## FORM 10-Q

## (MARK ONE)

[X] QUARTERLY REPORT PURSUANT TO SECTION 13 OR $15(\mathrm{~d})$ OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended March 31, 1999
or
[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from $\qquad$ to $\qquad$

Commission file number 0-23621

MKS INSTRUMENTS, INC.
(Exact name of registrant as specified in its charter)

| Massachusetts | 04-2277512 |
| :---: | :---: |
| (State or other jurisdiction of incorporation or organization) | (I.R.S. Employer Identification No.) |
| Six Shattuck Road, Andover, Massachusetts | 01810 |
| (Address of principal executive offices) | (Zip Code) |
| Registrant's telephone number, including area code (978) | -2350 |

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or $15(\mathrm{~d})$ of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes [ ] No [X].

Number of shares outstanding of the issuer's common stock as of May 11, 1999: 24,430,407

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## ITEM 1. FINANCIAL STATEMENTS

MKS INSTRUMENTS, INC.<br>CONSOLIDATED BALANCE SHEETS<br>(in thousands, except share data)

| March 31, | December 31, |
| :---: | :---: |
| 1999 | 1998 |
| -------- | ---------- |
| (Unaudited) |  |

## ASSETS

| Current assets: |  |  |
| :---: | :---: | :---: |
| Cash and cash equivalents | \$ 11,959 | \$11,188 |
| Marketable equity securities | 660 | 538 |
| Trade accounts receivable, net | 24,764 | 20,674 |
| Inventories | 24,289 | 24,464 |
| Deferred tax asset | 718 | 698 |
| Other current assets | 965 | 971 |
| Total current assets | 63,355 | 58,533 |
| Property, plant and equipment, net | 31,825 | 32,725 |
| Other assets | 5,166 | 4,974 |
| Total assets | \$100,346 | \$96,232 |
| LIABILITIES AND STOCKHOLDERS' EQUITY |  |  |
| Current liabilities: |  |  |
| Short-term borrowings | \$ 9,382 | \$ 9,687 |
| Current portion of long-term debt | 2,040 | 2,058 |
| Current portion of capital lease obligations | 1,033 | 1,074 |
| Accounts payable | 5,796 | 3,677 |
| Accrued compensation | 4,564 | 3,985 |
| Other accrued expenses | 5,152 | 5,280 |
| Income taxes payable | 1,436 | 1,279 |
| Total current liabilities | 29,403 | 27,040 |
| Long-term debt | 11,365 | 12,042 |
| Long-term portion of capital lease obligations | 1,533 | 1,744 |
| Deferred tax liability | 96 | 117 |
| Other liabilities | 442 | 463 |
| Stockholders' equity: |  |  |
| Preferred Stock, $\$ 0.01$ par value, $2,000,000$ shares authorized, none issued and outstanding ...... | -- | -- |
| Common Stock, no par value, 50,000,000 shares authorized 18,055,407 and 18,053,167 issued and outstanding at | 113 | 113 |
| Additional paid-in capital ........................... | 48 | 48 |
| Retained earnings | 55,608 | 52,479 |
| Accumulated other comprehensive income | 1,738 | 2,186 |
| Total stockholders' equity | 57,507 | 54,826 |
| Total liabilities and stockholders' equity | \$100,346 | \$96,232 |


|  | Three Months Ended March 31, |  |
| :---: | :---: | :---: |
|  | 1999 | 1998 |
| Net sales | \$37,910 | \$46,163 |
| Cost of sales | 22,557 | 26,757 |
| Gross profit | 15,353 | 19,406 |
| Research and development | 2,955 | 3,794 |
| Selling, general and administrative | 8,857 | 10,112 |
| Income from operations | 3,541 | 5,500 |
| Interest expense | 338 | 400 |
| Interest income | 96 | 25 |
| Other income (expense), net | 168 | (281) |
| Income before income taxes | 3,467 | 4,844 |
| Provision for income taxes | 338 | 565 |
| Net income | \$ 3,129 | \$ 4,279 |
| Historical net income per share: |  |  |
| Basic | \$ 0.17 | \$ 0.24 |
| Diluted | \$ 0.16 | \$ 0.23 |
| Historical weighted average common shares outstanding: |  |  |
| Basic | 18,054 | 18,053 |
| Diluted | 19,402 | 18,751 |
| Pro forma data: |  |  |
| Historical income before income taxes | \$ 3,467 | \$ 4,844 |
| Pro forma provision for income taxes assuming $C$ corporation tax ............................. | 1,317 | 1,841 |
| Pro forma net income | \$ 2,150 | \$ 3,003 |
| Pro forma net income per share: |  |  |
| Basic | \$ 0.12 | \$ 0.17 |
| Diluted | \$ 0.11 | \$ 0.16 |
| Pro forma weighted average common shares outstanding: |  |  |
| Basic . | 18,054 | 18,053 |
| Diluted | 18,890 | 18,557 |

MKS INSTRUMENTS, INC. CONSOLIDATED STATEMENTS OF CASH FLOWS<br>(in thousands)<br>(Unaudited)

In

1) BASIS OF PRESENTATION

The interim financial data as of March 31, 1999 and for the three months ended March 31, 1999 and 1998 is unaudited; however, in the opinion of MKS Instruments, Inc. (the "Company"), the interim data includes all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of the results for the interim periods. The unaudited financial statements presented herein have been prepared in accordance with the instructions to Form $10-Q$ and do not include all the information and note disclosures required by generally accepted accounting principles. The financial statements should be read in conjunction with the December 31, 1998 audited financial statements and notes thereto.
2) NEW ACCOUNTING PRONOUNCEMENTS

In June, 1998, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards (SFAS) No. 133, "Accounting for Derivative Instruments and Hedging Activities." SFAS No. 133 requires that all derivative instruments be recorded on the balance sheet at their fair value. Changes in the fair value of derivatives are recorded each period in current earnings or other comprehensive income, depending on whether a derivative is designated as part of a hedge transaction and, if it is, the type of hedge transaction. The Company adopted the provisions of SFAS No. 133 effective April 1, 1999. The impact of adopting SFAS No. 133 was not material to the Company's financial position or results of operations.
3) USE OF ESTIMATES

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the dates of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Actual results could differ from those estimates.
4) HISTORICAL AND PRO FORMA NET INCOME PER SHARE

Historical net income per share is not meaningful because of the Company's conversion from an $S$ corporation to a Corporation in April, 1999 upon the closing of its initial public offering. Historical net income has been adjusted for the pro forma provision for income taxes calculated assuming the Company was subject to income taxation as a Corporation, at a pro forma rate of $38 \%$.

The following is a reconciliation of basic to diluted pro forma and historical net income per share:


MKS INSTRUMENTS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - (Continued) (Tables in thousands, except per share data)

For purposes of computing diluted earnings per share, weighted average common share equivalents do not include stock options with an exercise price greater than the average market price of the common shares during the period. Options to purchase 24,000 and 0 shares of common stock were outstanding during the three months ended March 31, 1999 and 1998, respectively, but were not included in the calculation of diluted net income per common share because the option price was greater than the average market price of the common shares during the period.

## 5) INVENTORIES

Inventories are stated at the lower of cost or market. Cost is determined on the first-in, first-out method. Inventories consist of the following:

|  | $\begin{gathered} \text { March } 3= \\ 1999 \end{gathered}$ | $\begin{gathered} \text { December } \\ 1998 \end{gathered}$ |
| :---: | :---: | :---: |
| Raw material | \$ 7,057 | \$ 7,544 |
| Work in process | 6,252 | 5,718 |
| Finished goods | 10,980 | 11,202 |
|  | \$24,289 | \$24,464 |

[^0]|  | Three Months Ended March 31, |  |
| :---: | :---: | :---: |
|  | 1999 | 1998 |
| Net income | \$3,129 | \$4,279 |
| Other comprehensive income: |  |  |
| Foreign currency translation adjustment | (567) | (176) |
| Unrealized gain on investments | 119 | 236 |
| Other comprehensive income | (448) | 60 |
| Total comprehensive income | \$2,681 | \$4,339 |

## MKS INSTRUMENTS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - (Continued) (Tables in thousands, except per share data)
7) SEGMENT INFORMATION AND SIGNIFICANT CUSTOMER

Segment Information for the three months ended March 31, 1999 and 1998:


The Company had one customer comprising $20 \%$ and $22 \%$ of net sales for the three months ended March 31, 1999 and 1998, respectively.
8) SUBSEQUENT EVENTS

On April 5, 1999 the Company closed the initial public offering of its Common Stock. In connection with this offering and the exercise of an over-allotment option by the underwriters, the Company sold 6,375,000 shares of Common Stock at a price of $\$ 14.00$ per share. The net proceeds to the Company were approximately $\$ 82,000,000$. Offering costs were approximately $\$ 1,000,000$.

Upon the closing of the offering, the Company's status as an $S$ corporation for tax purposes was terminated, and the Company became a C corporation for tax purposes.

On April 5, 1999 the Company distributed $\$ 40,000,000$, which is the estimated amount of the Company's undistributed S Corporation earnings as of the day prior to the closing of the offering.

MKS INSTRUMENTS, INC. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This Quarterly Report on Form 10-Q contains a number of statements including, without limitation, statements relating to MKS's beliefs, expectations and plans which are forward-looking statements, as are statements that certain actions, conditions or circumstances will continue. Such statements are based upon management's current expectations and are subject to a number of factors and uncertainties. Information contained in these forward-looking statements is inherently uncertain and actual performance and results may differ materially due to many important factors. See "Factors That May Affect Future Results" for factors that could cause actual results to differ materially from any forward-looking statements made by MKS.

MKS's net sales have fluctuated over the past several quarters primarily due to the decline in the semiconductor capital equipment market and the semiconductor device market in 1998. MKS's net sales declined in each of the first three quarters of 1998. In response to the decline, MKS implemented a comprehensive cost containment program that included manufacturing outsourcing, expense reductions, and the elimination of some temporary and contract positions. Worldwide staffing levels were decreased from 1,195 at the end of 1997 to 821 at the end of 1998. As a result of these actions, MKS maintained quarterly profitability despite lower net sales.

In the first quarter of 1999 , MKS's net sales increased sequentially for the second consecutive quarter. Net sales increased $23 \%$ as compared to the fourth quarter of 1998. The increase was primarily due to increased sales to companies in the semiconductor industry.

The results of operations for the three months ending March 31, 1999 as compared to the three months ending March 31,1998 were significantly impacted by the decline in the semiconductor capital equipment market in 1998, and the cost containment program implemented by MKS as a result of the decline. The following table sets forth for the periods indicated the percentage of total net sales of certain line items included in MKS's consolidated statement of income data.

|  | Three Months Ended March 31, |  |
| :---: | :---: | :---: |
|  | 1999 | 1998 |
| Net sales | 100.0\% | $100.0 \%$ |
| Cost of sales | 59.5 | 58.0 |
| Gross profit | 40.5 | 42.0 |
| Research and development | 7.8 | 8.2 |
| Selling, general and administrative | 23.4 | 21.9 |
| Income from operations | 9.3 | 11.9 |
| Interest expense, net | 0.6 | 0.8 |
| Other income (expense), net | 0.4 | (0.6) |
| Income before income taxes | 9.1 | 10.5 |
| Provision for income taxes | 0.8 | 1.2 |
| Net income | 8.3\% | 9.3\% |
| Pro form data: |  |  |
| Historical income before income taxes | 9.1\% | $10.5 \%$ |
| Pro forma provision for income taxes | 3.4 | 4.0 |
| Pro forma net income | 5.7\% | $6.5 \%$ |

Three Months Ended March 31, 1999 Compared to Three Months Ended March 31, 1998
Net Sales. Net sales decreased $17.9 \%$ to $\$ 37.9$ million for the three months ended March 31, 1999 from $\$ 46.2$ million for the three months ended March 31, 1998. International net sales were approximately $\$ 11.8$ million for the three months ended March 31,1999 or $31.1 \%$ of net sales and $\$ 12.6$ million for the
three months ended March 31,1998 or $27.4 \%$ of net sales. The decrease in net sales was primarily due to decreased sales volume of MKS's existing products in the United States caused by the downturn the semiconductor capital equipment market experienced in 1998.

Gross Profit. Gross profit as a percentage of net sales decreased to 40.5\% for the three months ended March 31, 1999 from $42.0 \%$ for the three months ended March 31, 1998. The change was primarily due to manufacturing overhead costs being a higher percentage of net sales due to lower sales volume for the three months ended March 31, 1999.

Research and Development. Research and development expenses decreased $22.1 \%$ to $\$ 3.0$ million or $7.8 \%$ of net sales for the three months ended March 31, 1999 from $\$ 3.8$ million or $8.2 \%$ of net sales for the three months ended March 31, 1998. The decrease was due to reduced compensation expense resulting from the reduction in personnel during 1998.

Selling, General and Administrative. Selling, general and administrative expenses decreased $12.4 \%$ to $\$ 8.9$ million or $23.4 \%$ of net sales for the three months ended March 31, 1999 from $\$ 10.1$ million or $21.9 \%$ of net sales for the three months ended March 31, 1998. The decrease was due to a decrease in compensation expense resulting from the reduction in personnel during 1998 and reduced incentive compensation.

Interest Expense, Net. Net interest expense decreased to $\$ 0.2$ million for the three months ended March 31, 1999 from $\$ 0.4$ million for the three months ended March 31, 1998 primarily due to lower debt outstanding during the first quarter of 1999, and higher cash balances in the first quarter of 1999.

Other Income (Expense), Net. Other income of $\$ 0.2$ million for the three months ended March 31, 1999 primarily represents gains from foreign exchange contracts which did not qualify for hedge accounting. Other expense of $\$ 0.3$ million for the three months ended March 31,1998 represents $\$ 0.7$ million of costs associated with MKS's planned initial public offering in early 1998 which was postponed, offset by foreign exchange translation gains on intercompany payables.

Effective April 1, 1999 MKS adopted Statement of Financial Accounting Standards (SFAS) No. 133, "Accounting for Derivative Instruments and Hedging Activities." SFAS No. 133 requires that all derivative instruments be recorded on the balance sheet at their fair value. Changes in the fair value of derivatives are recorded each period in current earnings or other comprehensive income, depending on whether a derivative is designated as part of a hedge transaction and, if it is, the type of hedge transaction. The adoption of SFAS No. 133 did not have a material impact on MKS's financial position or results of operations. The derivative instruments currently held by MKS, which include forward exchange contracts, local currency purchased options, and an interest rate swap, qualify for hedge accounting under SFAS No. 133, and changes in their fair value will be recorded as a component of other comprehensive income until the hedged transaction occurs.

Pro Forma Provision for Income Taxes. Prior to the closing of its initial public offering in April, 1999 MKS was treated as an $S$ Corporation for tax purposes. As an S Corporation, MKS was not subject to federal, and certain state, income taxes. Upon the closing of its initial public offering on April 5, 1999, MKS's status as an $S$ Corporation was terminated and it became subject to taxes as a Corporation. The pro forma provision for income taxes reflects the estimated tax expense MKS would have incurred had it been subject to federal and state income taxes as a Corporation. The pro forma provision reflects a pro forma tax rate of $38 \%$, which differs from the federal statutory rate due primarily to the effects of state and foreign taxes and certain tax credits.

MKS has financed its operations and capital requirements through a combination of cash provided by operations, long-term real estate financing, capital lease financing and short-term lines of credit.

Operations provided cash of $\$ 3.2$ million for the three months ended March 31, 1999 primarily impacted by net income, depreciation and changes in the levels of accounts payable and accounts receivable. Investing activities utilized cash of $\$ 1.1$ million for the three months ended March 31, 1999 primarily for the purchase of property and equipment. Financing activities utilized cash of $\$ 1.0$ million primarily for the repayment of debt.

Working capital was $\$ 34.0$ million as of March 31, 1999. MKS has a combined $\$ 30.0$ million line of credit with two banks, expiring December 31, 1999, all of which is available.

On April 5, 1999 the Company closed the initial public offering of its Common Stock. In connection with this offering and the exercise of an over-allotment option by the underwriters, the Company sold 6,375,000 shares of Common Stock at a price of $\$ 14.00$ per share. The net proceeds to the Company were approximately $\$ 82,000,000$ and were received in the second quarter of 1999 . Offering costs were approximately $\$ 1,000,000$.

On April 5, 1999 MKS distributed $\$ 40,000,000$, which is the estimated amount of its undistributed $S$ Corporation earnings as of the day prior to the closing of the offering.

MKS believes that the net proceeds from its initial public offering, together with the cash anticipated to be generated from operations and funds available from existing credit facilities, will be sufficient to satisfy its estimated working capital and planned capital expenditure requirements through at least the next 24 months.

## RECENTLY ISSUED ACCOUNTING PRONOUNCEMENTS

See Note 2 of Notes to Consolidated Financial Statements for a discussion of the impact of recently issued accounting pronouncements.

## YEAR 2000 COMPLIANCE

The Year 2000 problem stems from the fact that many currently installed computer systems include software and hardware products that are unable to distinguish 21 st century dates from those in the 20 th century. As a result, computer software and/or hardware used by many companies and governmental agencies may need to be upgraded to comply with Year 2000 requirements or risk system failure or miscalculations causing disruptions to normal business activities.

State of Readiness

MKS designed and began implementation of a multi-phase Year 2000 project which consists of:

* assessment of the corporate systems and operations including both information technology and non-information technology that could be affected by the Year 2000 problem
* remediation of non-compliant systems and components
* testing of systems and components following remediation

MKS, under the guidance of its Information Technology Steering Committee, has focused its Year 2000 review on four areas:

* internal computer software and hardware
* product compliance
* facilities and manufacturing equipment
* third-party compliance

Internal Computer Software and Hardware. MKS uses information technology for its internal infrastructure, which consists of its main enterprise systems which include the systems used, in part, for purchase orders, invoicing, shipping and accounting, and individual workstations, including personal computers, and its network systems.

Because MKS's business and manufacturing systems, such as its main enterprise systems, are essential to its business, financial condition and results of operations, MKS began its assessment of these systems prior to its other non-critical information technology systems. MKS began its assessment in the fall of 1997, and in November 1997, MKS developed a remediation plan for all identified noncompliant business and manufacturing systems. This remediation plan was implemented in January 1998. By July 1998, MKS had installed new systems or upgraded existing systems. Based upon post-implementation testing and review, management believes that all business and manufacturing systems within its manufacturing operations are Year 2000 compliant.

One of MKS's international subsidiaries is currently undergoing conversion of its business systems in order to become Year 2000 compliant. Management believes that these systems will be operational during the third quarter of 1999. This phase of the Year 2000 project is currently on schedule.

MKS's personal computer based systems were assessed in early 1998. MKS believes that all non-compliant hardware and software was identified by March 1998, at which time it made a list prioritizing databases to be remedied. Critical databases were identified and were scheduled for remediation prior to other databases. Remediation plans to convert the databases were initiated in November 1998. MKS anticipates that it will complete its critical and non-critical conversions by June 1999. This phase of the Year 2000 project is currently on schedule.

Product Compliance. Throughout 1998, MKS assessed and addressed the Year 2000 compliance of its products. This assessment resulted in the identification of MKS's products that were compliant and non-compliant. The substantial majority of MKS's products were deemed to be compliant.

The date related functions of all non-compliant products, other than certain residual gas analysis products, are believed by MKS to be non-critical in that such noncompliance would not affect the independent performance of the product; would not cause the MKS product to cease operating on any particular date; and independently would not pose a safety risk. MKS believes that Year 2000 problems associated with non-compliant residual gas analysis products will also be non-critical. However, these products contain components of other manufacturers and cannot be tested and therefore it is possible that such products could cause unanticipated performance problems. The non-compliant features of our other products primarily relate to non-essential functions such as date displays. MKS made available to its customers a list which describes Year 2000 readiness of its products. This phase of the Year 2000 project is currently on schedule.

Facilities and Manufacturing Equipment. Some aspects of MKS's facilities and manufacturing equipment may include embedded technology, such as microcontrollers. The Year 2000 problem could cause a system failure or miscalculation in such facilities or manufacturing equipment which could disrupt MKS's operations. Affected areas include security systems, elevator controls, voice mail and phone systems, clean room environmental controls, numerically controlled production machinery and computer based production equipment. MKS organized a team of experienced managers in November 1998 to assess the potential problems in these areas. An assessment of all facilities and manufacturing equipment was conducted through December 1998, and a remediation plan was developed in January 1999. MKS anticipates completion of all corrective actions by June 1999 with testing and review of corrected items to occur in the summer of 1999. This phase of the Year 2000 project is currently on schedule.

Third-Party Compliance. MKS has relationships with third-parties including customers and vendors and suppliers of goods, services and computer interfaces. The failure of such persons to implement and execute Year 2000 compliance measures in a timely manner, if at all, could, among other things:

* adversely affect MKS's ability to obtain components in a timely manner
* Cause a reduction in the quality of components obtained by MKS
* cause a reduction, delay or cancellation of customer orders received by MKS or a delay in payments by its customers for products shipped
* result in the loss of services that would be necessary for MKS to operate in the normal course of business

MKS assessed which of these third-party goods, services and interfaces were critical to its operations and developed and mailed a standard survey to each third-party deemed critical in January 1998. By March 1998, MKS had reviewed most responses received. To date, the responses received indicate that the third-parties are either in the process of developing remediation plans, or are compliant. MKS continued its assessment through March 1999 and began conducting reviews at that time. A remediation plan is expected to be in place by June 1999 with all critical third-parties achieving satisfactory compliance by August 1999. This phase of the Year 2000 project is currently on schedule.

## Costs

MKS's costs to date associated with assessment, remediation and testing activities concerning the Year 2000 problem have been approximately $\$ 1.7$ million. MKS estimates that an additional $\$ 1.3$ million, the major portion of which will be capitalized and expensed over the life of the assets, will be required to complete the replacement or modification of its facilities, manufacturing equipment, computer software and products and to address the noncompliance of key third-parties. MKS has funded and will continue to fund these activities principally through cash provided by operations and existing leasing lines of credit. It is not possible for MKS to completely estimate the costs incurred in its remediation effort as many of its employees have focused and will continue to focus significant efforts in evaluating MKS's Year 2000 state of readiness and in remediating problems that have arisen, and will continue to arise, from such evaluation.

To date, MKS has not formulated contingency plans related to the failure of its or a third-party's Year 2000 remediation efforts. Contingency plans for the failure to implement compliance procedures have not been completed because it is the intent of MKS to complete all required modifications and to test modifications thoroughly prior to December 31, 1999. However, as discussed above, MKS is engaged in ongoing assessment, remediation and testing activities and the internal results as well as the responses received from third-parties will be taken into account in determining the nature and extent of any contingency plans if necessary.

## FACTORS THAT MAY AFFECT FUTURE RESULTS

## Cyclicality of the Semiconductor Industry

MKS estimates that approximately $60 \%$ of its sales during 1997 and 1998 were to semiconductor capital equipment manufacturers and semiconductor device manufacturers, and MKS expects that sales to such customers will continue to account for a substantial majority of its sales. MKS's business depends substantially upon the capital expenditures of semiconductor device manufacturers, which in turn depend upon the demand for semiconductors and other products utilizing semiconductors. Periodic reductions in demand for the products manufactured by semiconductor capital equipment manufacturers and semiconductor device manufacturers may adversely affect MKS's business, financial condition and results of operations. Historically, the semiconductor market has been highly cyclical and has experienced periods of overcapacity, resulting in significantly reduced demand for capital equipment. For example, in 1996 and 1998 the semiconductor industry experienced a significant decline, which caused a number of MKS's customers to reduce their orders. MKS cannot be certain that the current semiconductor downturn that began in 1998 will not continue. A further decline in the level of orders as a result of any future downturn or slowdown in the semiconductor industry could have a material adverse effect on MKS's business, financial condition and results of operations.

## Asian Economies

The financial markets in Asia, one of MKS's principal international markets, have experienced significant turbulence. Turbulence in the Asian markets can adversely affect MKS's net sales and results of operations. MKS's direct net sales to customers in Asian markets have been approximately $17 \%$ to $18 \%$ of total net sales for the past three years. MKS's sales include both direct sales to the semiconductor industry in Asia, as well as to semiconductor capital equipment manufacturers that derive a significant portion of their revenue from sales to the Asian semiconductor industry. Turbulence in the Asian markets began to adversely affect the semiconductor device manufacturers and semiconductor capital equipment manufacturers in the fourth quarter of 1997 and continues to adversely affect them.

## Fluctuations in Operating Results

A substantial portion of MKS's shipments occur shortly after an order is received and therefore MKS operates with a low level of backlog. As a consequence of the just-in-time nature of shipments and the low level of backlog, a decrease in demand for MKS's products from one or more customers could occur with limited advance notice and could have a material adverse effect on MKS's results of operations in any particular period.

A significant percentage of MKS's expenses are relatively fixed and based in part on expectations of future net sales. The inability to adjust spending quickly enough to compensate for any shortfall would magnify the adverse impact of a shortfall in net sales on MKS's results of operations. Factors that could cause fluctuations in MKS's net sales include:

* The timing of the receipt of orders from major customers
* Shipment delays
* Disruption in sources of supply
* Seasonal variations of capital spending by customers
* Production capacity constraints
* Specific features requested by customers

For example, MKS was in the process of increasing production capacity when the semiconductor capital equipment market began to experience a significant downturn in 1996. This downturn had a material adverse effect on MKS's operating results in the second half of 1996 and the first half of 1997. After an increase in business in the latter half of 1997, the market experienced another downturn in 1998, which had a material adverse effect on MKS's 1998 and first quarter 1999 operating results. As a result of the factors discussed above, it is likely that MKS will in the future experience quarterly or annual fluctuations and that, in one or more future quarters, MKS's operating results will fall below the expectations of public market analysts or investors. In any such event, the price of MKS's common stock could decline significantly.

Customer Concentration
MKS's five largest customers in 1996, 1997 and 1998 accounted for approximately $26 \%$, $32 \%$ and $24 \%$, respectively, of its net sales. The loss of a major customer or any reduction in orders by such customers, including reductions due to market or competitive conditions, would likely have a material adverse effect on MKS's business, financial condition and results of operations. During 1998, one customer, Applied Materials, Inc., accounted for approximately $16 \%$ of MKS's net sales. While the Company has entered into a purchase contract with Applied Materials, Inc. that expires in 2000 unless it is extended by mutual agreement, none of MKS's significant customers, including Applied Materials, Inc., has entered into an agreement requiring it to purchase any minimum quantity of MKS's products. The demand for MKS's products from its semiconductor capital equipment customers depends in part on orders received by them from their semiconductor device manufacturer customers.

Attempts to lessen the adverse effect of any loss or reduction through the rapid addition of new customers could be difficult because prospective customers typically require lengthy qualification periods prior to placing volume orders with a new supplier. The Company's future success will continue to depend upon:

* MKS's ability to maintain relationships with existing key customers
* MKS's ability to attract new customers
* the success of MKS's customers in creating demand for their capital equipment products which incorporate MKS's products


## Competition

The markets for MKS's products are highly competitive. The Company's competitive success often depends upon factors outside of its control. For example, in some cases, particularly with respect to mass flow controllers, semiconductor device manufacturers may direct semiconductor capital equipment manufacturers to use a specified supplier's product in their equipment. Accordingly, for such products, the Company's success will depend in part on its ability to have semiconductor device manufacturers specify that the Company's
products be used at their semiconductor fabrication facilities. In addition, MKS may encounter difficulties in changing established relationships of competitors that already have a large installed base of products within such semiconductor fabrication facilities.

Technological Changes
New products designed by semiconductor capital equipment manufacturers typically have a lifespan of five to ten years. MKS's success depends on its products being designed into new generations of equipment for the semiconductor industry. The Company must develop products that are technologically current so that they are positioned to be chosen for use in each successive new generation of semiconductor equipment. If its products are not chosen by its customers, the Company's net sales may be reduced during the lifespan of its customers' products.

Risks Related to Year 2000 Compliance
MKS has implemented a multi-phase Year 2000 project consisting of assessment and remediation, and testing following remediation. MKS cannot, however, be certain that it has identified all of the potential risks. Failure by the Company to identify and remediate all material Year 2000 risks could adversely affect its business, financial condition and results of operations. MKS has identified the following risks:

* MKS cannot be certain that the entities on whom it relies for certain goods and services that are important for its business will be successful in addressing all of their software and systems problems in order to operate without disruption in the year 2000 and beyond
* MKS's customers or potential customers may be affected by Year 2000 issues that may, in part:
- cause a delay in payments for products shipped
- cause customers to expend significant resources on Year 2000 compliance matters, rather than investing in MKS's products
* MKS has not developed a contingency plan related to the failure of its or a third-party's Year 2000 remediation efforts and may not be prepared for such an event

Further, while MKS has made efforts to notify its customers who have purchased potential non-compliant products, the Company cannot be sure that customers who purchased such products will not assert claims against MKS alleging that such products should have been Year 2000 compliant at the time of purchase, which could result in costly litigation and divert management's attention.

## Expansion into New Markets

MKS plans to build upon its experience in manufacturing and selling gas measurement, control and analysis products used by the semiconductor industry by designing and selling such products for applications in other industries which use production processes similar to those used in the semiconductor industry. For example, MKS plans to expand its business to the manufacture of, among other things, hard coatings to minimize wear on cutting tools. Any failure by the Company to penetrate additional markets would limit its ability to reduce its vulnerability to downturns in the semiconductor industry and could have a material adverse effect on MKS's business, financial condition and results of operations.

MKS has limited experience selling its products in certain markets outside the semiconductor industry. The Company cannot be certain that it will be successful in the expansion of its business outside the semiconductor industry. MKS's future success will depend in part on its ability to:

* identify new applications for MKS's products
* adapt MKS's products for such applications
* market and sell such products to customers


## Expansion of Manufacturing Capacity

During 1999, MKS plans to add manufacturing capacity to its Austin, Texas operations and further equip its cleanroom facilities in Andover and Methuen, Massachusetts. MKS's ability to increase sales of certain products depends in part upon its ability to expand manufacturing capacity for such products in a timely manner. If the Company is unable to expand manufacturing capacity on a timely basis or to manage such expansion effectively, its customers could seek such products from others and its market share could be reduced. Because the semiconductor industry is subject to rapid demand shifts which are difficult to foresee, MKS may not be able to increase capacity quickly enough to respond to a rapid increase in demand in the semiconductor industry. Additionally, capacity expansion could increase the Company's fixed operating expenses and if sales levels do not increase to offset the additional expense levels associated with any such expansion, the Company's business, financial condition and results of operations could be materially adversely affected.

International Operations and Sales

International sales, which include sales by MKS's foreign subsidiaries, but exclude direct export sales which were less than $10 \%$ of total net sales, accounted for approximately $30 \%$ of net sales in $1996,27 \%$ of net sales in 1997 and $32 \%$ of net sales in 1998. MKS anticipates that international sales will continue to account for a significant portion of net sales. In addition, certain of MKS's key domestic customers derive a significant portion of their revenues from sales in international markets. Therefore, MKS's sales and results of operations could be adversely affected by economic slowdowns and other risks associated with international sales.

Exchange rate fluctuations could have an adverse effect on MKS's net sales and results of operations and the Company could experience losses with respect to its hedging activities. Unfavorable currency fluctuations could require MKS to increase prices to foreign customers which could result in lower net sales to such customers. Alternatively, if MKS does not adjust the prices for its products in response to unfavorable currency fluctuations, its results of operations could be adversely affected. In addition, sales made by MKS's foreign subsidiaries are denominated in the currency of the country in which these products are sold and the currency MKS receives in payment for such sales could be less valuable at the time of receipt as a result of exchange rate fluctuations. While MKS enters into forward exchange contracts and local currency purchased options to reduce currency exposure arising from these sales and associated intercompany purchases of inventory, MKS cannot be certain that its efforts will be adequate to protect the Company against significant currency fluctuations or that such efforts will not expose MKS to additional exchange rate risks.

## Need to Retain and Attract Key Employees

MKS's success depends to a large extent upon the efforts and abilities of a number of key employees and officers, particularly those with expertise in the semiconductor manufacturing and similar industrial manufacturing industries. The loss of key employees or officers could have a material and adverse effect on MKS's business, financial condition and results of operations. MKS believes that its future success will depend in part on its ability to attract and retain
highly skilled technical, financial, managerial and marketing personnel. Competition for such personnel is intense, and MKS cannot be certain that it will be successful in attracting and retaining such personnel. MKS is the beneficiary of key-man life insurance policies on John R. Bertucci, Chairman, Chief Executive Officer and President, in the amount of $\$ 7.2$ million.

Intellectual Property Matters
Although MKS seeks to protect its intellectual property rights through patents, copyrights, trade secrets and other measures, MKS cannot be certain that:

* it will be able to protect its technology adequately
* competitors will not be able to develop similar technology independently
* any of its pending patent applications will be issued
* intellectual property laws will protect its intellectual property rights
* third parties will not assert that MKS's products infringe patent, copyright or trade secrets of such parties

Litigation may be necessary in order to enforce MKS's patents, copyrights or other intellectual property rights, to protect its trade secrets, to determine the validity and scope of the proprietary rights of others or to defend against claims of infringement. Such litigation could result in substantial costs and diversion of resources and could have a material adverse effect on the Company's business, financial condition and results of operations.

Information concerning market risk is contained in the annual Management's Discussion and Analysis of Financial Condition and Results of Operations in MKS's recent filings with the Securities and Exchange Commission. There were no material changes in MKS's exposure to market risk from December 31, 1998.

## PART II OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

MKS is not aware of any material legal proceedings to which it or any of its subsidiaries is a party.

ITEM 2. CHANGES IN SECURITIES AND USE OF PROCEEDS
(d) Use of Proceeds from Sales of Registered Securities. On April 5, 1999 MKS closed the initial public offering of its Common Stock. The shares of Common Stock sold in the offering were registered under the Securities Act of 1933, as amended, on a Registration Statement on Form S-1 (the "Registration Statement") (Reg. No. 333-71363) that was declared effective by the Securities and Exchange Commission on March 29, 1999. The 6,000,000 shares offered by MKS under the Registration Statement were sold at a price of $\$ 14.00$ per share. NationsBanc Montgomery Securities LLC, Donaldson, Lufkin, \& Jenrette Securities Corporation, and Lehman Brothers Inc., the managing underwriters of the offering, also exercised an overallotment option of 375,000 shares on April 28, 1999. The overallotment shares were sold at a price of $\$ 14.00$ per share. The aggregate proceeds from the offering were $\$ 89,250,000$. In connection with the offering, MKS paid an aggregate of $\$ 6,247,500$ in underwriting discounts and commissions to the underwriters. In addition, the expenses incurred in connection with the offering were approximately $\$ 1,000,000$ including $\$ 295,000$ printing costs, $\$ 205,000$ legal costs, $\$ 180,000$ registration, filing, and related costs, $\$ 150,000$ accounting costs, and other costs of $\$ 170,000$.

After deducting the underwriting discounts and commissions and the offering expenses described above, the Company received net proceeds from the offering of approximately $\$ 82,002,500$.

On April 5, 1999 the Company distributed $\$ 40,000,000$, which is the estimated amount of the Company's undistributed S Corporation earnings as of the day prior to the closing of the offering. The remainder of the net proceeds will be used for general corporate purposes, including working capital, product development and capital expenditures. A portion of the net proceeds may also be used for the acquisition of businesses, products and technologies that are complementary to those of MKS.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

The 1999 Annual Meeting of the Stockholders of MKS Instruments, Inc. was held on February 17, 1999. The following resolutions were considered for approval by the Stockholders:

1) The election of John R. Bertucci, Richard S. Chute, Owen W. Robbins, Robert J. Therrien, and Louis P. Valente as Directors of the Corporation;
2) To amend the Restated Articles of Organization, as amended, to increase the authorized Class A Common Stock, no par value per share, of the Corporation from $6,000,000$ shares to $11,250,000$ shares and to increase the authorized Class B Common Stock, no par value per share, of the Corporation from $10,000,000$ shares to $18,750,000$ shares, so that after the effective date of such amendment the total authorized capital stock of the Corporation shall consist of $11,250,000$ shares of Class A Common Stock and 18,750,000 shares of Class B Common Stock, no par value per share;
3) That the amendment and restatement of the Corporation's Restated Articles of Organization (the "Restated Articles"), to become effective immediately prior to the closing of the Public Offering, to (i) convert each outstanding share of Class A Common Stock and each outstanding share of Class B Common Stock into one share of Common Stock, no par value per share ("Common Stock"); (ii) delete all provisions relating to Class A Common Stock and Class B Common Stock; (iii) authorize for issuance 2,000,000 shares of Preferred Stock, \$.01 par value per share, and to authorize the Board of Directors to issue one or more series of Preferred Stock with such preferences and privileges as may be determined from time to time by the Board of Directors; (iv) increase the number of authorized shares of Common Stock from 30,000,000 shares to 50,000,000 shares; (v) amend the provisions relating to the limitation of Director liability; (vi) add a provision authorizing the Board of Directors, subject to certain limitations, to amend the Corporation's By-Laws; (vii) add a provision authorizing certain transactions to be approved by the holders of a majority of the outstanding shares of stock (rather than $2 / 3$ of the outstanding shares of stock) when such transactions have been approved by a majority of the Board of Directors; and (viii) elect to not have Chapter $110 F$ of the Massachusetts General Laws apply to the Corporation, and as described in the Proxy Statement, be and hereby is approved and adopted;
4) That the amendment and restatement of the Corporation's By-Laws, to become effective immediately upon the closing of the Public Offering, as described in the Proxy Statement, be and hereby is approved and adopted; and
5) That the 1999 Purchase Plan, as described in the Proxy Statement, be and hereby is ratified, approved, and adopted, to become effective on June 1, 1999 if at such time the Corporation's Common Stock is listed for trading on the Nasdaq National Market or a national securities exchange.

Resolutions 1, 4, and 5 were unanimously approved with no shares abstaining. Resolutions 2 and 3 were approved with $18,053,165$ votes cast for approval, 2 votes cast against approval, and no shares abstaining.

ITEM 5. OTHER INFORMATION

None.
ITEM 6. EXHIBITS AND REPORTS ON FORM 8-K
(a) Exhibits

Ex. No. Description
27 Financial Data Schedule
(b) Reports on Form 8-K

No reports on Form 8-K were filed during the quarter for which this report on Form 10-Q is filed.

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

MKS INSTRUMENTS, INC.

By: /s/ Ronald C. Weigner
Ronald C. Weigner
Vice President and Chief Financial Officer (Principal Accounting Officer)


[^0]:    6) STOCKHOLDERS' EQUITY

    In February 1999, the Company granted options to purchase 24,000 shares of common stock at an exercise price of $\$ 14.40$ per share to the Board of Directors as the annual grant under the 1997 Director Stock Option Plan. In March, 1999 the Company granted additional options to purchase 42,000 shares of common stock at an exercise price of $\$ 14.00$ per share to the Board of Directors as the initial public offering grant under the 1997 Director Stock Option Plan.

    In March 1999, the Company granted options to purchase approximately 360,000 shares of common stock at an exercise price of $\$ 14.00$ per share to employees of the Company under the Amended and Restated 1995 Stock Incentive Plan.

    In March 1999, the Company amended its Articles of Organization to: i) eliminate the authorized shares of Class A Common Stock and Class B Common Stock; ii) increase the authorized number of shares of Common Stock to 50,000,000 shares; iii) authorize 2,000,000 shares of Preferred Stock, $\$ 0.01$ par value per share; and iv) provide that each outstanding share of Class A Common Stock and Class B Common Stock be converted into one share of Common Stock.

    Total comprehensive income was as follows:

