

A 'stable' 2006... all things considered



Electronic supply chain revenues are driven by multiple factors:

- Underlying global demand for electronic goods
- Geographic shifts in world production
- Multiyear business cycles
- Seasonal fluctuations (holiday, consumer electronics driven)
- Inventory fluctuations
- Capacity availability (both excess & shortages)
- Pricing fluctuations

Globally we are now in the recovery phase of the 11th business cycle since 1984 (Chart 1). It is not clear how robust the upturn will be but most semiconductor forecasters are optimistic regarding long term growth.

Japan, following five years of a domestic production contraction (due to post-2000 'bubble' and outsourcing to lower cost areas), appears to again be in a modest growth mode (Chart 2). In the USA electronic equipment orders

rebounded in February (Chart 3) following 'flat' demand since August 2005. However the U.S. recovery is end market dependent. Military electronics (Chart 4) have not followed computers, communication equipment and instruments in the recent rebound. Fortunately U.S. electronic equipment inventories (Chart 5) continue to decline relative to orders. We are clearly not in the same dangerous excess inventory situation that drove the 2001-3 recession.

The consumer end markets boomed last fall. Cell phones enjoyed 20% 4Q'05 growth (Chart 6) even though cell phone component suppliers clearly began their normal post-holiday season slowdown in December (Chart 7). Global personal computer demand was also strong in 2005 (Chart 8) but again PC production (based upon motherboard revenues) slowed

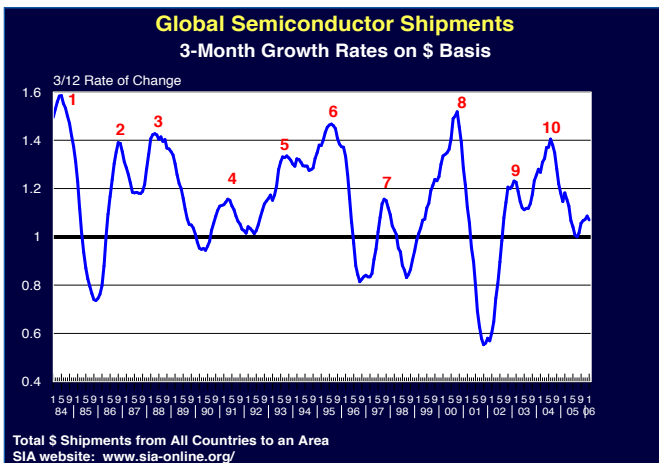


Chart 1.

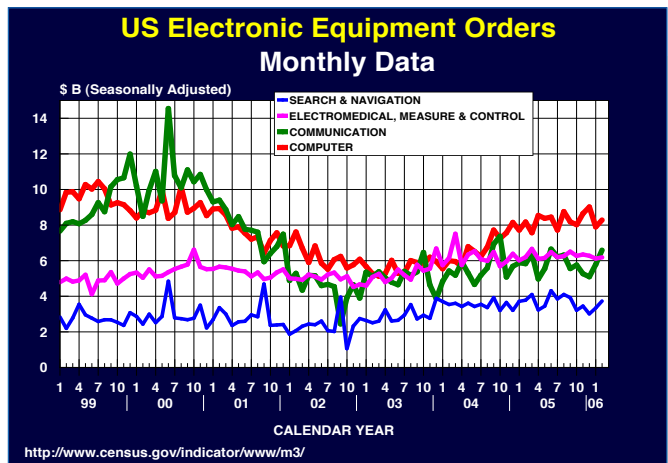


Chart 3.

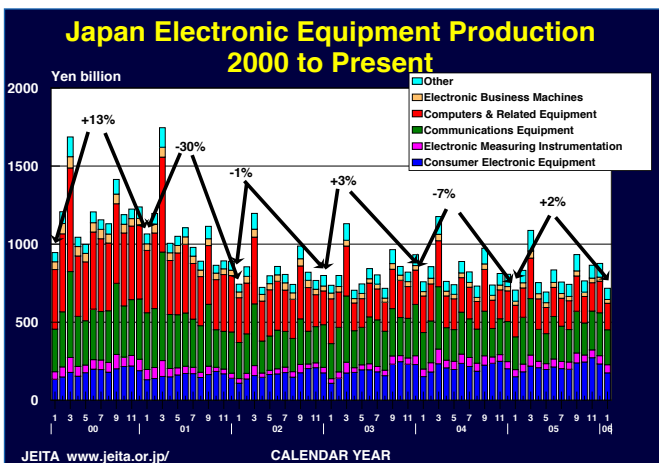


Chart 2.



Chart 4.

sharply following the holiday season buildup (Chart 9).

Capital spending in the semiconductor industry appears to have completed its 'down' portion of the current business cycle in 2005. Although revenues declined 11.3% vs. 2004 (Chart 10), 3-month growth (Chart 11) reached breakeven at year end 2005, suggesting a SEMI CAPEX recovery beginning this year.

In the EMS/ODM industries those companies that are highly consumer electronics dependent saw a very strong fall 2005 followed by a sharp downward correction in early 2006 (Chart 12).

Putting all this information together:

- End market demand is relatively stable
- We are in the growth phase

of the 11th business cycle since 1984

- 2006 has begun with the normal post-holiday seasonal slowing
- 2006 should be a year of modest growth - tempered by rising interest rates and high energy costs.

Chart 13 summarizes Henderson Ventures', the SIA's and SEMI's growth forecasts for 2006.

General business conditions

Worldwide PC shipments are projected to total 235 million units in 2006, up 10.7% from 2005. Most of the growth will be in notebooks as desk-based PC shipments are expected to grow only 1.9% globally (Chart 8).

Microsoft's Vista (Windows

operating system) delay until early 2007 is expected to hurt personal computer and DRAM demand this holiday.

Russia will build a large technology center in the Sverdlovsk region focused on PCB production.

Siemens will open a Bulgarian electronic component manufacturing plant in October that will employ about 100 people

Viasystems divested its wire harness business to Electrical Components International Holdings for approximately \$320 million.

SEMI reported that 2005 global semiconductor equipment sales were \$32.88 billion (Chart 10).

EMS & related assembly activity

Abit-USI's motherboard distribution joint venture will be called Universal Abit Holding Company. Abit was delisted from Taiwan Stock Exchange.

Asustek

- Reorganized into 15 business units enabling each business to have its own R&D, marketing and sales team.
- And MSI lowered motherboard prices by 5% in Europe.
- And Gigabyte are promoting RoHS-compliant graphics cards.
- Will invest US\$30 million in its Suzhou, China unit to expand its PC and related production lines.

Benchmark Electronics closed its PCB assembly plant in Leicester, UK, making about 150 jobs redundant.

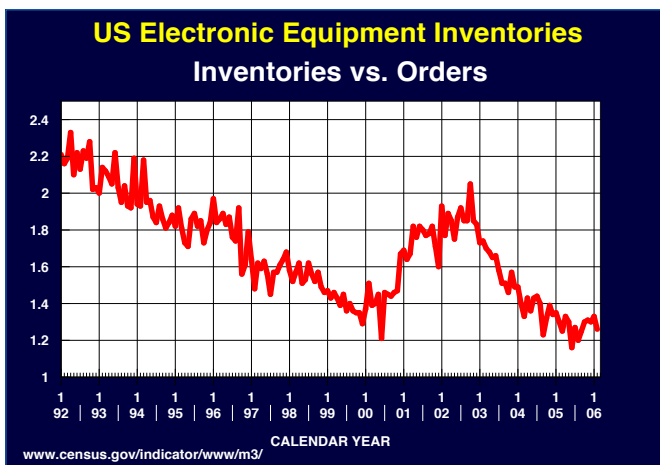


Chart 5.

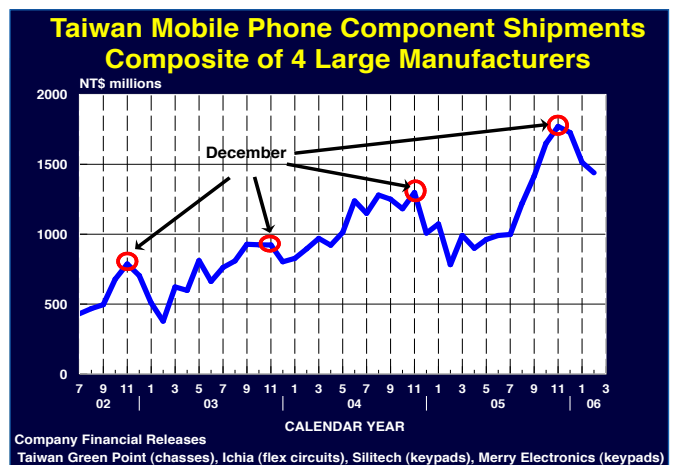


Chart 7.

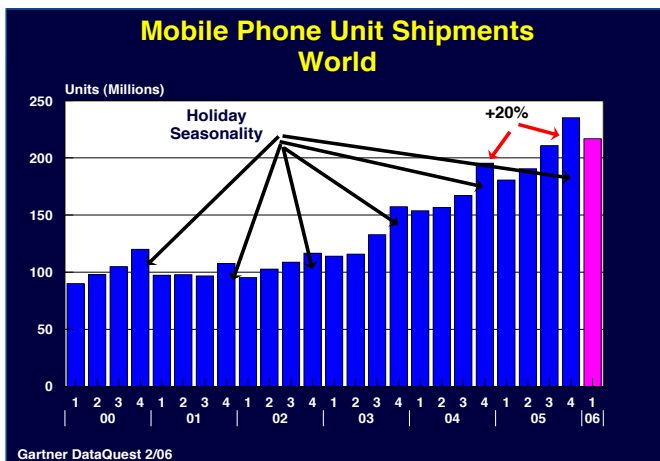


Chart 6.

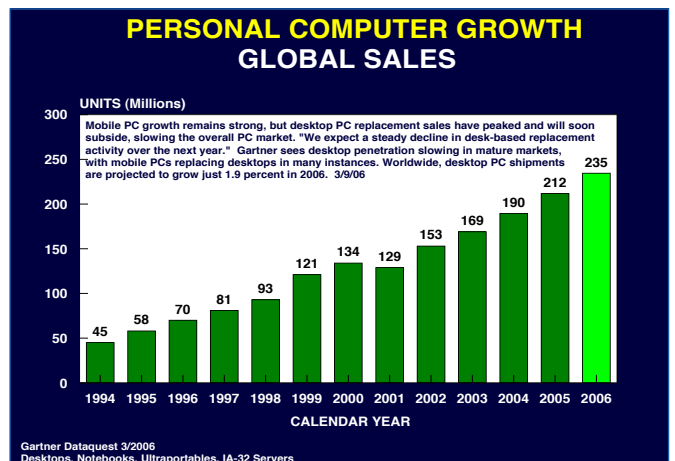


Chart 8.

Borisch Manufacturing, Kentwood, Michigan, a contract manufacturer for the defense industry, is planning a \$3.4 million, 100-job expansion next to its existing 65,000 SF facility. Sales are expected to increase from \$36 million in 2005 to \$45 million this year and more than \$50 million in 2007.

Brio Technology, a privately held EMS provider with plants in Beijing and Shanghai, appointed John Stewart Regional Business Development Manager for Eastern Canada and the US.

Celestica will take over printer distribution for Dell in Nashville, Tennessee.

CirTran

- Projects its first profitable year in FY2005 with world sales growing nearly 1,000%

- in two years.
- Formed a new division to provide product marketing, production, media funding and merchandise manufacturing services.
- Will manufacture RadioBridges™ for Aegis Assessments.

CTS Corporation's Singapore facility achieved ISO13485 certification for medical manufacturing. Facilities in Bangkok, Thailand and in Moorpark and Santa Clara, California, are also fully FDA approved.

Elitegroup Computer Systems reportedly lost HP desktop PC orders to Foxconn and Asustek. **Elcoteq's** CEO sees 2006 profit margin flat due to falling prices of cell phones.

- Set up its second assembly

line in India and its third line will be ready in a few months.

- Sees high telecom network equipment demand in India in the next four years.
- Started personnel negotiations concerning roughly 120 employees in Espoo, Lohja, Salo and Turku in Finland.
- Issues subordinated notes totaling 30 million euros.

EpoX Computer's chairman Steve Hsiao is reportedly under investigation for alleged fraud and embezzlement of NT\$840 million.

Fittec International, an EMS provider for Toshiba and Epson, will set up temporary production facilities in Jiangsu province. Fittec will use HK\$400 million from its HK\$552 million December'05

IPO to build new facilities in Suzhou and Shenzhen.

Flextronics

- Is constructing a 56,000 sq. meter assembly plant in its Chennai Industrial Park to produce handsets, set top boxes and telecom equipment.
- And Mobitex signed a strategic deal where Flextronics became the exclusive manufacturer and supplier of Mobitex's products.
- Became Verigy's primary EMS provider shifting manufacturing from 'in-house' to Flextronics' China facilities.

Foxconn Electronics/ Hon Hai Precision

- Will increase investment in its Kunshan (Jiangsu Province) subsidiary, Hongzhun Precision Tooling

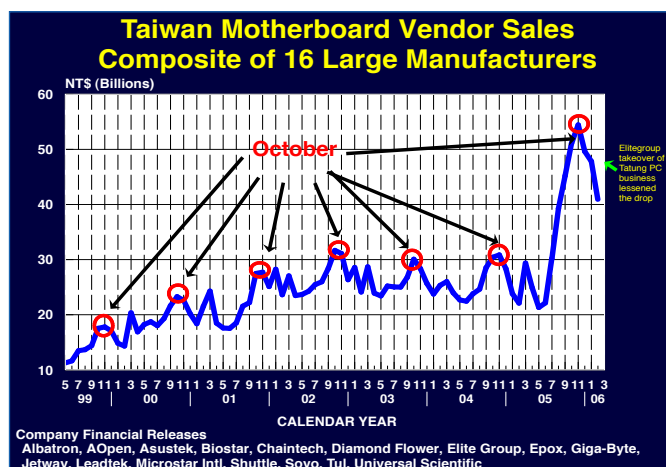


Chart 9.

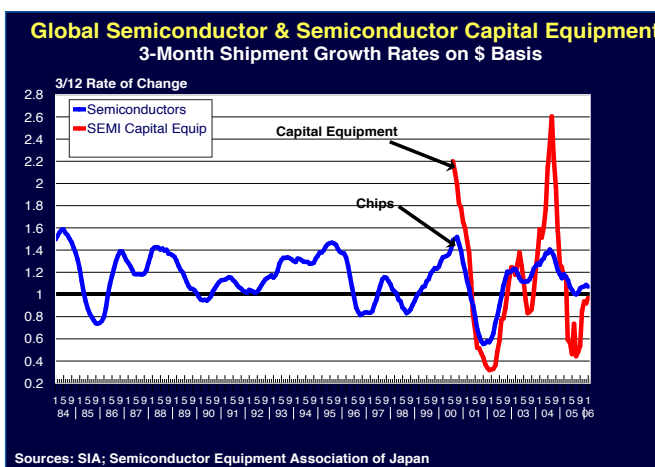


Chart 11.

2004-05 Semiconductor Capital Equipment Market: US\$ Millions; % Year-over-Year

Region	2004	2005	% Change
China	2,683	1,327	-50.5
Europe	3,444	3,262	-5.3
Japan	8,276	8,183	-1.1
Korea	4,614	5,826	26.3
North America	5,812	5,702	-1.9
Taiwan	7,762	5,722	-26.3
Rest of World	4,490	2,862	-36.3
Total	\$37,081	32,884	-11.3

SEMI-SEAJ 3/06

Chart 10.

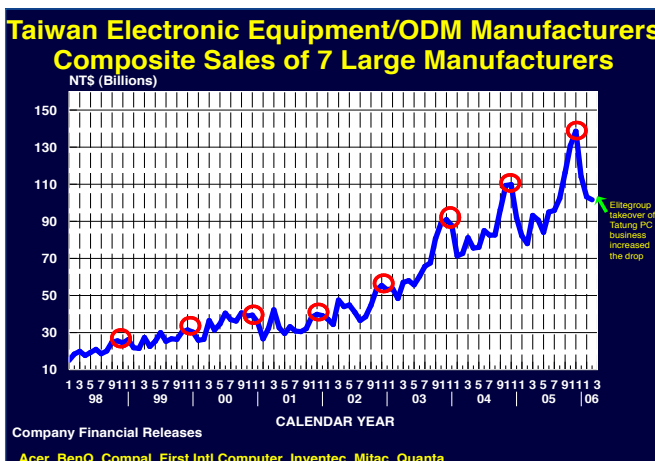


Chart 12.



Quality Seating of Press-Fit Connectors

The new Connector Seating Machine (CSM) 200 provides quality pressing of press-fit connectors to PCBs.

The force distance control of the servo-electric press together with the pre-press check of the pin position and the pin presence check on the lower side of the board guarantees high quality products.

Easy to change tooling together with automatic tool identification and selection of press-profile allows fast change over between different products.

Tyco Electronics Inc.
2405 Maryland Rd. • Willow Grove, PA 19090-1710 • USA
Phone: +1 (215) 784 4577 • Fax: +1 (215) 657 4107 • www.tycoelectronics.com

GLOBAL APPLICATION TOOLING DIVISION

tyco
Electronics

(Kunshan), by US\$17.8 million, through its affiliate Foxconn (Far East).

- Laid off 10% or 300 people in Hungary.
- Has entered the graphics card market.
- Will invest \$110 million (about Rs 485 crore) in Sriperumpudur, India, to manufacture mobile handsets and components.
- Shut down the Finland plant it bought from Eimo, eliminating 400 jobs.
- Withdrew from Taiwan's IA (Information Technology and Automotive) Project. will build an industrial park in southern India to make computers and cell phones

Genesis Electronics

Manufacturing is now accepting lead free & RoHS compliant factory orders for electronic assemblies shipped to European Union and the USA.

Jabil Circuit

- Received FAA repair station certification for its Billerica, Massachusetts, facility.
- Eliminated 65 jobs at its Dublin PCB repair facility.
- Purchased a V-chip license from Tri-Vision.

Kinpo Group may add an assembly line in India. It will announce two acquisitions through its subsidiaries by the end of this year to enhance its integrated supply chain.

MSI and Gigabyte dismissed merger rumors.

Nam Tai Electronics has purchased approximately 1.3 million square feet of land in the Guangming Hi-Tech Industrial Park, Shenzhen, PRC, for new manufacturing facilities

Nam Tai Electronics invested \$3.4 million to equip three additional SMT production lines.

Nokia is reportedly looking to shift orders from Elcoteq SE in Asia (which has 2.4 billion euros of orders from Nokia annually). Quanta Computer, Lite-On Technology, Flextronics International and BYD are reportedly all pursuing Nokia orders. Source: Commercial Times 2/06.

Note Lund received CERN's ALICE Industrial Award for its collaborative work on the new LHC accelerator regarding nuclear and particle physics.

PartnerTech, a Swedish EMS provider, terminated 60 employees at its Karlskoga plant due to slowdown in the defense industry.

Prism Electronics and Micro Circuit Engineering collaborated on 'chip-on-board' and surface mount assembly.

Sanmina-SCI

- And Wavesat agreed to bring WiMAX Mini-PCI to market.
- Kunshan, China, facility received automotive standard (ISO/TS 16949) certification.
- Was named the 'EMS company of the year'

for technology leadership, market diversification, quality manufacturing and customer service by Frost & Sullivan.

- Is considered not likely to lose its Lenovo business worth \$1.1 billion in revenue in 2006.
 - May have to concede to price concessions to maintain the relationship per RBC Capital Markets.
 - Won the 'Breakthrough' Award from Royal Philips Electronics.
- Scanfil** closed its Belgium plant and shifted manufacturing to lower-cost facilities.

Solectron

- And Ericsson collaborated to design a more effective supply chain that reduced manufacturing lead-times by 75%.
- Signed a multi-year contract with IBM for indirect procurement services across 17 countries.
- Executive VP of Worldwide Operations Marc Onetto became a member of the Board of Directors of Microvision.

Sparton Corporation

purchased privately owned medical equipment manufacturer Astro Instrumentation.

Surface Mount Technology will invest US\$45 million to build production facilities in Tianjin Economic-Technological development area.

Three-Five Systems

won bankruptcy court approval to send its Chapter 11 plan to creditors for a vote.

Vogt Electronic received a loan from its major shareholder, Sumida.

Winland Electronics won a 3-year EMS contract with Select Comfort.

XL Telecom conducted an Rs 60cr IPO to raise funds to set up an SMT assembly line.

XTech (Extrusion Technology) opened a final assembly facility in Xiamen, China.

Materials & process equipment

Circuit Foil raised copper foil prices by 20-25% to offset rising costs

Dai-Nippon Screen introduced a new AOI machine 'PI-8700' for high density circuit boards. It is capable of 12.5 micron line/space inspection.

DEK appointed Jim Williams General Manager for Northern Europe

ESI has sold its 500th UV Laser Microvia Drilling System for interconnect applications

Hitachi Chemical increased the price of copper laminates and the other materials 10 to 16% on April 1st.

Indium celebrated its 72nd Anniversary in March.

Matsushita Electric Works

will start the volume production of its halogen-free coverlay film at its JV in China for the flexible circuits for dynamic flex applications.

Nippon Steel Chemical will invest 5 billion yen (\$42 million) to install two 1.5 million sq m/year lines for double-layer copper-clad laminates at its Kyushu, Japan facility.

Orbotech promoted Joachim Barthold to VP of Sales for Central Europe and Customer Support for Electronics Assembly Europe.

Sumitomo Bakelite and Matsushita Electric Works

announced laminate price increases of between 5-16%. (Source: Dr. Hayao Nakahara) CCL prices have risen over 20% during the past five months.

Walt Custer is an independent consultant who monitors and offers a daily news service and market reports on the PCB and assembly automation and semiconductor industries. He can be contacted at: walt@custerconsulting.com or visit www.custerconsulting.com

Jon Custer-Topai is vice president of Custer Consulting Group and responsible for the corporation's market research and news analysis activities. Jon is a member of the IPC and active in the Technology Marketing Research Council. He can be contacted at jon@custerconsulting.com

Global "Electronic Foodchain" Outlook 2006 vs 2005

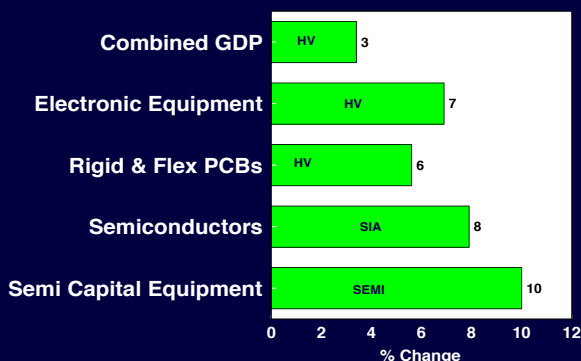


Chart 13.