

2006 outlook improves ...

Be wary of rising costs, shortages and double ordering

End market demand is improving. Using three countries that report monthly data as examples, the USA (Chart 1), Japan (Chart 2) and Taiwan/China (Chart 3) all showed an upward trend in recent months. The post-holiday seasonal downturn in Asia appears to have

reversed, and U.S. electronic equipment orders rose significantly in March. The largest chip-consuming end markets (mobile phones and personal computers) both had a good first quarter. Cell phone shipments (Chart 4) rose 26% in 1Q'06 vs. 1Q'05 and component suppliers for

mobile handsets saw an upturn in March (Chart 5) following a brief seasonal 'correction.' Personal computers (Chart 6) grew 13% in the first quarter as developing nations created additional demand for both PCs and cell phones. Semiconductor shipments (Chart 7) have moved into



Jon and Walt Custer

the early growth phase of their 11th business cycle since 1984. Using 3-month averages to 'smooth' the data, all geographic areas have entered a modest growth mode although SE Asia is clearly the 'runaway' leader (Chart 8). In a time of increasing demand, material shortages and cost increases are a rising concern. Copper (Chart 9) and other 'electronically important'

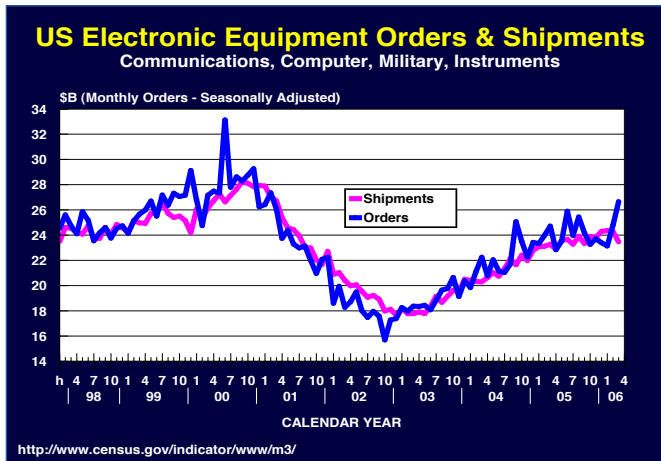


Chart 1.

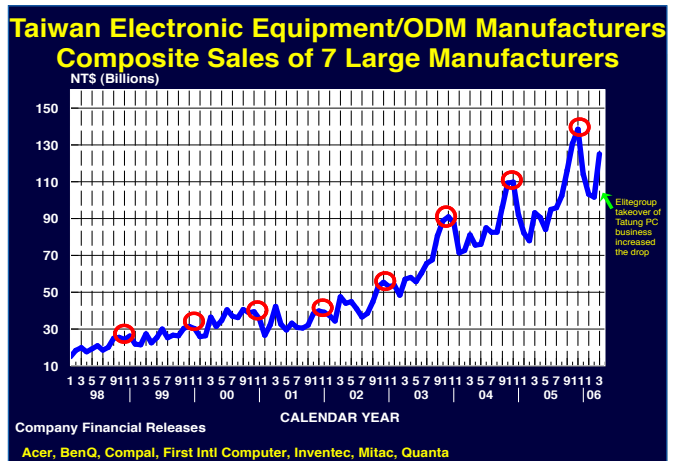


Chart 3.

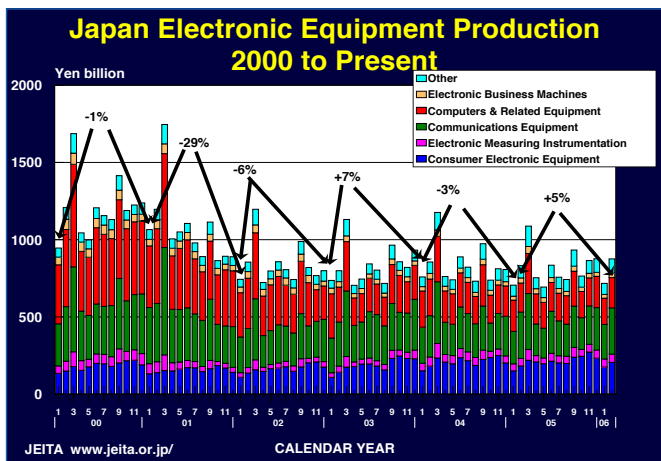


Chart 2.

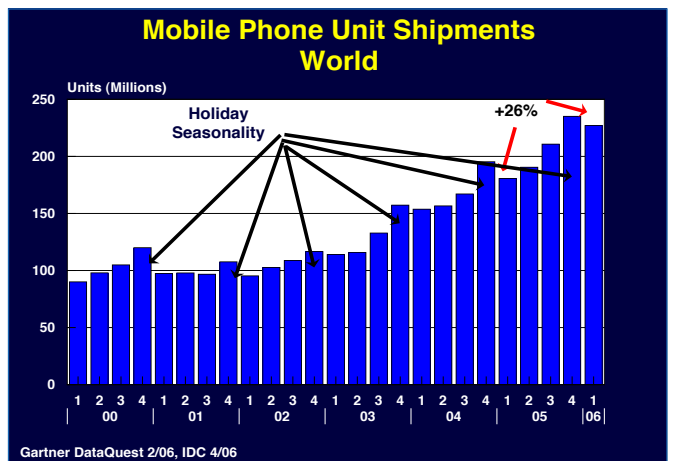


Chart 4.

metals are seeing huge price increases.

In spite of skyrocketing energy costs, geopolitical unrest, rising interest rates and much higher raw material costs the global electronics industry is doing much better.

At present inventories appear to be well under control (Chart 10). But, be wary of shortages, double ordering and inventory building as we move into the 'busy season' later this year.

General business conditions

Global semiconductor sales were \$59.1 billion in 1Q'06, 7.3% higher than 1Q'05. First quarter sales declined 1.3% from 4Q'05. The SIA said the sequential decline reflected normal seasonal patterns.

World markets:

Handheld device shipments totaled 1.5 million units in 1Q'06, down 22.3% from the same quarter a year ago per IDC.

Mobile phone total shipments were 227 million units in 1Q'06, up 26% over the same quarter in 2005 per IDC.

Mobile phone sales totaled 817 million units in 2005, a 21% increase from 2004 per Gartner.

World semiconductor capital equipment market is forecast to total \$38.8 billion in 2006, a 14.3% increase from 2005 per Gartner.

Europe's SMT equipment market revenue totaled \$369 million in 2005 and is estimated to reach \$550 million in 2012 per Frost & Sullivan.

Costs are spiraling upward. Utilities, transportation and petrochemical and metal based raw materials are among the items driving cost increases. In addition the stronger yuan has impacted China produced goods.

Taiwan copper clad laminate manufacturers raised their prices 3-5% in April. They are not ruling out further increases in the upcoming months.

Materials & process equipment

Assembleon Americas appointed Leo van de Vall CEO and President.

Brady Corporation acquired Daewon Industry Corporation, a manufacturer and supplier of pressure sensitive, die-cut adhesive components for the mobile handset and electronics industry.

Dai-Nippon Screen introduced a new AOI machine for ultra high-density circuit boards. **DEK International** received the 2006 Frost & Sullivan Award for leadership in the world SMT screen printer market. **Dimatix** developed a bench-top ink jet deposition system to apply patterns of micron-sized drops of adhesives. **Henkel** received the Electronics Manufacturing Asia Innovation Award for a lead-free solder paste that offers reliable performance regardless of climactic condition. **Isola** acquired Polyclad Laminates from Cookson Electronics for \$91 million. **Kingboard Chemical** budgeted HK\$1.5 billion to expand capacity and to develop FR4-HiTg and FR4-Halogen free laminates.

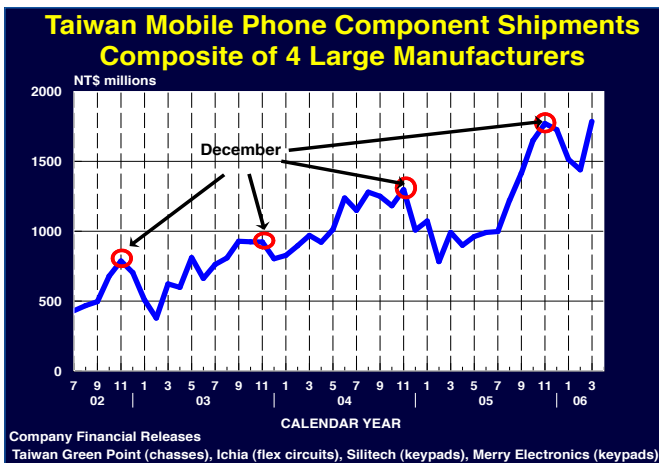


Chart 5.

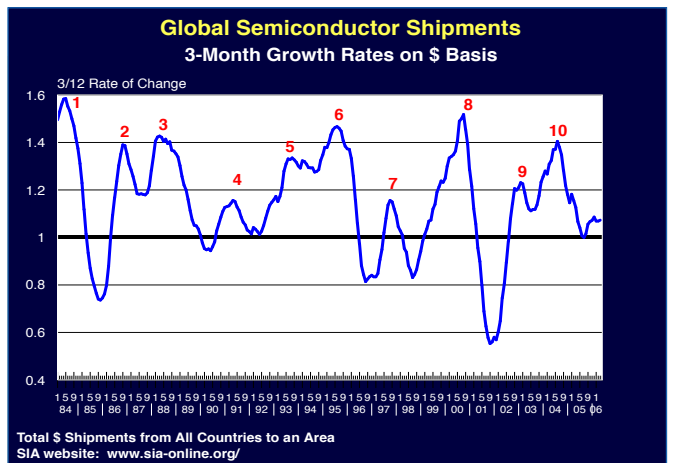


Chart 7.

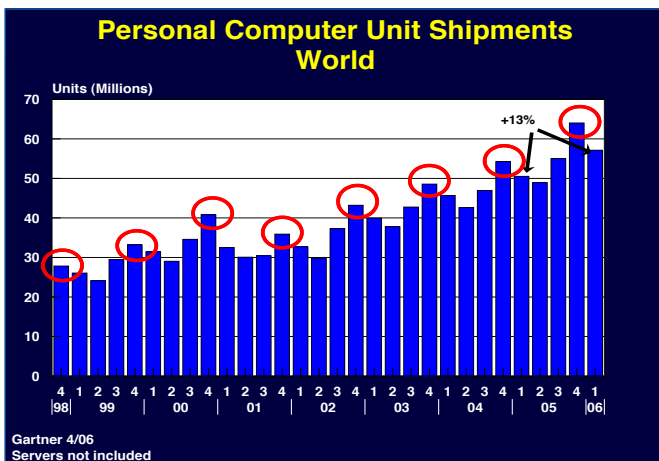


Chart 6.

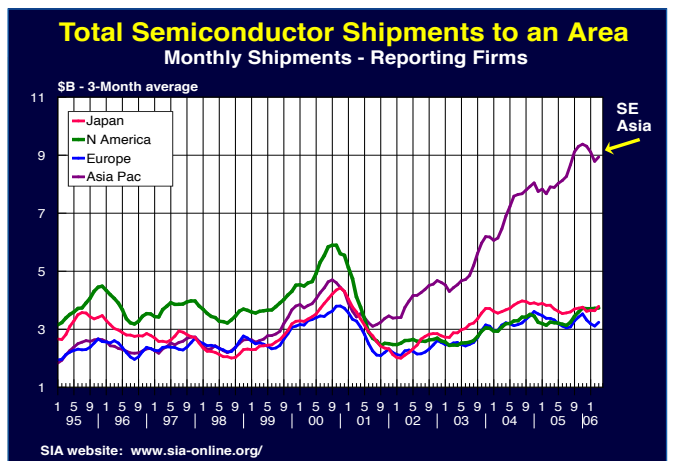


Chart 8.

Konarka hired Eitan Zeira as its new director of organic electronic printing technology. Matsushita Electric Works invested 2.6 billion yen in Panasonic Electric Works Electronic Materials (Souzhou) as its second laminate production center in China. Equipment for the plant will be transferred from its Forest Grove, Oregon subsidiary within FY 2006.

Mentor Graphics opened a design laboratory at Moscow Institute of Electronic Technology (MIET) in Zelenograd, Russia

Polyclad closed its Franklin, New Hampshire laminate plant.

Rich Heimsch joined Protean Marketing from DEK International.

Richardson Electronics president and COO Arthur

Buckland resigned and Edward Richardson assumed his positions until a permanent replacement is found. Richardson Electronics received a NASDAQ delisting notice.

Rogers Corporation settled its patent infringement claims against Isola regarding laminate products comprising cross-linked polybutadiene or polyisoprene, woven fabric and a wide range of fillers.

SIJ Technology will market its new ink jet printing technology for fine line printed circuits.

SMM will build a new adhesiveless flexible laminate manufacturing plant with an investment 7 billion yen.

Tyco Electronics will move its headquarters to the Philadelphia area.

EMS and related assembly activity

Asustek formed a strategic alliance with Advantech through a share-swap. The new venture has tentatively been named AdvanSus.

Benchmark Electronics completed 3-for-2 stock split. **CTS** will establish an EMS facility in Matamoros, Mexico. Production will start in mid-2006 and will focus on electro-mechanical and system integration.

Elcoteq will manufacture base station antennas in St. Petersburg, Russia, for PCTEL **Flextronics**:

- Will close its PCB assembly plant in Haapajärvi, Finland and dismiss 120 employees
- Is searching for 150 managers from Hong Kong for its Zhuhai, China facility

in the Doumen Industrial Park to meet the demands of high-profile clients such as Xerox, Casio, SanDisk, Motorola, Sony Ericsson, Microsoft and Johnson & Johnson.'

- Will take a minority stake in a \$3 billion Indian wafer fab, SemIndia

Integrated Microelectronics, Philippines, and BuS Elektronik, Riesa, Germany, formed a strategic EMS alliance.

Inventec Appliances downsized its workforce by 100-200 people in Taiwan.

Jabil Circuit (Chart 11) earned the Federal Aviation Administration (FAA) repair station certificate for its Singapore facility.

Jaltek, Israel, appointed Ido Yoram as Production Manager for its EMS operations.

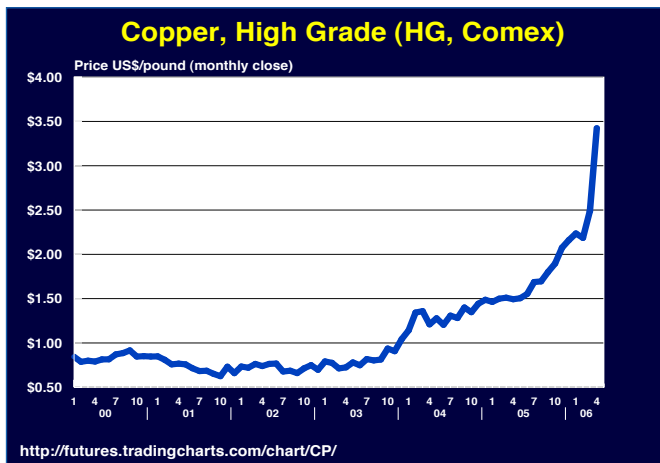


Chart 9.

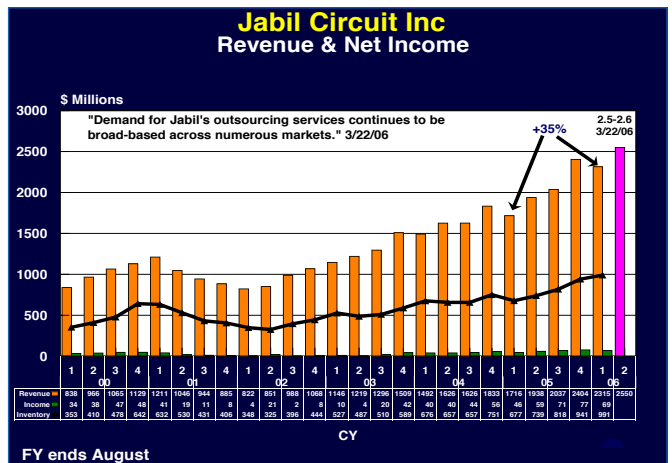


Chart 11.

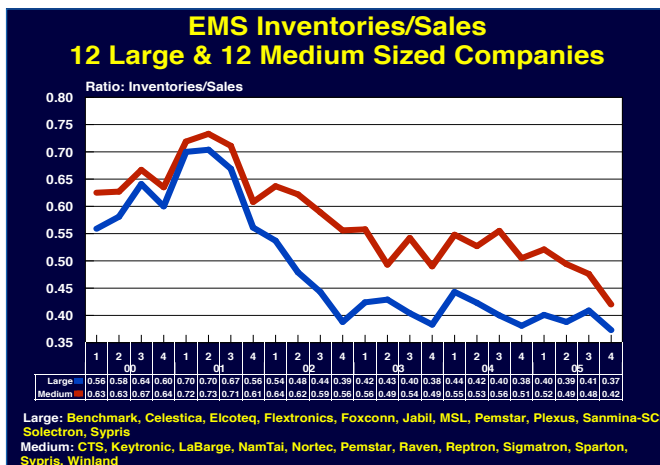


Chart 10.

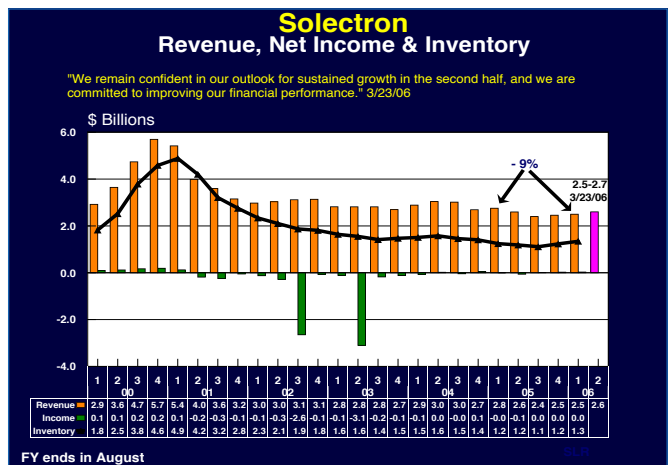


Chart 12.

Kimball Electronics

acquired Bayer's Healthcare manufacturing operation in Wales, U.K.

Kinpo (Compal) Group

restructured to streamline decision-making; Alan Chiang Cal-Comp, Thailand will also serve as president of Kinpo to facilitate the integration of the OEM/ODM businesses of the two companies.

Micro-Star International

suspended operations of its motherboard business in China due to expanded competition from ASRock

Perlos closed its plant in Nurmijärvi, Finland, resulting in a loss of 573 jobs. Perlos and Foxconn workers protested over Nokia's cost cutting measures to subcontractors.

Prism Electronics

and **MCE**, two Cambridgeshire, UK contract manufacturers collaborated on tin-lead and RoHS-complaint processes for rigid-flex and normal FR4 boards.

Scanfil Oyj shut down its Oulu, western Finland plant.

Soletron (Chart 12):

- And Waters Corp jointly invested S\$9 million in a 25,000 SF medical manufacturing facility at the Chai Chee Technopark, Singapore.
- Received Aerospace Design and Manufacturing Certification (EN 9100:2003) at its Bordeaux, France, plant
- Laid off 29 workers at its Östersund plant in northern Sweden after a labor union contract expired.

Soletron Charlotte is the first tier one EMS site worldwide to earn IPC RoHS certification.

Suntron completed a \$16.8 million sale of its Texas properties. It will rent back half of the property for seven years.

Semiconductor industry

Here's an interesting set of comments by Semiconductor Industry Association President George Scalise on May 1, 2006:

- Very strong sales of

cell phones were a major contributor to the year-on-year increase in microchip sales. Cell phone unit sales increased by 31% from the first quarter of 2005 and ran substantially ahead of expectations.

- According to iSuppli, the average semiconductor content of a cell phone is now approximately \$41 per unit.
- Cell phones now represent the second largest market, after personal computers, for semiconductors. Cell phones and PCs now account for more than half of all semiconductor sales.
- The replacement cycle for cell phones has declined from an average of 26 months to about 18 months, as manufacturers offer new products with smaller form factors and increased functionality.
- Unit sales of personal computers increased by 13% in the first quarter of 2006 compared to the same quarter of 2005, according to IDC.
- Inventory in the supply chain for some products has been growing as manufacturers build inventory in the expectation of market growth.
- End market demand, capacity utilization and inventories are the most critical factors affecting industry growth. End market demand remains generally strong, and capacity utilization continues to be above 90 percent. "We will be closely watching the inventory situation, especially in market segments for consumer products."
- Rapidly rising energy prices remain a concern. "We estimate that gasoline prices at current levels will take approximately \$138 billion from American households' discretionary income this year." Despite recent rapid increases in gas

prices, consumer confidence remains strong. If pump prices continue to increase significantly, there will be further erosion of discretionary income and that could affect consumer confidence and consumer spending.

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