   | <u>100</u> |

Sales to related parties are based on normal selling prices and collection terms. Processing charges are also based on normal rates and payment terms.

## **(15) LONG-TERM OPERATING LEASES**

The Company leases the land, building and certain machinery and equipment of its first manufacturing plant from ITRI under agreements which will expire in March 2002, at annual rentals and other charges aggregating \$169,848. The agreements are renewable upon expiration.

The Company leases the land for sites of its second through tenth manufacturing plants from the Science-Based Industrial Park Administration under agreements which will expire on various dates from March 2008 to April 2018 with annual rentals aggregating \$42,149. The agreements are also renewable upon expiration.

Future annual minimum rentals under the aforementioned leases are as follows:

| Year      | Amount              |
|-----------|---------------------|
| 1999      | \$ 211,997          |
| 2000      | 211,997             |
| 2001      | 211,997             |
| 2002      | 84,611              |
| 2003      | 42,149              |
| 2004-2018 | 354,188             |
|           | <u>\$ 1,116,939</u> |

## **(16) COMMITMENTS AS OF DECEMBER 31, 1998**

- a. Under a technical cooperation agreement with Philips, as amended on May 12, 1997, the Company shall pay technical assistance fee at a percentage of net sales of certain products, net of specified deductions. The agreement shall remain in force up to July 9, 2007 and thereafter automatically renewed for successive periods of three years. Under the amendment agreement, the fee is subject to reduction by the amounts the Company pays to any third party for settling any licensing/infringement issue after the first five-year period of the amendment agreement, provided that the fee after reduction will not be below a certain percentage of the net selling price.
- b. Subject to certain equity ownership and notice requirements, Philips and its affiliates can avail each year up to 30% of the Company's production capacity.
- c. Under a submicron technology license agreement with ITRI, the Company shall pay license fees of \$129,400 (including 5% value-added tax) to ITRI plus royalty fee at an agreed percentage of net sales of certain products through December 31, 1998. As of December 31, 1995, the Company has paid the entire license fee.
- d. Under a technical cooperation agreement with ITRI, the Company shall reserve and allocate up to 35% of its production capacity, for use by the Ministry of Economic Affairs (MOEA) or any other party as designated by the MOEA.
- e. Under a manufacturing agreement, the Company shall buy at least 85% of the calculated installed capacity of the wafer-fabrication plant ( "WaferTech, LLC" ) constructed by TSMC Development, Inc. for three years upon the start of production. If the Company is unable or unwilling to buy the minimum purchase allocation, it shall compensate TSMC Development, Inc. at the full price of the products less certain costs. Later, TSMC Development, Inc. transferred its rights under the agreement to WaferTech, LLC.
- f. Under a purchase agreement with three customers, the Company shall supply them with, and the three customers shall buy, a certain portion of wafers produced by WaferTech, LLC. for three years. If the Company or any of the customers is unable or unwilling to supply or buy the minimum purchase allocation, the defaulting party shall compensate the other party at the full price of the products, less certain costs.
- g. Under several foundry agreements, the Company shall reserve certain production capacity for certain major customers from whom guarantee deposits of US\$189,058 thousand had been received as of December 31, 1998.
- h. On February 27, 1998, the Tax Bureau assessed the Company additional income taxes of about \$230,000 for 1994 and 1995, arising from contention by the Bureau that the Company's first manufacturing plant was not a science-based industry under the Science-Based Industrial Park Regulations. The Company is contesting the assessment, but it has made a provision for the tax.

## (17) DERIVATIVE FINANCIAL INSTRUMENTS

The Company entered into derivative financial instrument transactions in 1998 and 1997 to hedge foreign-currency denominated receivables or payables, and interest rate fluctuations. The strategy is to hedge most of the market price risks. Certain information on these contracts are as follows:

a. Contract amounts and fair value of outstanding forward exchange contracts as of December 31, 1998 and 1997:

| 1998        | Currency | Contract<br>Amount<br>(Thousands) | Fair Value    | Maturity          | Maturity<br>Amount |
|-------------|----------|-----------------------------------|---------------|-------------------|--------------------|
| Buy         | US\$     | US\$ 111,000                      | \$ 3,574,885  | Jan. 1999         | \$ 3,580,421       |
| Sell        | US\$     | US\$ 40,000                       | \$ 1,296,959  | Jan. to Feb. 1999 | \$ 1,262,120       |
| <b>1997</b> |          |                                   |               |                   |                    |
| Buy         | US\$     | US\$ 690,000                      | \$ 23,195,820 | Jan. to Dec. 1998 | \$ 22,418,570      |
| Sell        | US\$     | US\$ 470,000                      | \$ 15,872,710 | Jan. to Dec. 1998 | \$ 15,256,960      |

As of December 31, 1998 and 1997, receivables from forward exchange contracts (other current assets) aggregate about \$21,572 and \$375,106, respectively. Net exchange gains for 1998 and 1997 were \$336,807 and \$1,962,920, respectively.

The net assets or liabilities hedged by the above forward exchange contracts are as follows:

|                         | (Thousand)   |              |
|-------------------------|--------------|--------------|
|                         | 1998         | 1997         |
| Accounts receivable     | US\$ 206,926 | US\$ 236,831 |
| Guarantee deposits      | 189,058      | -            |
| Accounts payable        | 66,397       | 138,331      |
| Long-term bonds payable | -            | 363,135      |
| Long-term investments   | -            | 389,645      |
| Long-term loans         | -            | 156,000      |

b. Interest rate swaps

The Company has entered into interest rate swap transactions to hedge exposure to rising interest rates associated with certain floating rate for long-term bank loans. Total interest expense for 1998 amounts to \$13,367. These transactions are summarized as follows:

| Contract Date  | Period                         | Amount       |
|----------------|--------------------------------|--------------|
| April 28, 1998 | May 21, 1998 to May 21, 2003   | \$ 2,000,000 |
| April 29, 1998 | May 21, 1998 to May 21, 2003   | 1,000,000    |
| June 26, 1998  | June 26, 1998 to June 26, 2003 | 1,000,000    |
| June 26, 1998  | July 6, 1998 to July 6, 2003   | 1,000,000    |

c. European options

The Company has entered into foreign currency option contracts to hedge risks of exchange rate fluctuations on receipts of U.S. dollars from export sales.

As of December 31, 1998, all options contracts have been settled. Premium revenue from these contracts aggregated \$8,280.

The Company did not enter into any option contract in 1997.

d. Transaction risk

1) Credit risk: The banks with which the Company has entered into the above contracts are reputable and, therefore, the Company is not expected to be exposed to significant credit risks.

2) Market price risk: All derivative financial instruments are for hedging receivables or payables denominated in foreign currencies, and interest rate fluctuations. Gains or losses from forward exchange contracts are likely to be offset by gains or losses from receivables and payables. Interest rate risks are also controlled as the expected cost of capital is fixed. Thus, market price risks from exchange rate and interest rate fluctuations are minimal.

e. Liquidity and cash flow : The purpose of forward exchange contracts is to limit the Company's exposure to loss resulting from adverse fluctuations in assets and liabilities denominated in foreign currency. Interest rate swap transactions result in adjustments for interest only. Therefore, no significant extra cash requirement is expected.

f. Fair value of financial instruments:

|                                                  | December 31, 1998 |              | December 31, 1997 |              |
|--------------------------------------------------|-------------------|--------------|-------------------|--------------|
|                                                  | Amount            | Fair Value   | Amount            | Fair Value   |
| Non-derivative financial instruments             |                   |              |                   |              |
| <u>Assets</u>                                    |                   |              |                   |              |
| Cash and cash equivalents                        | \$ 8,292,152      | \$ 8,292,152 | \$ 2,534,242      | \$ 2,534,242 |
| Short-term investments                           | 5,661,327         | 5,691,566    | 4,970,832         | 4,982,339    |
| Receivable from related parties                  | 234,507           | 234,507      | 503,040           | 503,040      |
| Accounts and notes receivable                    | 7,971,123         | 7,971,123    | 9,869,115         | 9,869,115    |
| <u>Liabilities</u>                               |                   |              |                   |              |
| Payable to related parties                       | 359,097           | 359,097      | 794,313           | 794,313      |
| Accounts payable                                 | 2,047,871         | 2,047,871    | 2,660,146         | 2,660,146    |
| Accounts payable -construction and equipment     | 3,181,099         | 3,181,099    | 4,965,985         | 4,965,985    |
| Long-term bank loans (including current portion) | 2,692,938         | 2,692,938    | 8,025,900         | 8,025,900    |
| Long-term bonds payable                          | 22,631,717        | 21,948,204   | 11,983,457        | 11,311,440   |
| Derivative financial instruments                 |                   |              |                   |              |
| Forward exchange contracts (buy)                 | 3,590,850         | 3,574,885    | 22,770,000        | 23,195,820   |
| Forward exchange contracts (sell)                | 1,294,000         | 1,296,959    | 15,510,000        | 15,872,710   |
| Interest rate swaps                              | 7,423             | 7,423        | -                 | -            |

Fair values of financial instruments were determined as follows:

- 1) Short-term financial instruments -- book values.
- 2) Short-term investments -- market values.
- 3) Long-term liabilities are forecasted cash flows discounted at present value. Discount rates are interest rates of similar long-term liabilities. Long-term bonds payable are discounted at present values. Fair values of other long-term liabilities are their book values as they use floating interest rates.
- 4) Derivative financial instruments -- based on outright forward rates and interest rate in each contract.

## **(18) SEGMENT FINANCIAL INFORMATION**

### **a. Export sales**

|           | 1998                 | 1997                 |
|-----------|----------------------|----------------------|
| Area      |                      |                      |
| U.S.A.    | \$ 26,438,864        | \$ 18,987,227        |
| Europe    | 3,595,809            | 3,594,183            |
| Singapore | 3,463,638            | 5,000,890            |
| Japan     | 2,520,463            | 4,730,973            |
| Other     | 3,683,252            | 683,147              |
|           | <u>\$ 39,702,026</u> | <u>\$ 32,996,420</u> |

### **b. No single customer accounts for more than 10% of total sales.**

## 9. Review and Analysis of Financial Position and Operating Results

### (1) Liquidity Analysis

| Item          | December 31<br>1998 | December 31<br>1997 | Unit: NT\$K<br>Change% |
|---------------|---------------------|---------------------|------------------------|
| Current ratio | 324.11%             | 235.82%             | 37.44%                 |
| Quick ratio   | 273.86%             | 185.78%             | 47.41%                 |

### (2) Analysis of Operating Result

| Item                                            | 1998          | 1997          | Change Amount | Unit: NT\$K<br>Change% |
|-------------------------------------------------|---------------|---------------|---------------|------------------------|
| GROSS SALES                                     | \$ 51,441,572 | \$ 44,765,428 | 6,676,144     | 14.91%                 |
| SALES RETURNS AND ALLOWANCES                    | (1,208,564)   | (829,801)     | (378,763)     | 45.65%                 |
| NET SALES                                       | 50,233,008    | 43,935,627    | 6,297,381     | 14.33%                 |
| COST OF SALES                                   | 28,692,065    | 22,841,471    | 5,850,594     | 25.61%                 |
| GROSS PROFIT                                    | 21,540,943    | 21,094,156    | 446,787       | 2.12%                  |
| OPERATING EXPENSES                              | 5,338,698     | 5,604,376     | (265,678)     | (4.74%)                |
| INCOME FROM OPERATIONS                          | 16,202,245    | 15,489,780    | 712,465       | 4.60%                  |
| NON-OPERATING INCOME                            |               |               |               |                        |
| Interest                                        | 566,020       | 501,434       | 64,586        | 12.88%                 |
| Investment income recognized by equity method   | -             | 17,804        | (17,804)      | (100.00%)              |
| Gain on disposal of long-term stock investments | 756,522       | 311,453       | 445,069       | 142.90%                |
| Gain on disposal of properties                  | 3,332         | 3,131         | 201           | 6.42%                  |
| Foreign exchange gain - net                     | 105,509       | -             | 105,509       | -                      |
| Other                                           | 63,275        | 23,891        | 39,384        | 164.85%                |
| Total Non-Operating Income                      | 1,494,658     | 857,713       | 636,945       | 74.26%                 |
| NON-OPERATING EXPENSES                          |               |               |               |                        |
| Interest                                        | 981,388       | 546,490       | 434,898       | 79.58%                 |
| Investment loss recognized by equity method-net | 2,707,170     | -             | 2,707,170     | -                      |
| Provision for loss on short-term investments    | 121,926       | -             | 121,926       | -                      |
| Loss on disposal of properties                  | 2,507         | 7,722         | (5,215)       | (67.53%)               |
| Foreign exchange loss - net                     | -             | 188,884       | (188,884)     | (100.00%)              |
| Issuance costs of bonds                         | 143,644       | 66,361        | 77,283        | 116.46%                |
| Other                                           | 91,646        | 20,933        | 70,713        | 337.81%                |
| Total Non-Operating Expenses                    | 4,048,281     | 830,390       | 3,217,891     | 387.52%                |
| INCOME BEFORE INCOME TAX                        | 13,648,622    | 15,517,103    | (1,868,481)   | (12.04%)               |
| INCOME TAX BENEFIT                              | 1,695,581     | 2,442,972     | (747,391)     | (30.59%)               |
| NET INCOME                                      | 15,344,203    | 17,960,075    | (2,615,872)   | (14.56%)               |

## 10. Consolidated Financial Statements

### CONSOLIDATED BALANCE SHEETS

December 31, 1998 and 1997

(In Thousand New Taiwan Dollars, Except Par Value)

|                                            | 1998                  |            | 1997                  |            |
|--------------------------------------------|-----------------------|------------|-----------------------|------------|
|                                            | Amount                | %          | Amount                | %          |
| <b>ASSETS</b>                              |                       |            |                       |            |
| <b>CURRENT ASSETS</b>                      |                       |            |                       |            |
| Cash and cash equivalents                  | \$ 9,679,273          | 7          | \$ 12,816,004         | 10         |
| Short-term investments                     | 5,906,339             | 4          | 5,046,150             | 4          |
| Receivable from related parties            | 201,301               | -          | 416,889               | -          |
| Notes receivable                           | 34,868                | -          | 234,912               | -          |
| Accounts receivable                        | 7,940,062             | 6          | 9,478,009             | 8          |
| Allowance for doubtful receivables         | (283,090)             | -          | (293,087)             | -          |
| Allowance for sales returns and allowances | (441,973)             | -          | (535,214)             | -          |
| Inventories                                | 4,056,508             | 3          | 4,876,292             | 4          |
| Deferred income tax assets                 | 411,350               | -          | 816,788               | 1          |
| Prepayments and other                      | 1,035,862             | 1          | 1,463,931             | 1          |
| Total Current Assets                       | <u>28,540,500</u>     | <u>21</u>  | <u>34,320,674</u>     | <u>28</u>  |
| <b>LONG-TERM INVESTMENTS</b>               | <u>6,659,117</u>      | <u>5</u>   | <u>7,162,460</u>      | <u>6</u>   |
| <b>PROPERTIES</b>                          |                       |            |                       |            |
| Cost                                       |                       |            |                       |            |
| Land                                       | 807,087               | -          | 253,652               | -          |
| Buildings                                  | 27,010,514            | 19         | 18,125,783            | 14         |
| Machinery and equipment                    | 88,466,784            | 63         | 64,525,249            | 52         |
| Office equipment                           | <u>2,312,238</u>      | <u>2</u>   | <u>962,776</u>        | <u>1</u>   |
| Total cost                                 | 118,596,623           | 84         | 83,867,460            | 67         |
| Accumulated depreciation                   | (41,489,543)          | (29)       | (26,552,281)          | (21)       |
| Prepayments and construction in progress   | <u>21,594,489</u>     | <u>15</u>  | <u>21,789,463</u>     | <u>17</u>  |
| Net Properties                             | <u>98,701,569</u>     | <u>70</u>  | <u>79,104,642</u>     | <u>63</u>  |
| <b>OTHER ASSETS</b>                        |                       |            |                       |            |
| Deferred charges - net                     | 773,637               | -          | 641,989               | 1          |
| Deferred income tax assets                 | 6,039,395             | 4          | 3,276,063             | 2          |
| Refundable deposits                        | 23,755                | -          | 73,585                | -          |
| Miscellaneous                              | <u>23,509</u>         | <u>-</u>   | <u>22,734</u>         | <u>-</u>   |
| Total Other Assets                         | <u>6,860,296</u>      | <u>4</u>   | <u>4,014,371</u>      | <u>3</u>   |
| <b>TOTAL ASSETS</b>                        | <u>\$ 140,761,482</u> | <u>100</u> | <u>\$ 124,602,147</u> | <u>100</u> |

| LIABILITIES AND SHAREHOLDERS' EQUITY                                                                                                                      | 1998                  |            | 1997                  |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------|-----------------------|------------|
|                                                                                                                                                           | Amount                | %          | Amount                | %          |
| CURRENT LIABILITIES                                                                                                                                       |                       |            |                       |            |
| Commercial papers payable                                                                                                                                 | \$ -                  | -          | \$ 250,000            | -          |
| Payable to related parties                                                                                                                                | 155,086               | -          | 201,905               | -          |
| Accounts payable                                                                                                                                          | 2,176,023             | 2          | 3,136,944             | 3          |
| Accounts payable - construction and equipment                                                                                                             | 3,601,832             | 3          | 10,099,466            | 8          |
| Income tax payable                                                                                                                                        | 777,424               | -          | 3,367                 | -          |
| Current portion of long term bank loans                                                                                                                   | 299,449               | -          | -                     | -          |
| Accrued expenses and other                                                                                                                                | 1,773,804             | 1          | 1,639,640             | 1          |
| Total Current Liabilities                                                                                                                                 | 8,783,618             | 6          | 15,331,322            | 12         |
| LONG-TERM BANK LOANS                                                                                                                                      | 8,620,864             | 6          | 8,025,900             | 6          |
| LONG-TERM BONDS PAYABLE                                                                                                                                   | 22,631,717            | 17         | 11,983,457            | 10         |
| ACCRUED PENSION LIABILITIES                                                                                                                               | 750,222               | -          | 489,117               | -          |
| OTHER LIABILITIES                                                                                                                                         |                       |            |                       |            |
| Guarantee deposits                                                                                                                                        | 6,123,825             | 4          | 8,516,482             | 7          |
| Others                                                                                                                                                    | 79,689                | -          | -                     | -          |
| MINORITY INTEREST IN SUBSIDIARIES                                                                                                                         | 9,700,881             | 7          | 10,841,476            | 9          |
| Total Liabilities                                                                                                                                         | 56,690,816            | 40         | 55,187,754            | 44         |
| SHAREHOLDERS' EQUITY                                                                                                                                      |                       |            |                       |            |
| Capital stock, \$10 par value; authorized-8,500,000<br>thousand shares, issued-6,047,176 thousand<br>shares in 1998 and 4,081,300 thousand shares in 1997 | 60,471,760            | 43         | 40,813,000            | 33         |
| Capital surplus                                                                                                                                           | 164,219               | -          | 62,082                | -          |
| Legal reserve                                                                                                                                             | 6,724,240             | 5          | 4,928,532             | 4          |
| Unappropriated earnings                                                                                                                                   | 17,437,873            | 12         | 23,712,760            | 19         |
| Cumulative translation adjustment                                                                                                                         | (727,426)             | -          | (101,981)             | -          |
| Total Shareholders' Equity                                                                                                                                | 84,070,666            | 60         | 69,414,393            | 56         |
| TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY                                                                                                                | <u>\$ 140,761,482</u> | <u>100</u> | <u>\$ 124,602,147</u> | <u>100</u> |

## CONSOLIDATED STATEMENTS OF INCOME

For the Years Ended December 31, 1998 and 1997  
(In Thousand New Taiwan Dollars, Except Earnings Per Share)

|                                                           | 1998                 |           | 1997                 |           |
|-----------------------------------------------------------|----------------------|-----------|----------------------|-----------|
|                                                           | Amount               | %         | Amount               | %         |
| GROSS SALES                                               | \$ 51,645,934        |           | \$ 44,756,442        |           |
| SALES RETURNS AND ALLOWANCES                              | (1,223,521)          |           | (829,801)            |           |
| NET SALES                                                 | 50,422,413           | 100       | 43,926,641           | 100       |
| COST OF SALES                                             | 31,077,743           | 62        | 22,841,471           | 52        |
| GROSS PROFIT                                              | 19,344,670           | 38        | 21,085,170           | 48        |
| OPERATING EXPENSES                                        |                      |           |                      |           |
| General and administrative                                | 1,555,927            | 3         | 2,194,186            | 5         |
| Marketing                                                 | 735,216              | 2         | 1,457,281            | 3         |
| Research and development                                  | 3,246,165            | 6         | 2,505,303            | 6         |
| Total Operating Expenses                                  | 5,537,308            | 11        | 6,156,770            | 14        |
| INCOME FROM OPERATIONS                                    | 13,807,362           | 27        | 14,928,400           | 34        |
| NON-OPERATING INCOME                                      |                      |           |                      |           |
| Interest                                                  | 704,928              | 1         | 954,748              | 2         |
| Gain on sale of long-term investments                     | 781,647              | 2         | 310,561              | 1         |
| Gain on disposal of properties                            | 3,332                | -         | 3,131                | -         |
| Foreign exchange gain - net                               | 105,509              | -         | -                    | -         |
| Other                                                     | 63,348               | -         | 26,376               | -         |
| Total Non-Operating Income                                | 1,658,764            | 3         | 1,294,816            | 3         |
| NON-OPERATING EXPENSES                                    |                      |           |                      |           |
| Interest                                                  | 1,026,936            | 2         | 546,591              | 1         |
| Investment loss recognized by equity method               | 1,400,026            | 3         | 64,440               | -         |
| Provision for loss on short-term investments              | 121,926              | -         | -                    | -         |
| Issuance costs of bonds                                   | 143,644              | -         | 66,361               | -         |
| Loss on disposal of properties                            | 4,421                | -         | 7,722                | -         |
| Foreign exchange loss-net                                 | -                    | -         | 188,884              | 1         |
| Other                                                     | 105,430              | -         | 20,932               | -         |
| Total Non-Operating Expenses                              | 2,802,383            | 5         | 894,930              | 2         |
| INCOME BEFORE INCOME TAX                                  | 12,663,743           | 25        | 15,328,286           | 35        |
| INCOME TAX BENEFIT                                        | 1,664,852            | 3         | 2,558,516            | 6         |
| INCOME BEFORE MINORITY INTEREST                           | 14,328,595           | 28        | 17,886,802           | 41        |
| MINORITY INTEREST IN LOSS OF SUBSIDIARIES                 | 1,015,608            | 2         | 73,273               | -         |
| NET INCOME                                                | <u>\$ 15,344,203</u> | <u>30</u> | <u>\$ 17,960,075</u> | <u>41</u> |
| EARNINGS PER SHARE                                        |                      |           |                      |           |
| Based on weighted-average shares outstanding of           |                      |           |                      |           |
| 6,047,176 thousand in 1998 and 4,081,300 thousand in 1997 | <u>\$ 2.54</u>       |           | <u>\$ 4.40</u>       |           |
| Based on 6,047,176 thousand shares                        |                      |           | <u>\$ 2.97</u>       |           |

TAIWAN SEMICONDUCTOR MANUFACTURING  
COMPANY, LTD.



Morris Chang, Chairman



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