BiTS

Burn-in & Test Socket Workshop

March 2 - 5, 2003
Hilton Phoenix East / Mesa Hotel
Mesa, Arizona

IEEE COMPUTER SOCIETY

Sponsored By The IEEE Computer Society Test Technology Technical Council

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Keynote Address
Tuesday 3/04/03 8:00PM

“IC Market Recovery Outlook”

Bill McClean
President
IC Insights, Inc.

IC Market Recovery Outlook

Presented by:
Bill McClean
President, IC Insights

BiTS 2003 Workshop Keynote
March 4, 2003
Mesa, Arizona

About IC Insights

IC Insights, Inc., based in Scottsdale, Arizona, is dedicated to providing high-quality, cost-effective market research for the integrated circuit industry. Founded in 1997, IC Insights offers coverage of global economic trends, the IC market forecast, capital spending and fab capacity trends, product market details, and technology trends, as well as complete IC company profiles and evaluations of emerging markets for ICs.

IC Insights Products & Services

The McCLEAN REPORT
An In-Depth Analysis and Forecast of the IC Industry

STRATEGIC REVIEWS
Extensive Profiles of the World's IC Manufacturers and Fabless Suppliers

EMERGING IC MARKETS
A Study of Future Market Opportunities for Integrated Circuits

Additional Information

www.icinsights.com
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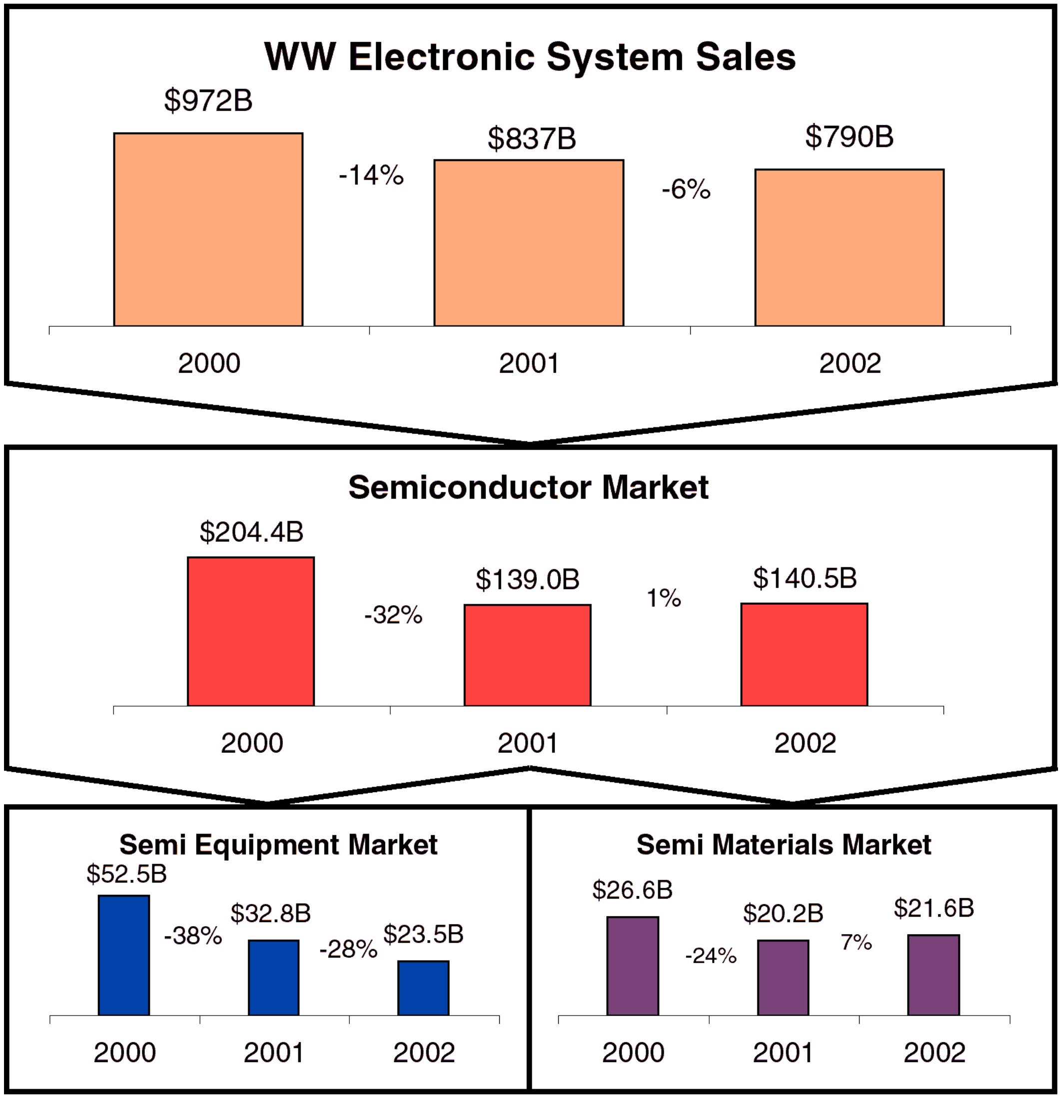
Electronic Industry Interdependence



Source: IC Insights, SEMI

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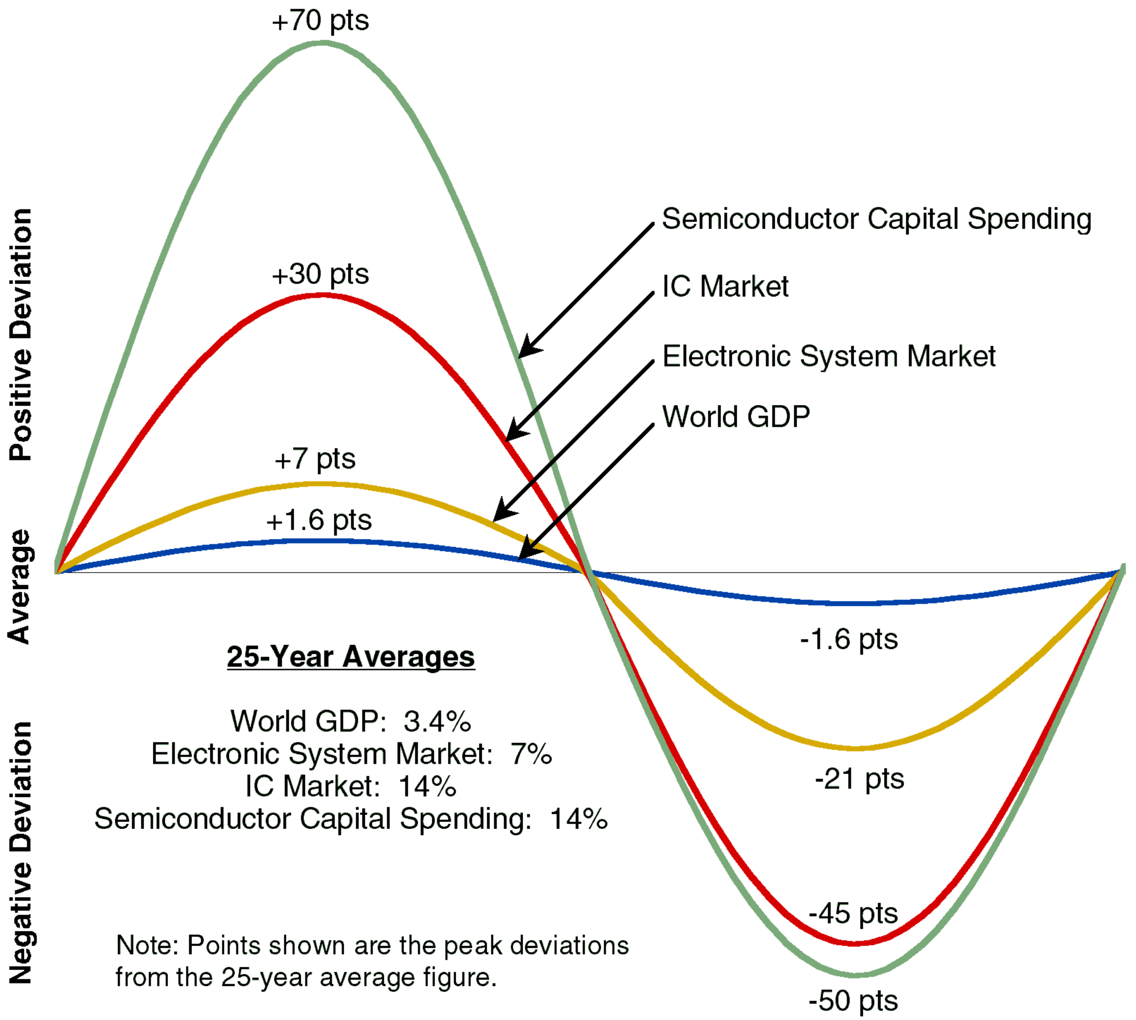
Cycle Amplitude Comparisons



Source: IC Insights

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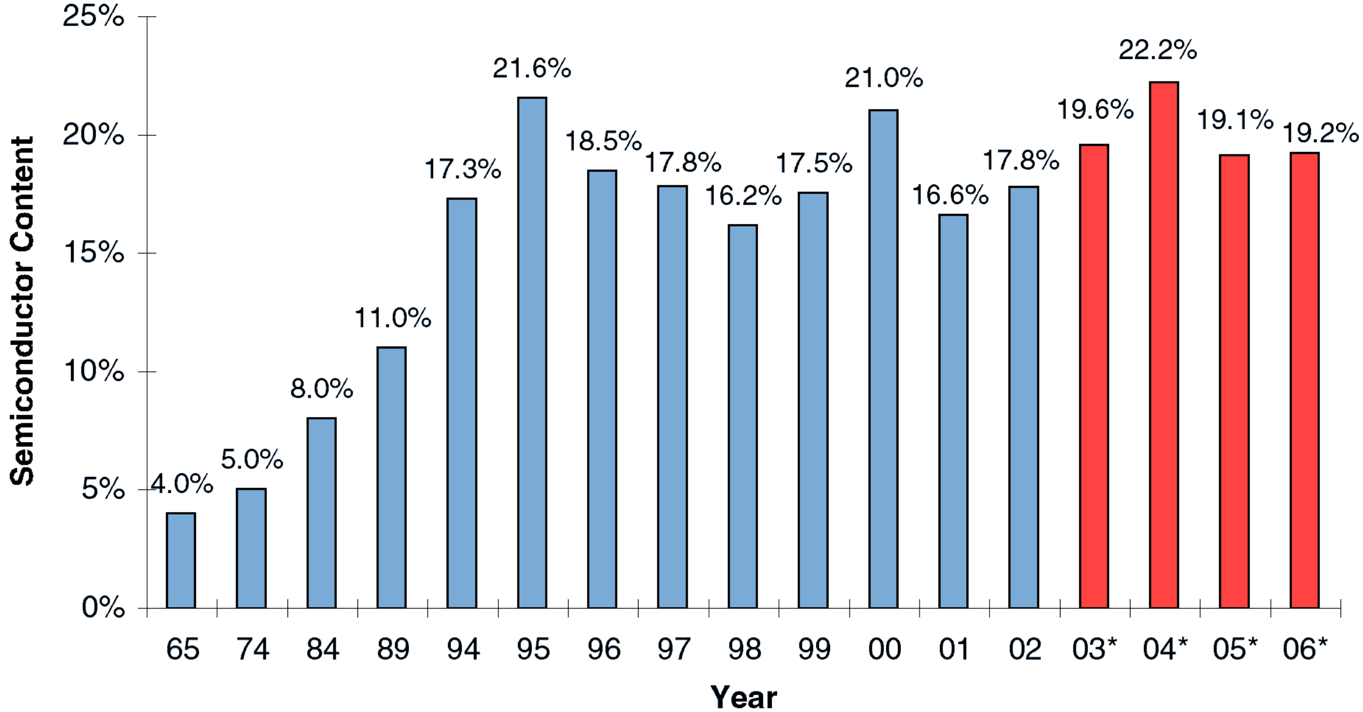
Electronic System Semiconductor Content



Source: STMicroelectronics, TI, IC Insights

*Forecast

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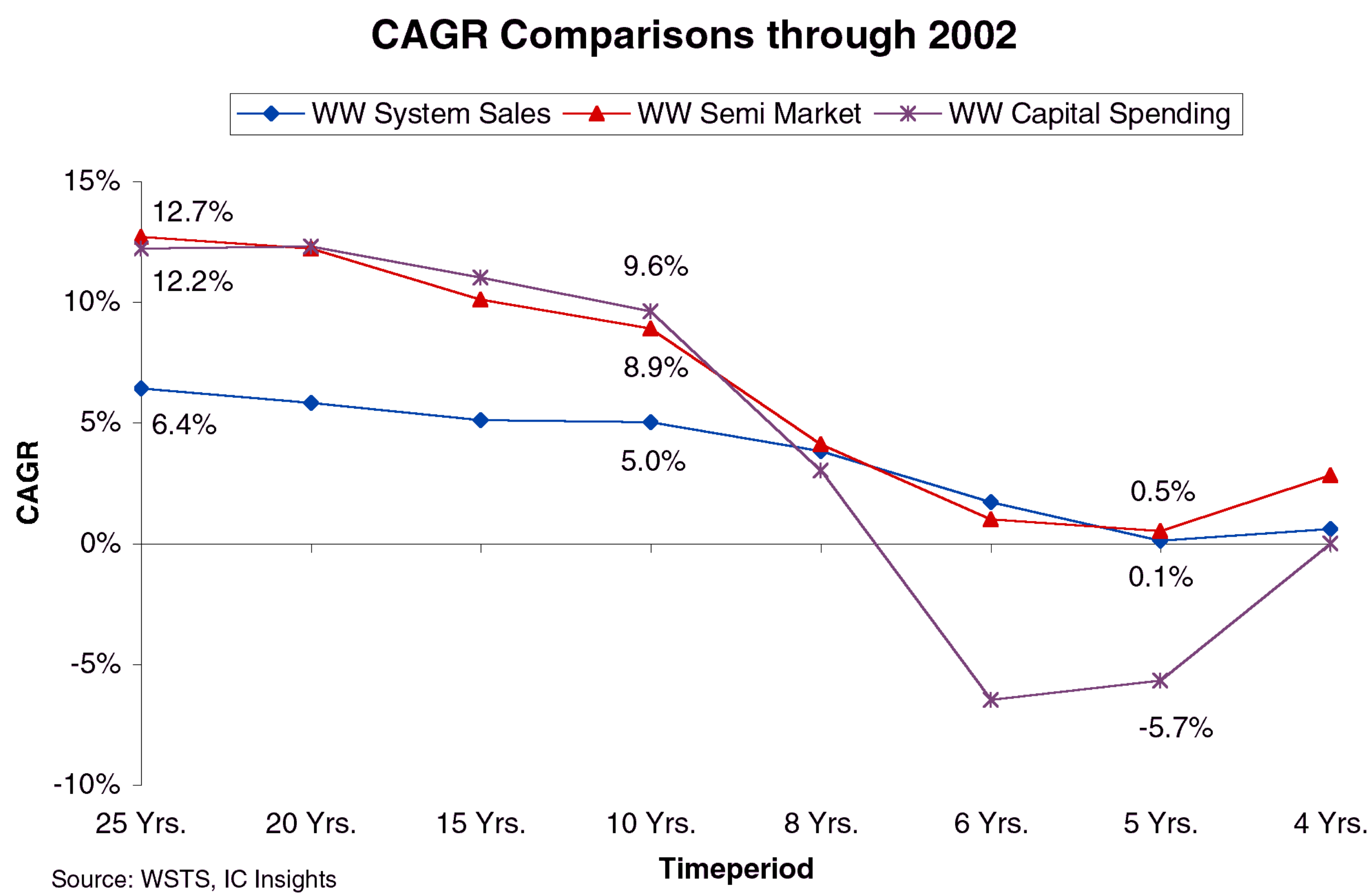
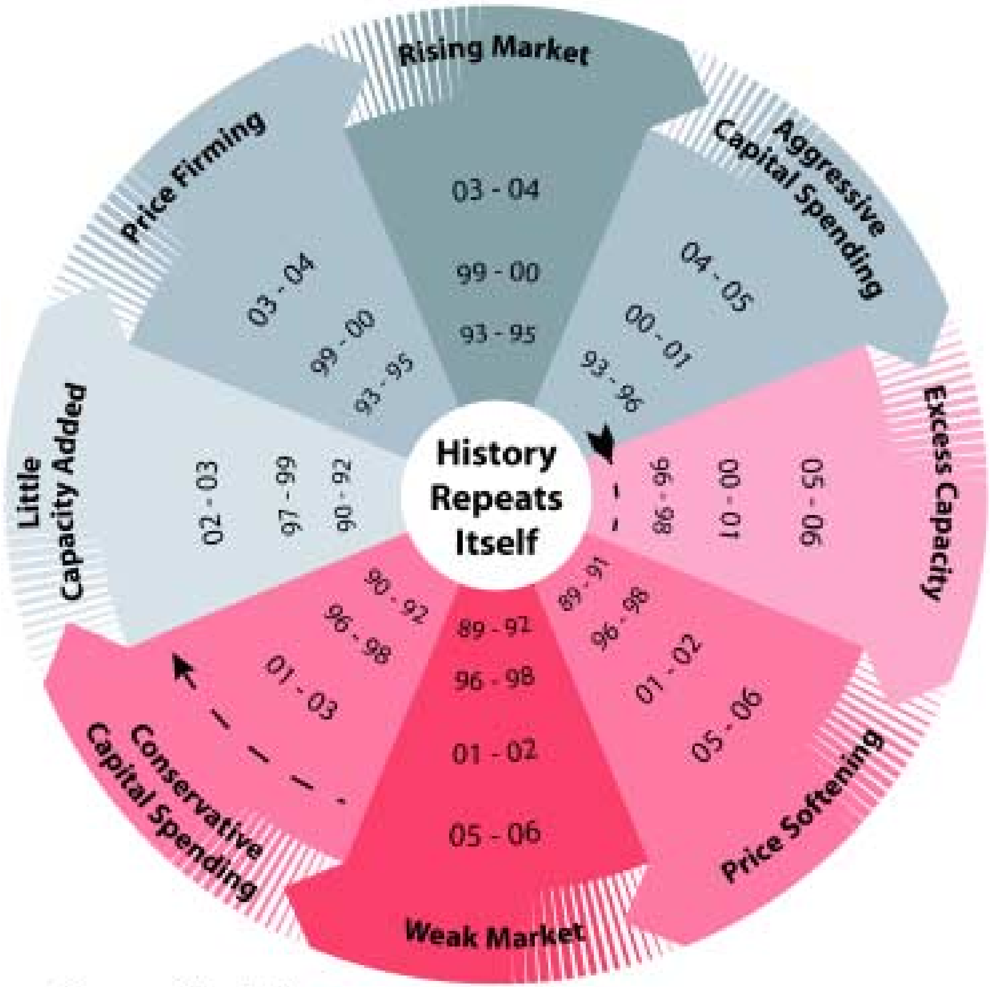


CAGR Comparisons through 2002
WW System Sales
WW Semi Market
WW Capital Spending
15%
10%
5%
0%
-5%
-10%
CAGR
12.7%
12.2%
9.6%
8.9%
6.4%
5.0%
0.5%
0.1%
-5.7%
25 Yrs.
20 Yrs.
15 Yrs.
10 Yrs.
8 Yrs.
6 Yrs.
5 Yrs.
4 Yrs.
Timeperiod
Source: WSTS, IC Insights

The IC Industry Cycle



Source: IC Insights

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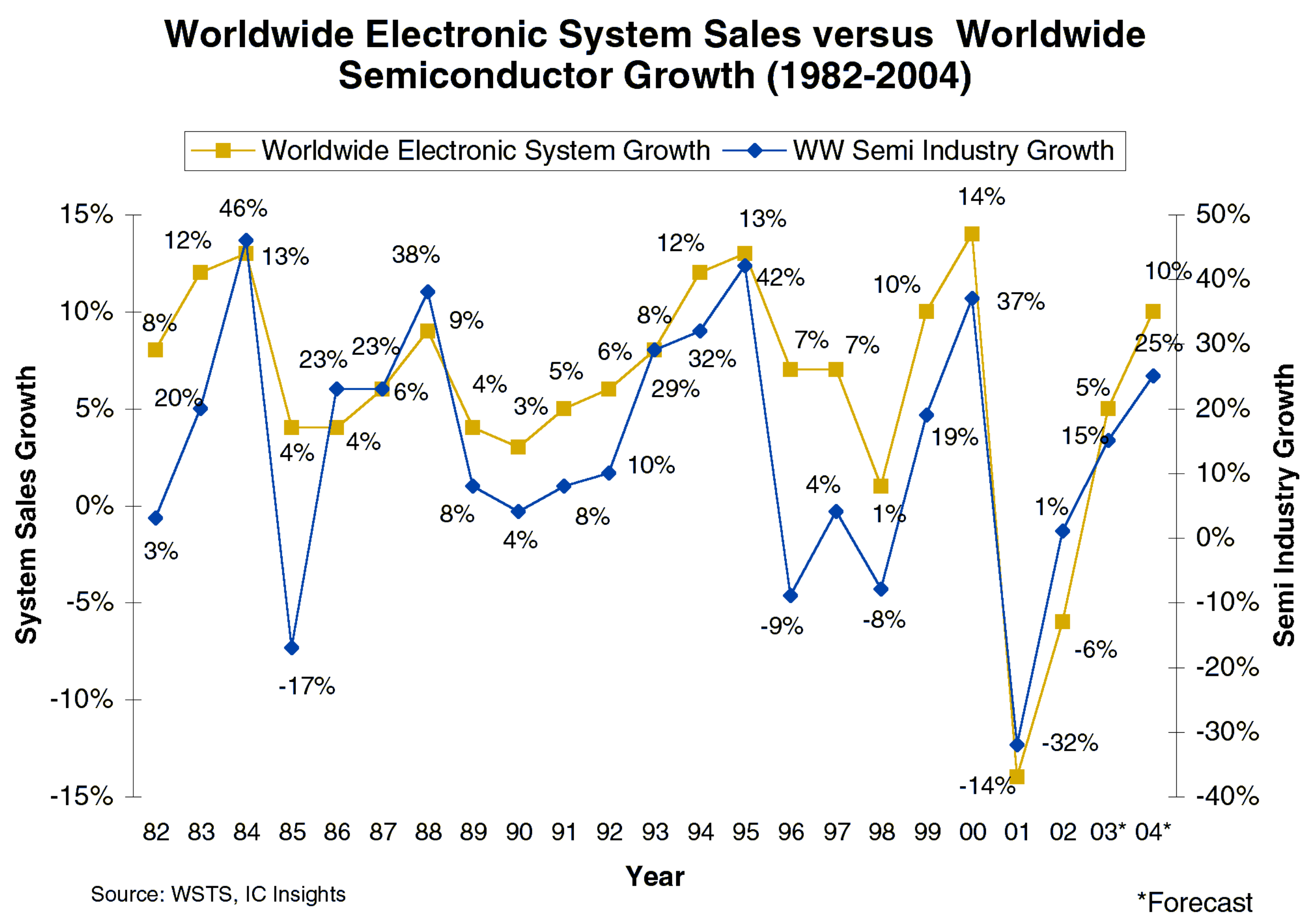

Worldwide Electronic System Sales versus Worldwide Semiconductor Growth (1982-2004)
Worldwide Electronic System Growth
WW Semi Industry Growth
System Sales Growth
Semi Industry Growth
Year
82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03* 04*
15% 10% 5% 0% -5% -10% -15%
50% 40% 30% 20% 10% 0% -10% -20% -30% -40%
Source: WSTS, IC Insights
*Forecast

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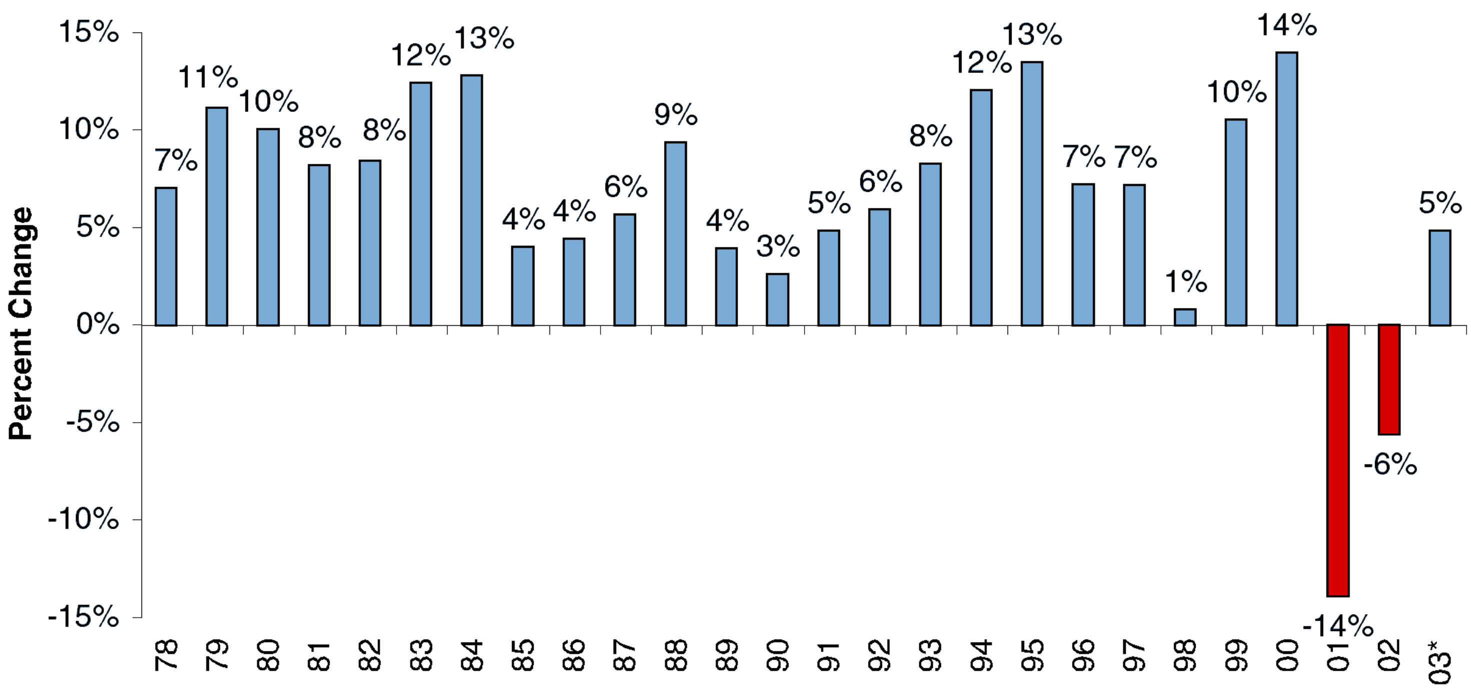
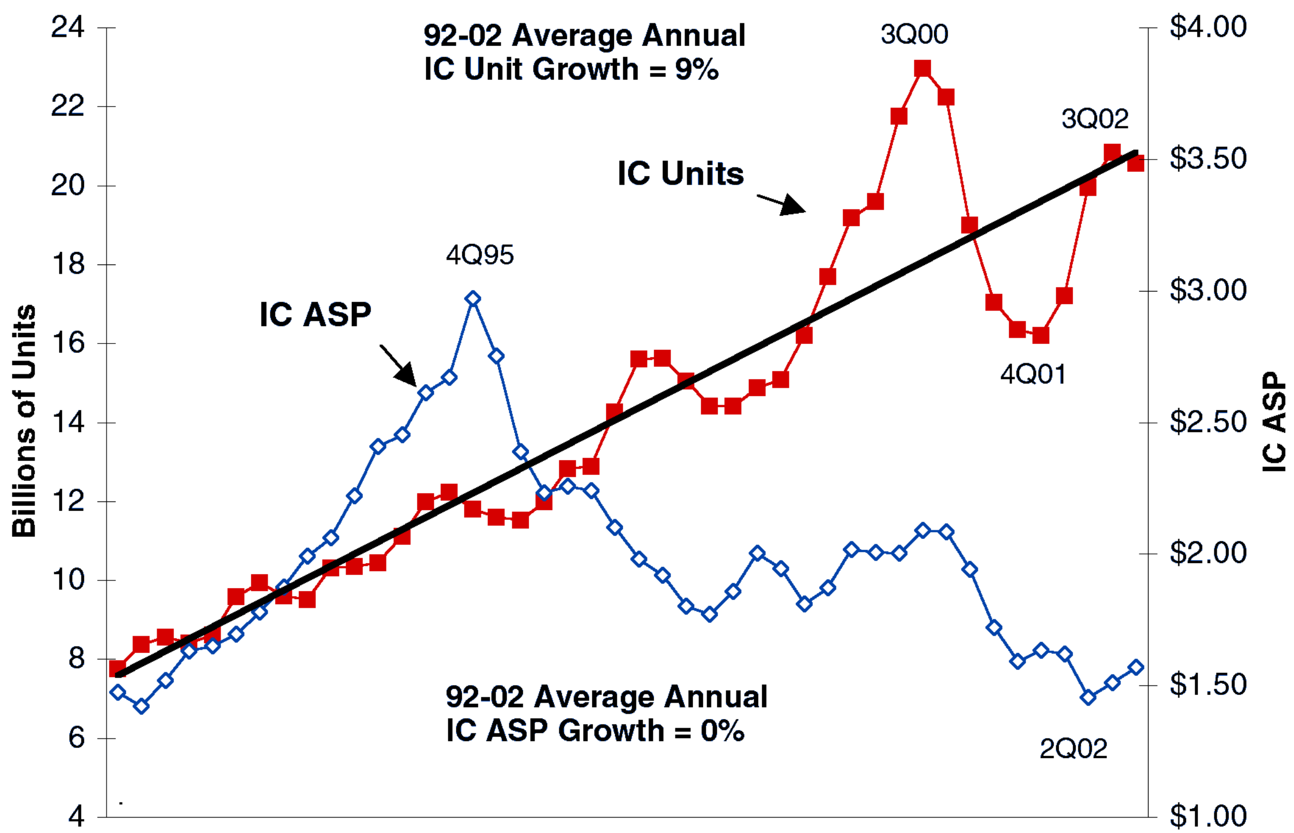
Worldwide Electronic System Market Growth Rates (1978-2003)



Source: IC Insights

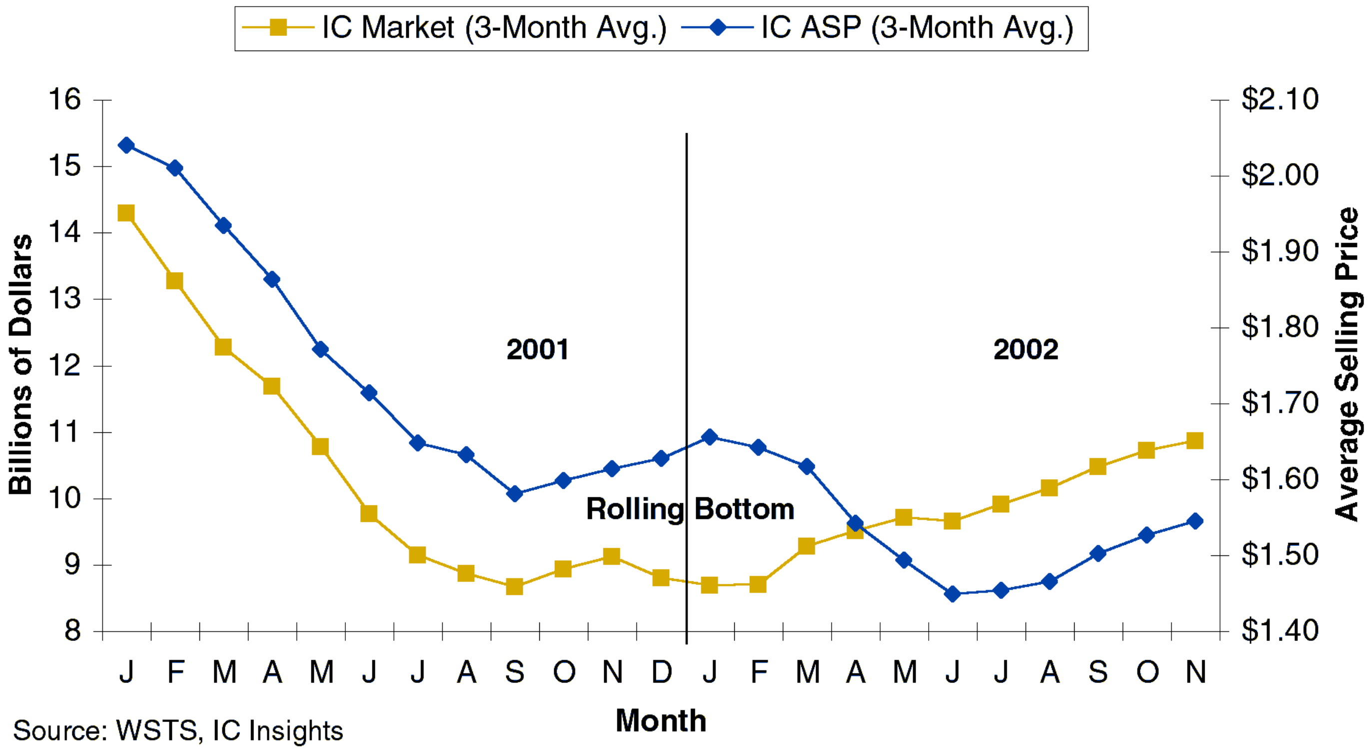
*Forecast

1992-2002 Quarterly IC ASP and Unit Volumes



Source: WSTS, IC Insights

2001-2002 IC Market Cycle



Source: WSTS, IC Insights

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IC Insights' IC Industry Forecast Assumptions for 2003

2003 Factors	<10% Growth	10% to 20% Growth	>20% Growth
Worldwide Economic Situation	<2.8% GDP Growth	2.8%-3.4% GDP Growth	>3.4% GDP Growth
Non-Japan Asian Economies GDP Growth	<4.5% GDP Growth	4.5%-5.5% GDP Growth	>5.5% GDP Growth
IC Capacity Situation	<85% Capacity Utilization	85%-90% Capacity Utilization	>90% Capacity Utilization
IC Unit Volume Shipments	<8% Increase	8%-13% Increase	>13% Increase
Worldwide Electronic System Sales	<4% Growth	4%-6% Growth	>6% Growth
2003/2002 IC ASP Change	<1% (ASP <$1.55)	1% - 6% (ASP = $1.55-$1.62)	>6% (ASP >$1.62)
Foreign Currency/U.S. Dollar Exchange Rate	Deflationary	Moderately Inflationary	Highly Inflationary
IC Insights' Forecasted Probability of Occurrence	**25%**	**55%**	**20%**

Source: IC Insights

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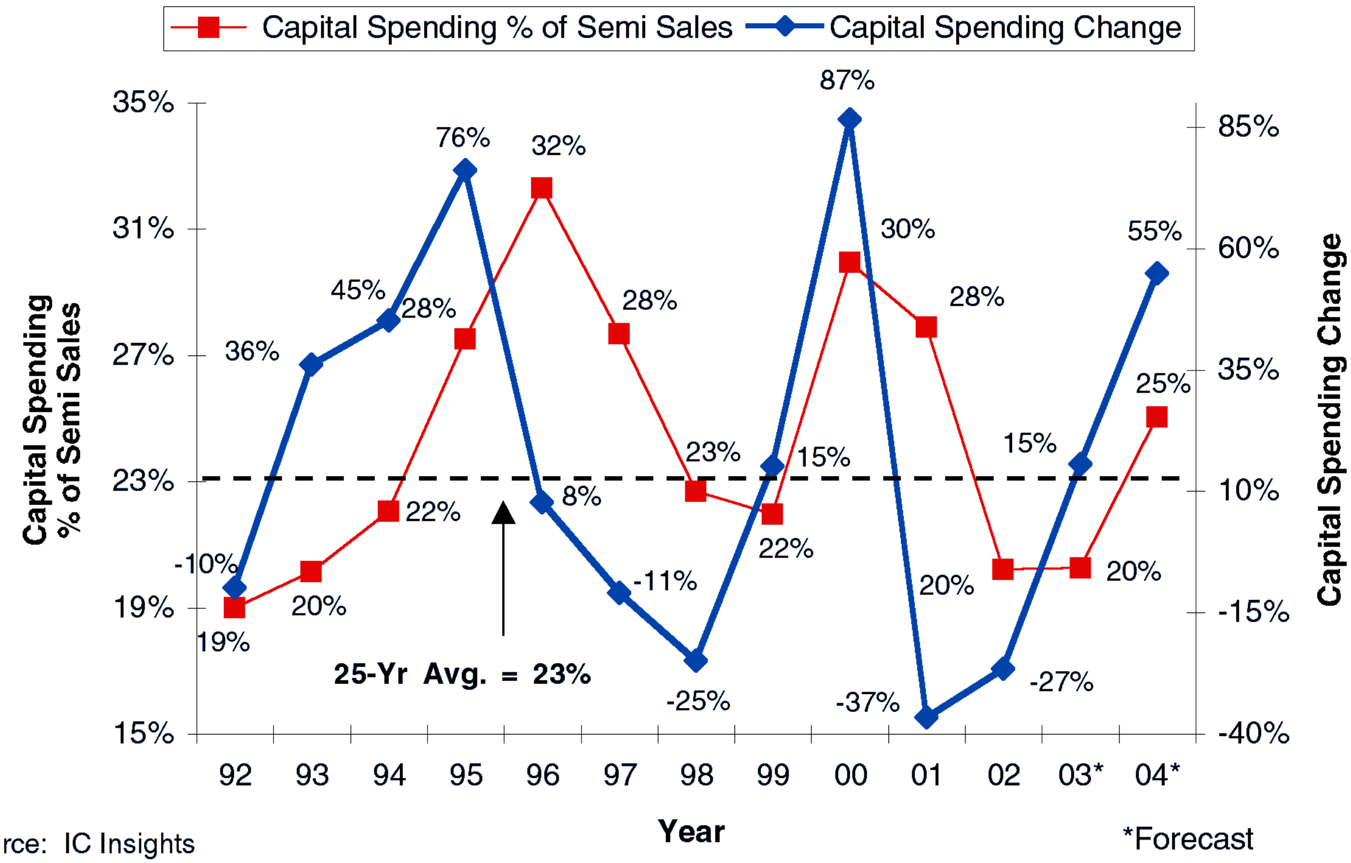
Semiconductor Capital Spending as a Percent of Semiconductor Sales (1992-2004)



Source: IC Insights

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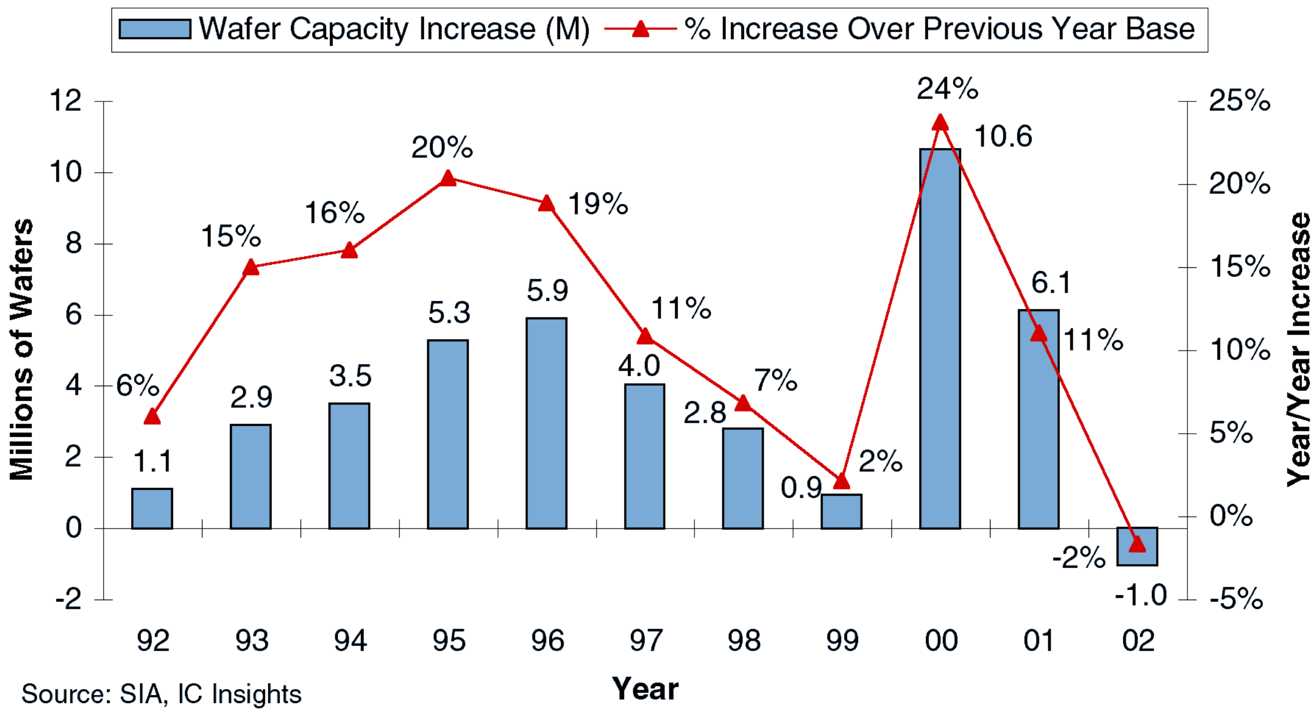
Worldwide MOS IC Wafer Capacity Increases (200mm Equivalents)



Source: SIA, IC Insights

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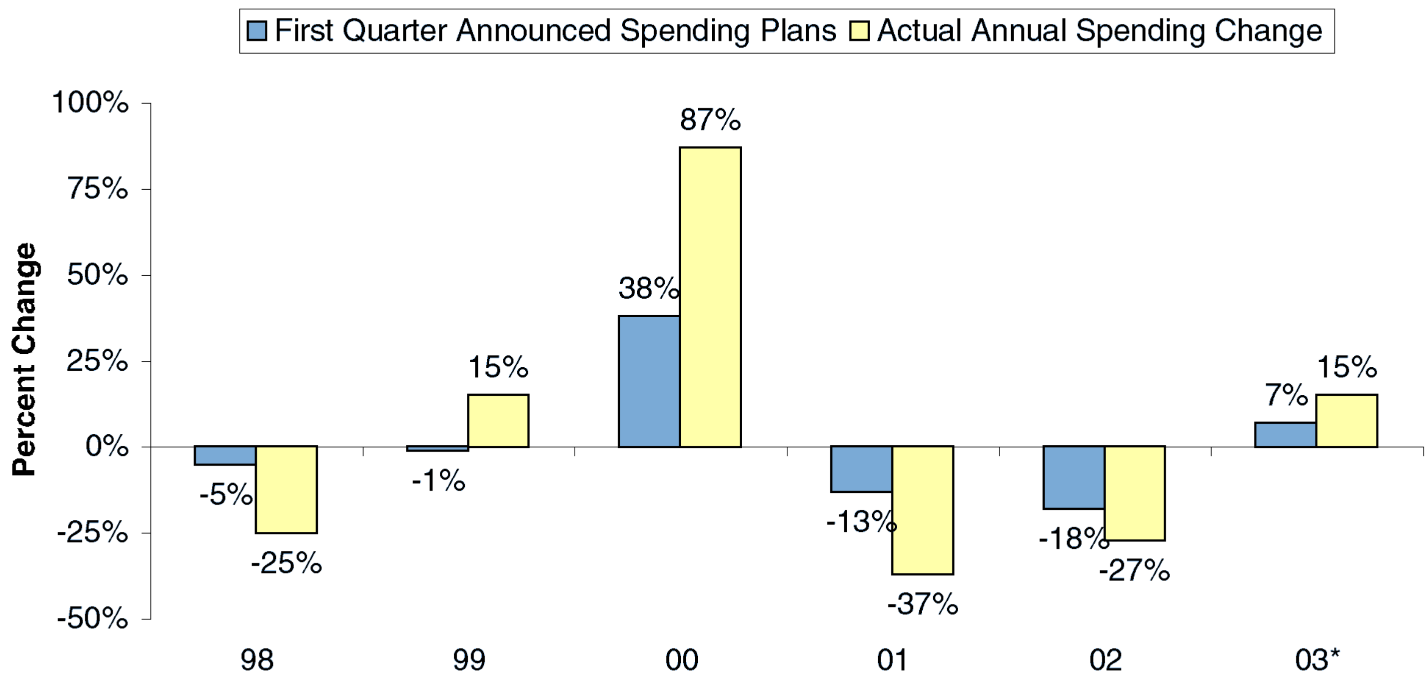
First Quarter Worldwide Semiconductor Capital Spending Plans vs Actual Annual Expenditures



Source: IC Insights

*Forecast

IC Insights' Summary

- ✷ IC unit volume shipments will continue to average 7%-9% growth/year.
- ✷ China will set the price for electronic system production, IC foundries will set the price for wafer processing — both will be deflationary.
- ✷ Chinese IC producers will "learn their economics lesson," similar to Japanese, Korean, and Taiwanese companies. The Chinese are likely to be the last large group of "newcomers" to IC production.
- ✷ Foundries will increase IC production marketshare, but competition will be fierce. Likely to endure a period of "profitless prosperity."
- ✷ Total share of a given market will continue to be limited to 100 points.
- ✷ Electronic system sales and IC industry cycles are forecast to continue, but with lower "average" growth rates during the cycles.
- ✷ An IC industry recovery has begun and is forecast to increase in intensity in 2003 and 2004.

Source: IC Insights

IC Insights