

Monitoring the recovery.... Patience may be required



Walt Custer and Jon Custer-Topai

Global electronic supply chain growth slowed significantly in 2Q'12 vs. 2Q'11 (Chart 1) as world OEM sales expanded just 1%. Only the data storage sector (up 30%) grew significantly as HDD makers played catch-up in 2Q'12 after missing first quarter sales opportunities because of the Thai floods and also benefitting from higher prices facilitated by lower competition due to acquisitions.

Manufacturing growth continued to slow in the third quarter as the JPMorgan Global Purchasing Managers' Index (Chart 2) dropped well into "contraction" territory in August.

The large EMS (Chart 3) and ODM (Chart 4) companies saw their 2Q'12 revenue growth soften or decline as electronic equipment demand was hurt by weak global electronic equipment demand. Asia's exports to Europe were hit especially hard.

Semiconductor shipments (a measure of electronic assembly activity) have flattened in SE Asia and Europe and declined in N America in July (Chart 5), further confirming the global slowdown.

Looking forward by using the 3/12 growth rates and the JPMorgan PMI as a leading indicator (Chart 6), it appears that

the worst of this downturn might soon be over. Although both world PCB and semiconductor 3/12 growth rates remain negative, they are improving. Since the PMI (global leading indicator) is still in "contraction" territory (minus 5%), our much-hoped-for electronic supply chain recovery is not imminent. We may not reach "break even" until year end. Fortunately we can continually monitor the progress of the recovery using regularly updated PMI, PCB, semiconductor and electronic equipment monthly data.

Chart 7 is my colleague Ed Henderson's most recent forecast of electronic equipment production growth by region by year. 2012 will not set any records for stellar performance!

Keep watching the monthly data to see how the "recovery" is progressing.

End markets

Computers & Peripherals

- Worldwide PC market is expected to grow 0.9% to 367 million units in 2012.—IDC
- Worldwide high performance computing technical server market revenue dipped 0.9% to \$2.4 billion for 22,998 units in 2Q'12.—IDC

- Worldwide server shipments grew 1.4% to 2.4 million units in 2Q'12 while revenues fell 2.9% to \$12.9 billion.—Gartner
- Worldwide HDD shipments grew 8% q/q to 157 million units in 2Q'12.—IHS iSuppli
- Worldwide disk storage systems factory revenues in 2Q'12 grew 8% y/y to \$8.1 billion while capacity shipments expanded 24.8% y/y to 6,667 petabytes.—IDC
- Worldwide hardcopy peripherals shipments declined 8.4% to 26.5 million units in 2Q'12.—IDC
- Graphics add-in board shipments fell 6.5% q/q to 14.8 million units in 1Q'12.—Jon Peddie Research
- Datacom
- Broadband aggregation equipment revenue rose 5% q/q to \$1.72 billion in 2Q'12.—Infonetics
- Global microwave equipment market increased 16% q/q and 6% y/y to \$1.2 billion in 2Q'12.—Infonetics Research
- Global optical network equipment market (WDM and SONET/SDH) grew 15% q/q and 10% y/y in 2Q'12.—Infonetics
- Global infrastructure equipment spending by wireless carriers is

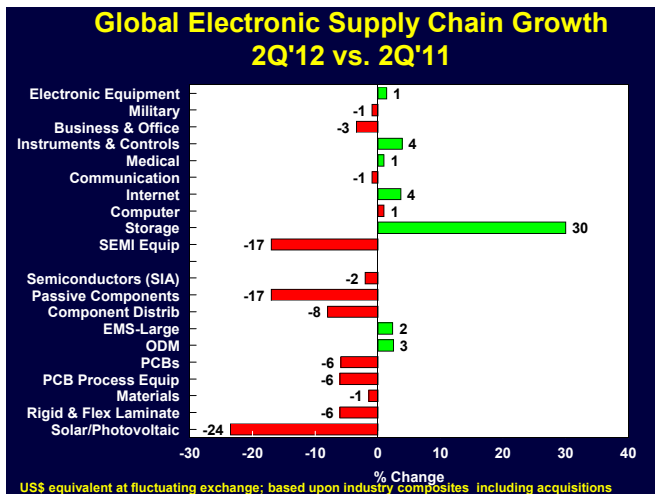


Chart 1.



Chart 2.

expected to rise 8.3% y/y to \$45.5 billion in 2012.—IHS

- Worldwide Ethernet switch market grew 8.5% y/y to \$5.5 billion in 2Q'12.—IDC

Mobile Communication

- Worldwide mobile phone sales fell 2.3% y/y to 419 million units in 2Q'12.—Gartner
- Smartphone shipments are forecast to account for 54% of total cellphone market in 2013, up from 46% in 2012 and 35% in 2011.—IHS iSuppli

Other

- Global connected automotive infotainment system shipments are expected to grow from 5.7 million in 2012 to 50.9 million in 2017.—ABI Research
- Global flat-panel TV shipments rose 3.6% q/q to 48.9 million units in 2Q12.—Displaybank
- China's electronics manufacturing industry declined 14% y/y to ¥122.72 billion in first seven months of 2012.—Ministry of Industry and Information Technology

EMS & assembly

Global EMS design market had revenues of \$11.93 billion in 2011 and is expected to grow to \$29.62 billion in 2018.—Frost & Sullivan

3CEMS Group subsidiary, Broadteam Technology received TS16949 certification. AER Technologies added a PACE IR 3000 BGA rework system.

API Technologies received an \$8.1 million order to provide electronics solutions for tactical surveillance systems.

Artaflex cancelled its acquisition agreement with MTI International.

Asteelflash acquired EMS EN ElectronicNetwork.

Asustek outsourced 50% of motherboard shipments to GBM.

Compal cut its 2012 shipment target by 14% to 40.5 million units.

EE Technologies installed an Assembléon iFlex pick & place machine.

Elitegroup Computer Systems expanded its subsidiary, Golden Elite Technology (Shenzhen) in China to 209,280 square

meters.

Everlight ventured into contract LED lighting manufacturing.

Firstronic installed a Plex Online ERP system.

Flextronics

- assembled the microelectronics for NASA's Curiosity Rover.
- and Nokia Siemens built an assembly plant in Brazil for 4G wireless equipment.
- terminated BlackBerry production in Penang, Malaysia.

Foxconn/Hon Hai

- began production of OGS touch panels for notebooks.
- increased wages for its workers in Zhengzhou, China.
- is building a factory in Serang, Banten.
- reduced overtime for its Chinese workers to less than 9 hours a week.
- will invest 100 billion yuan over next five years to build eight major production bases in Jincheng, Shanxi, China.
- invested NT\$ 1.9 billion (US\$ 63.3 million) in an incubator and cloud

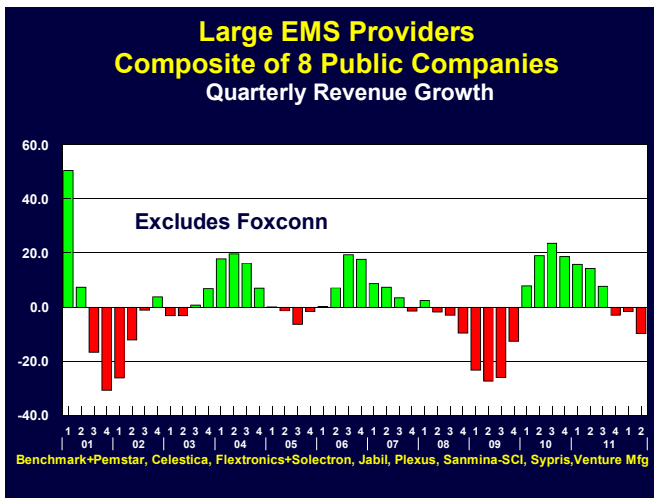


Chart 3.

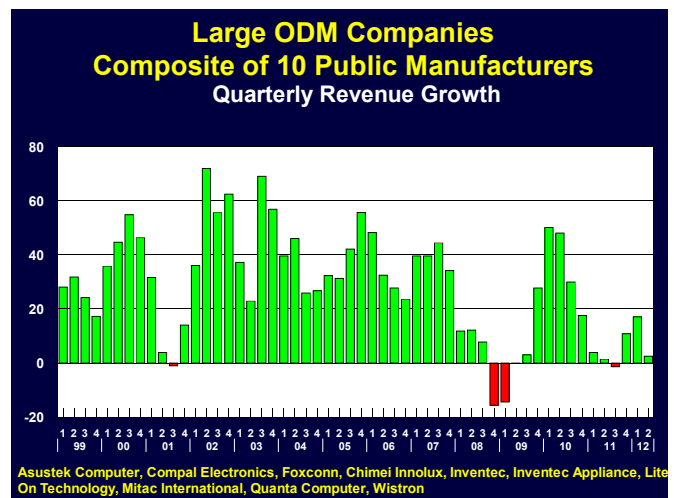


Chart 4.

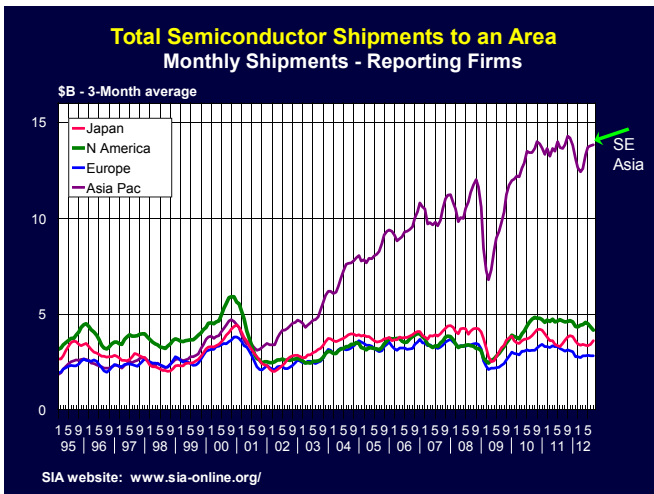


Chart 5.

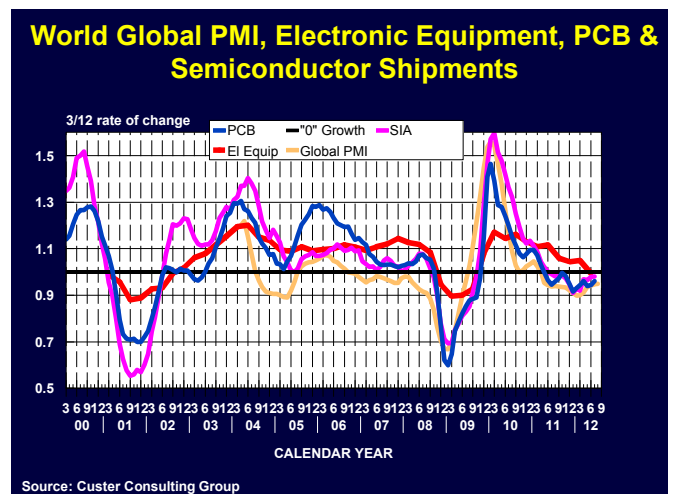


Chart 6.

computing center in the Kaohsiung Software Technology Park, Taiwan.

- Ichiro Mihara became VP of Sharp's Sakai Plant.
- received NT\$4,581,521 from LOTES for breaches of a licensing agreement.
- raised NT\$3.3 billion (US\$100m) from sale of its fourth corporate bond.

Kitron received long term manufacturing agreement from Kongsberg Defence & Aerospace.

MD ELECTRONICS expanded its plant to over 30,000 SF in Jamestown, New York.

Mega Tech added a Juki KE-1080LN high-speed flexible mounter.

On-Track Technology installed its second Rehm VX series convection reflow oven.

PanLink acquired LRZ Commerce.

PRIDE Industries installed two PYRAMAX 125A reflow ovens in Roseville, California.

Quanta plans to move its notebook production lines to Chongqing, China by 2014.

RiverSide Electronics purchased a Nordson Asymtek Select Coat SL-940E coating machine.

Saline Lectronics celebrated its 10th-year anniversary.

Schumacher Electric installed a Juki KE-1080LN high-speed flexible mounter in Matamoros, Mexico.

SigmaTron opened an 112,109 SF facility in Tijuana, Mexico.

Smyczek purchased SMT 3D SPI equipment from Viscom.

Sonic Manufacturing Technologies became a CEM for all Sorrento products.

SouMac Assembly added a Paraquda pick & place machine from Essemtec at its newly opened factory in Portsmouth, UK.

Spectrum Assembly achieved AS9100 registration.

Stadium Group acquired all issued share capital of IGT Industries.

tbp electronics purchased an Aegis MES system for its facilities in Dirksland and Eersel, Netherlands.

Whirlpool ended PCB assembly in Norrköping, Sweden and shifted production to Flextronics.

Wood & Douglas added two new MYDATA MY100SX14 pick-and-place machines and a MY500 solder jet printer.

Zentech received five-year blanket purchase agreement to support advanced electronics contract manufacturing for the U.S. Army.

PCB fabrication

Japanese PWB industry revenue increased 7.1% m/m and 2.7% y/y to 52.99 billion yen in June 2012.—METI

Taiwan PCB suppliers (that operate at home and in China) are projected to grow 2.23% to NT\$517.5 billion (US\$17.30 billion) in 2012.—TPCA

Taiwan-based PCB makers in China and Taiwan are expected to grow 5.6% q/q but fall 1.1% y/y to NT\$135 billion (US\$4.52 billion) in 3Q'12.—IEK

Aspocomp expanded its Viafill HDI capability in Oulu, Finland.

AT&S is building its 7th international factory in the Yufu Industrial Park in Liangjiang New Area, China.

Bare Board Group was ranked 4923/5000 on the Inc. list of the US's fastest-growing private companies in 2012.

Circuit Check acquired Cimtek.

DIVSYS received ISO 9001:2008 approval from EAGLE registrations.

Dyconex added Hitachi CO2/UV laser drill equipment.

Faraday Technology developed an electrochemical cell geometry based on novel flow mechanism for uniform processing of PCBs.

production bases to 10 and consolidate its major PCB lines spread across 28 plants into five bases by April, 2014.

Invotec acquired Printed Electronics Ltd. Leiterplatten Pfullingen applied for insolvency proceedings.

Multilayer Technology completed its AS 9100C surveillance audit.

Orbit One added 800 square meters of plant for PCB cleaning and varnishing in Prabuty, Poland.

PPC Electronic declared bankruptcy.

Printline celebrated its 25 year anniversary. **Rainbow Technology Systems** appointed Mark Munley Senior Sales Executive.

Sanmina-SCI's Singapore PCB facility received NADCAP accreditation for the aerospace industry.

Shenzhen Xindahui entered the international flex circuit board market. Somacis acquired Hallmark Circuits.

Viasystems shifted production to its other existing PCB facilities after its Guangzhou China facility experienced a fire.

Westak appointed Lou George as COO for its California manufacturing facility.

Materials & process equipment

AEM added an additional production line to its Changshu, China FCCL facility.

Ascentech CTO & Partner Gregory Alexander received a distinguished Committee Service Award from IPC.

CGI Americas launched new website at www.cgi-americas.com.

Chemcut appointed Mike Burke Field Service Manager.

Co-Tech increased its monthly production capacity to 30 tons of copper foil with the addition of three machines.

DKN Research introduced trial kits for its advanced screen printing process with printable electronics.

Doosan began operation at its FCCL plant in Changshu, China.

Dow Chemical named Dominic Yang Business President for Electronic Materials.

Dow Corning named Eric Peeters VP for Electronics Solutions.

Enthone appointed Emmanuel Colchen Regional Business VP, West Europe, Lammert de Boer, VP for Central and East Europe and Thomas Ahrens, Regional VP.

Europlacer North America

- appointed Viet Nguyen Senior Field Service Engineer.
- installed IINEO-II at New Age EMS in Attleboro, MA.

Indium promoted Andy Mackie, PhD, MSc to Sr. Product Manager, Semiconductor and Advanced Assembly Materials and

Flexium Interconnect

expects its capacity utilization rate to rebound to 70% in 3Q and to 90% in 4Q.

Fujitsu's Nagano PCB production facility added a non-chemical feed filtration system from Toshiba for treating waste water. Graphic Plc. acquired Printca Denmark.

Hitachi will half the number of mold

Electronic Equipment Production Growth					
Current \$ Growth Rates Converted @ Constant Exchange Rates					
	2010	2011	2012	2013	2014
World	15.3	1.4	2.0	6.1	7.3
USA	1.9	-1.6	-0.9	2.6	3.4
W Europe	6.6	4.1	-2.5	2.4	4.1
Japan	11.1	-18.7	-1.7	2.7	4.5
Four Tigers	13.5	3.8	2.6	5.1	8.2
China	28.4	5.1	3.1	8.4	9.1

Henderson Ventures 9/2012
www.hendersonventures.com

Chart 7.

Jordan Ross to Sr. Product Manager, Engineered Solders and Thermal Materials.

Iteq is expanding its FCCL capacity in Taiwan and Wuxi, China.

JUKI Automation Systems Europe named Andreas Polzer Director of Technical Sales.

LPKF began trading on the TecDAX.

Microscan named Scott McKay Global Director, Channel Management and Commercial Marketing.

Nordson named Ken Forden GM of Nordson EFD Division.

Panasonic Factory Solutions appointed Glenn Shaffer Business Development Manager. Sono-Tek restructured its organization and appointed Stephen Harshbarger President.

Vitronics Soltec added 3,000 SF for development and testing in Hampton, New Hampshire.

Semiconductors, passive components & SEMI equipment

Automotive IC vehicle content is expected to grow from \$25.3 billion (\$350/vehicle) in 2012 to \$37.3 billion by 2017.—Databeans

DRAM market is expected to reach \$29 billion in 2012.—GBI Research

European semiconductor distribution sales declined 14.7% to 1.46 billion euro in 2Q'12.—DMASS

Global semiconductor R&D spending is expected to grow 10% y/y to \$53.4 billion in 2012.—IC Insights

Semiconductor spending among OEMs headquartered in the Asia-Pacific region is projected to grow by an average of 6% in 2012, compared to 2.5% growth for all global OEMs.—IHS iSuppli

Silicon wafer area shipments increased 20% q/q to 2,447 million sq. inches in 2Q'12.—SEMI Taiwan IC packaging materials market shipments are expected to grow 5% to NT\$23.78 billion (US\$794 million) in 3Q'12.—IEK

SEMI Equipment

- North American semiconductor equipment manufacturers posted \$1.28 billion in orders worldwide in July 2012 (3-month average basis) and a book-to-bill ratio of 0.87.—SEMI
- European semiconductor equipment sales are projected to reach \$3.3 billion in 2013.—SEMI
- Front-end fab equipment spending is expected to grow 16.7% to US\$42.7 billion in 2013.—SEMI

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