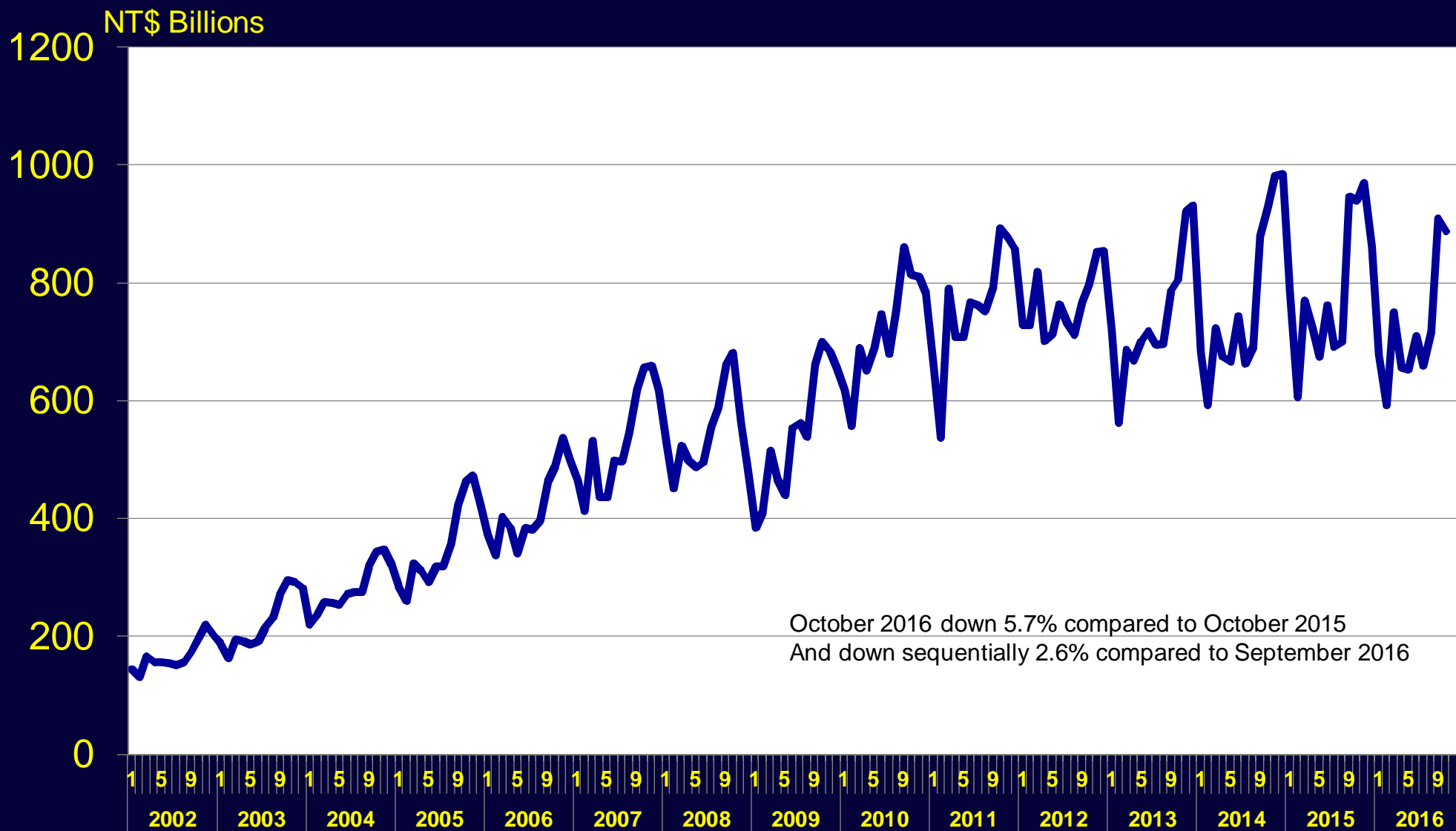
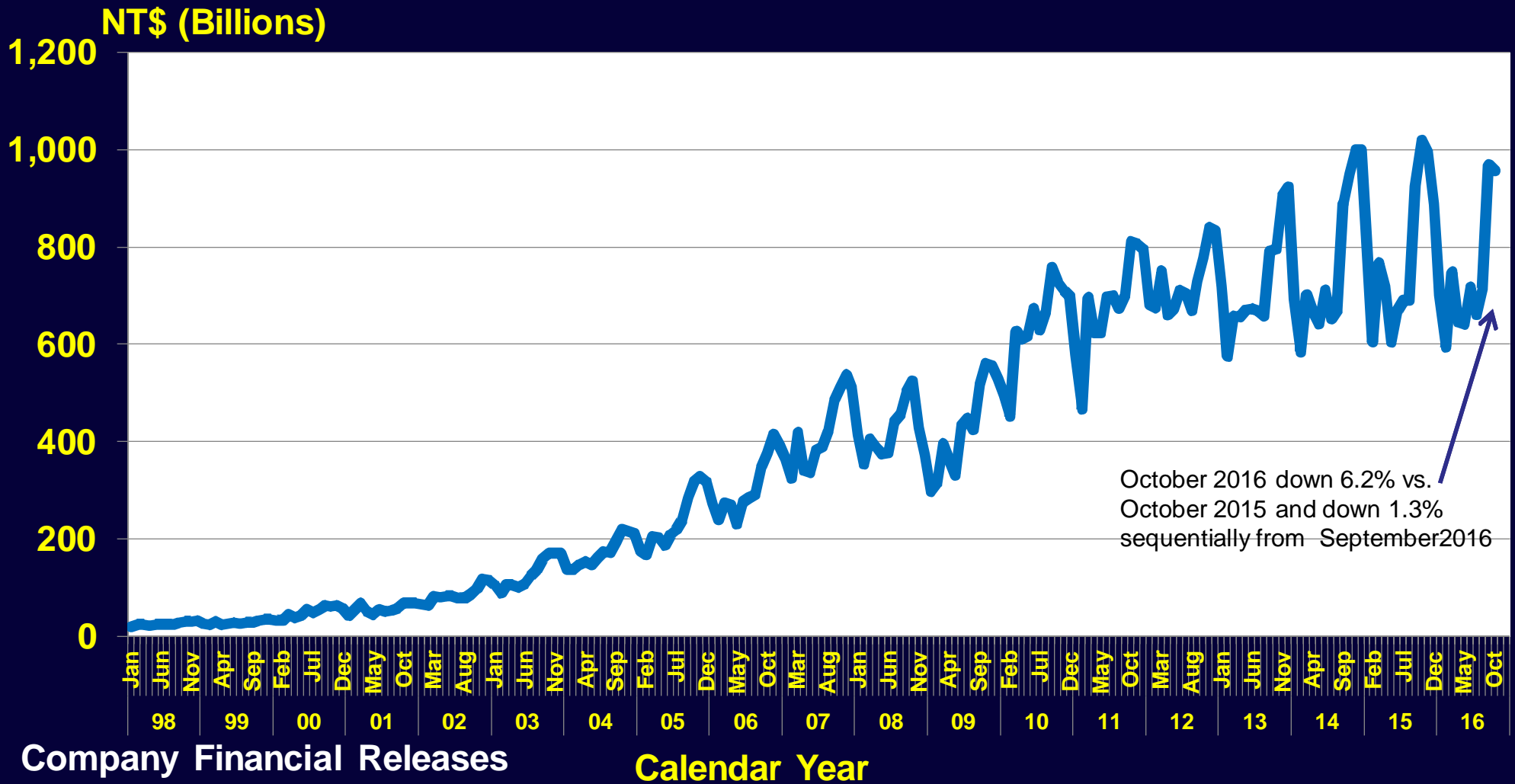


# Taiwan/China Electronic Equipment Producers Composite of 101 Manufacturers Consolidated Revenue



Taiwan listed companies, often with significant manufacturing in China

# Taiwan ODM Companies Composite Sales of 11 Large Manufacturers



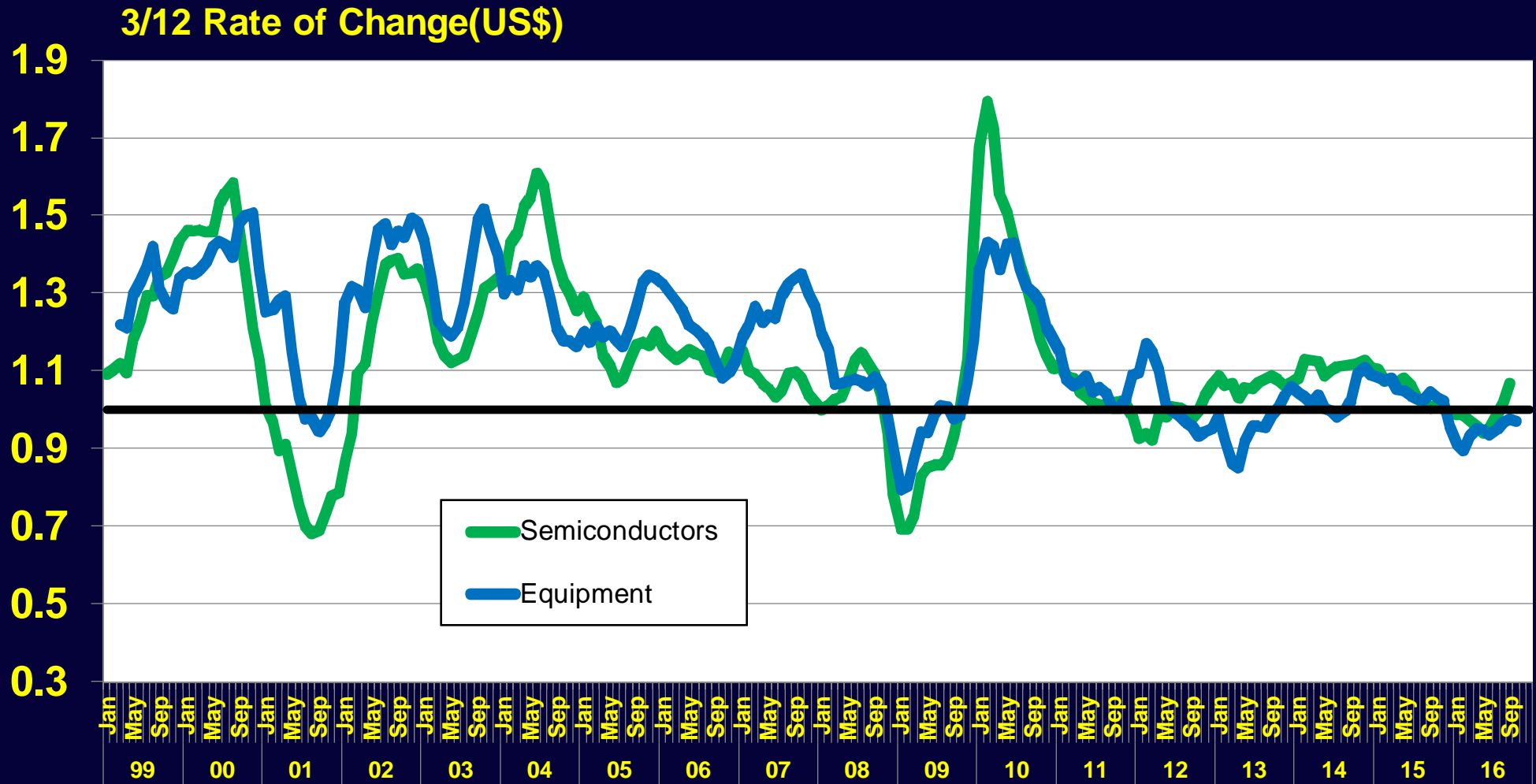
Asustek Computer, Chei Mei, Compal Electronics, Foxconn, Chimei Innolux, Inventec, Inventec Appliance, Lite On Technology, Mitac International, Pegatron, Quanta Computer, Wistron, Chei Mei Display replacing Chei Mei & Innolux Display 3/10 & later

# Taiwan Display Producers Composite of 6 TFT-LCD Panel Manufacturers



Taiwan listed companies, often with significant manufacturing in China

# Semiconductor Shipments to Asia/Pacific vs. Taiwan/China Electronic Equipment Production



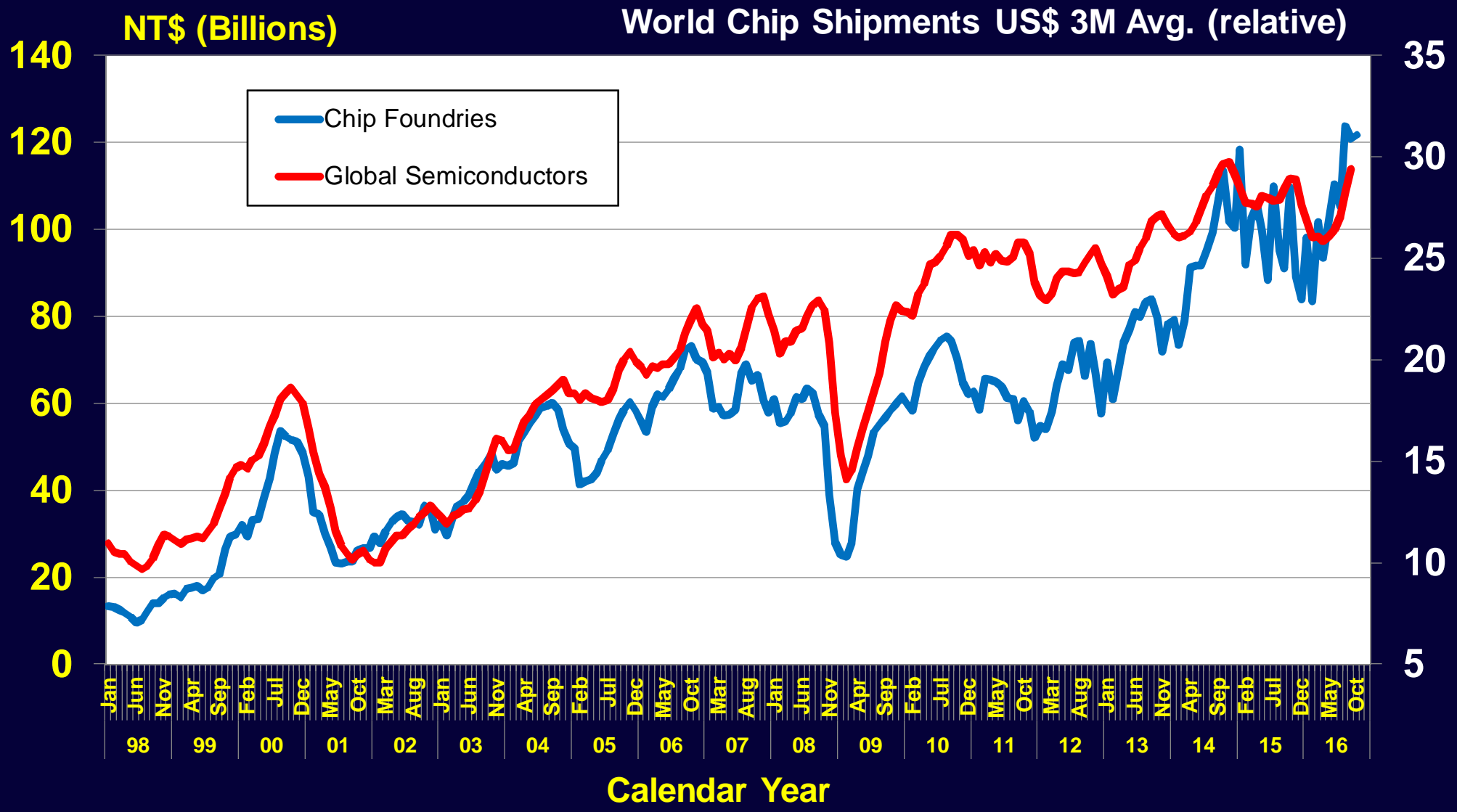
Total \$ Semiconductor Shipments from All Countries to SE Asia [www.sia-online.org/](http://www.sia-online.org/)  
 101 Taiwan listed companies, often with significant manufacturing in China

# Taiwan Wafer Foundries Composite of 14 Manufacturers



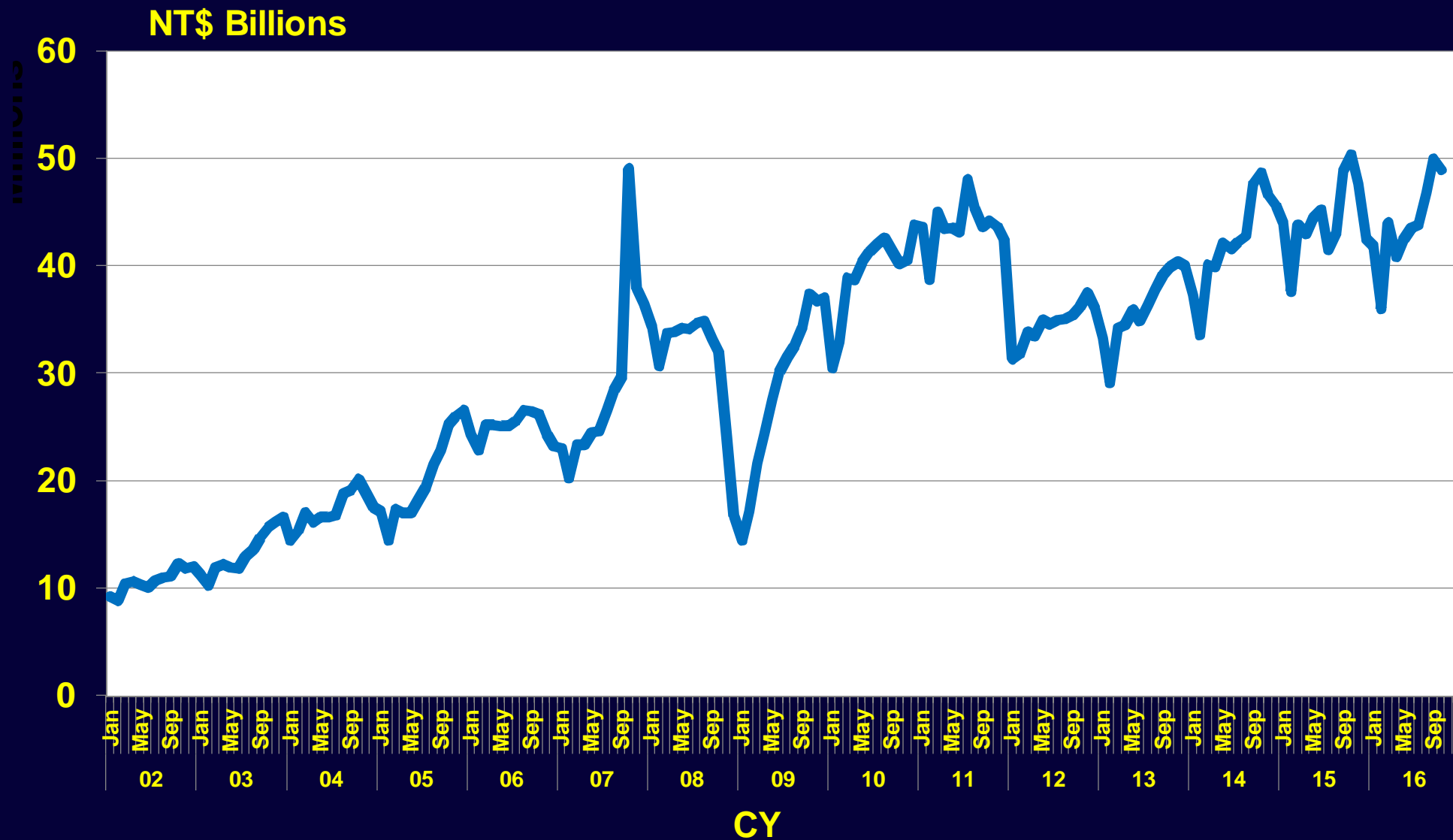
VIA Technologies, Advance Microelectronics, Advance Wireless Semiconductor, Epasil Technologies, Inotera Memories, Macronix Intl, Mosel Vitelic, Powerchip Semi, Precision Silicon, ProMOS Tech, TSMC, United Microelectronics, Vanguard International Semi, Winbond Electronics

# Taiwan Wafer Foundry Composite vs. Global Semiconductor Revenues



14 Taiwan Company Financial Releases & SIA

# Taiwan Package & Test Companies Composite of 20 Manufacturers



ASE, Ardentec, ChipMOS Tech, Chipbond Tech, E'dale Tech, Formosa, Advance Tech, Fupo Elec, Greatek Elec, International Semiconductor Tech, King Yuan Elec, Lingsen Precision, Orient Semiconductor, Powertech Tech, Signality System, Sigurg Microelectronics, SPIL, Thalín Semiconductor, Vate Tech, Walton Advanced Tech

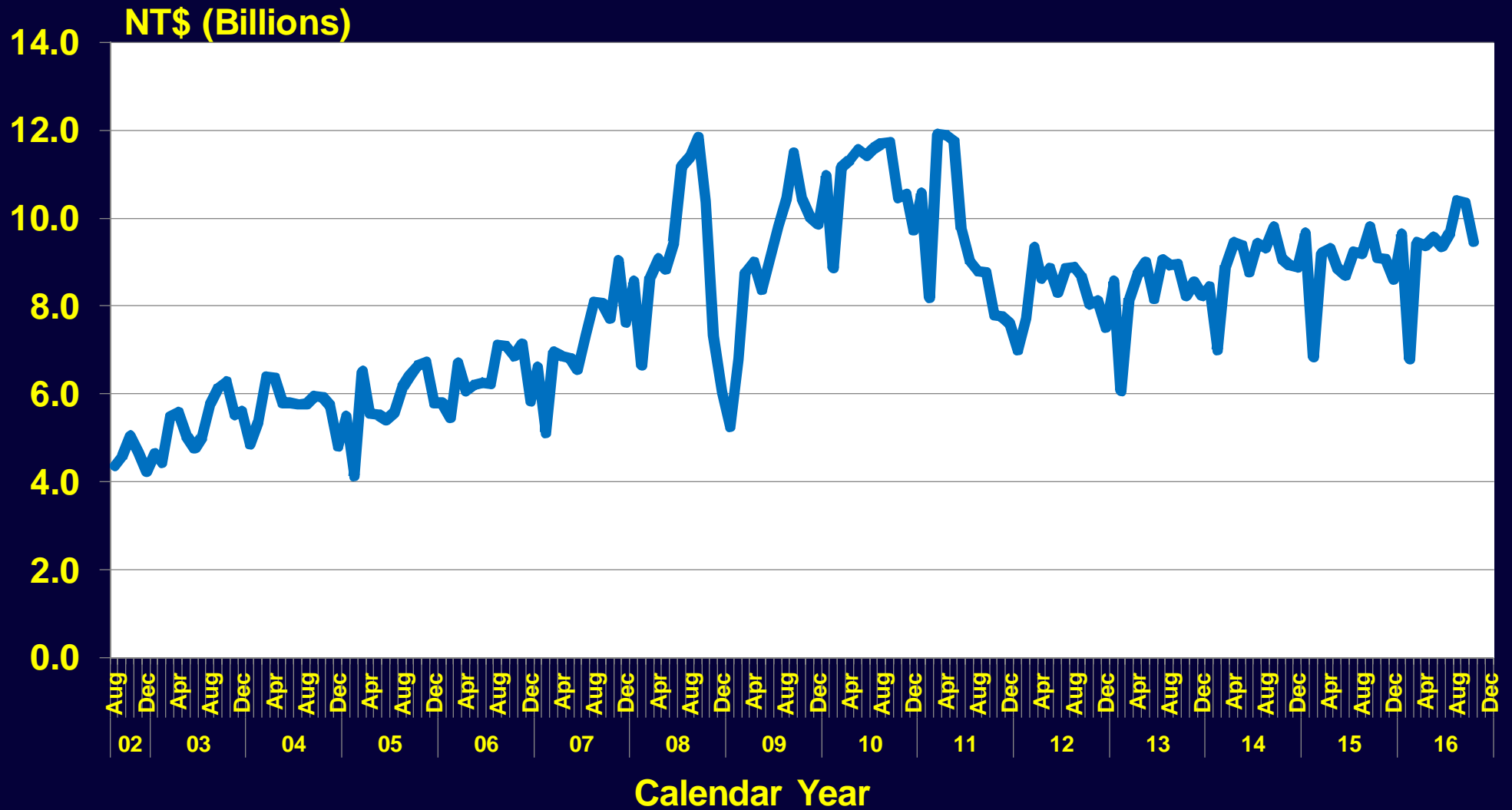
# Taiwan Memory Companies Composite of 8 Manufacturers



Silicon Integrated Systems, Inotera Memories, Macronix Intl, Mosel Vitelic, NanYa Tech, Powerchip Semiconductor, ProMOS, Winbond Elec



# Taiwan Passive Component Companies Composite Sales of 25 Manufacturers



Chilsin Electronics, Cyntec, (FCE) Feei Cheng Enterprise, Holy Stone Enterprise, 3H (Honey Hope Honesty Enterprise), HJC (Hua Jung Components), Inpaq, Jaan Chem Technological, Kaimei Electronic, King Core Electronics, Laser Tek, Leatec Fine Ceramics, Lelon Electronics, Linton Technology, PTTC (Polytronics Technology Corp), PDC (Prosperity Dielectrics Co), Ralec Electronic, Ta-I Technology, Taiwan Alpha Electronic, Team Young Advanced Ceramics, Teapo Electronic, Thinking Electronic Industrial, WTC (Walsin Technology Corp), Yageo, YCTC (Yeh-Chiang Technology Corp)

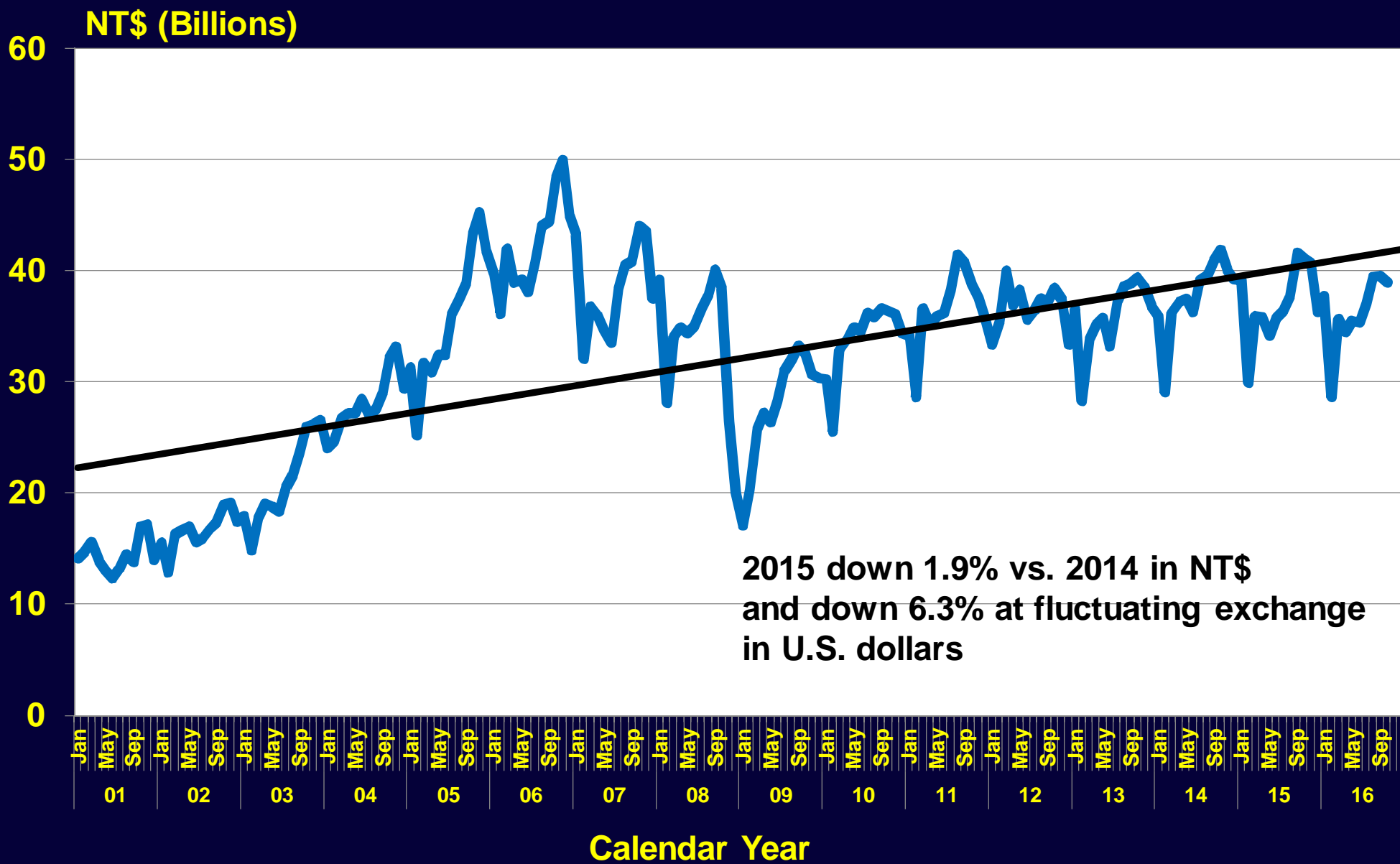
# Taiwan Solar/Photovoltaic Panel Companies Composite of 27 Manufacturers



Acter, Big Sun Energy Technology, Chen Full Intl, Danen Technology, Daxon Technology, DeISolar, Delta Electronics, e\_TON Solar Tec, Invetec Group, Eversol, Gigasolar materials, Gintech, Green Energy Technology (GET), Higher Way Elec, Kenmec Mechanical, Ligitek, Motech, Neo Solar Power, Phoenixtec Power Co (PPC), Powermate, Precision Silicon, Sino-American Silicon Products (SAS), Solar Applied Materials Technology, Solartech Energy Corp, Sunrise Global Solar Energy, Sysgration, Tainenergy Tech, Tera Autotec, Tyntek, Wafer Works, Wholetech System Hitech

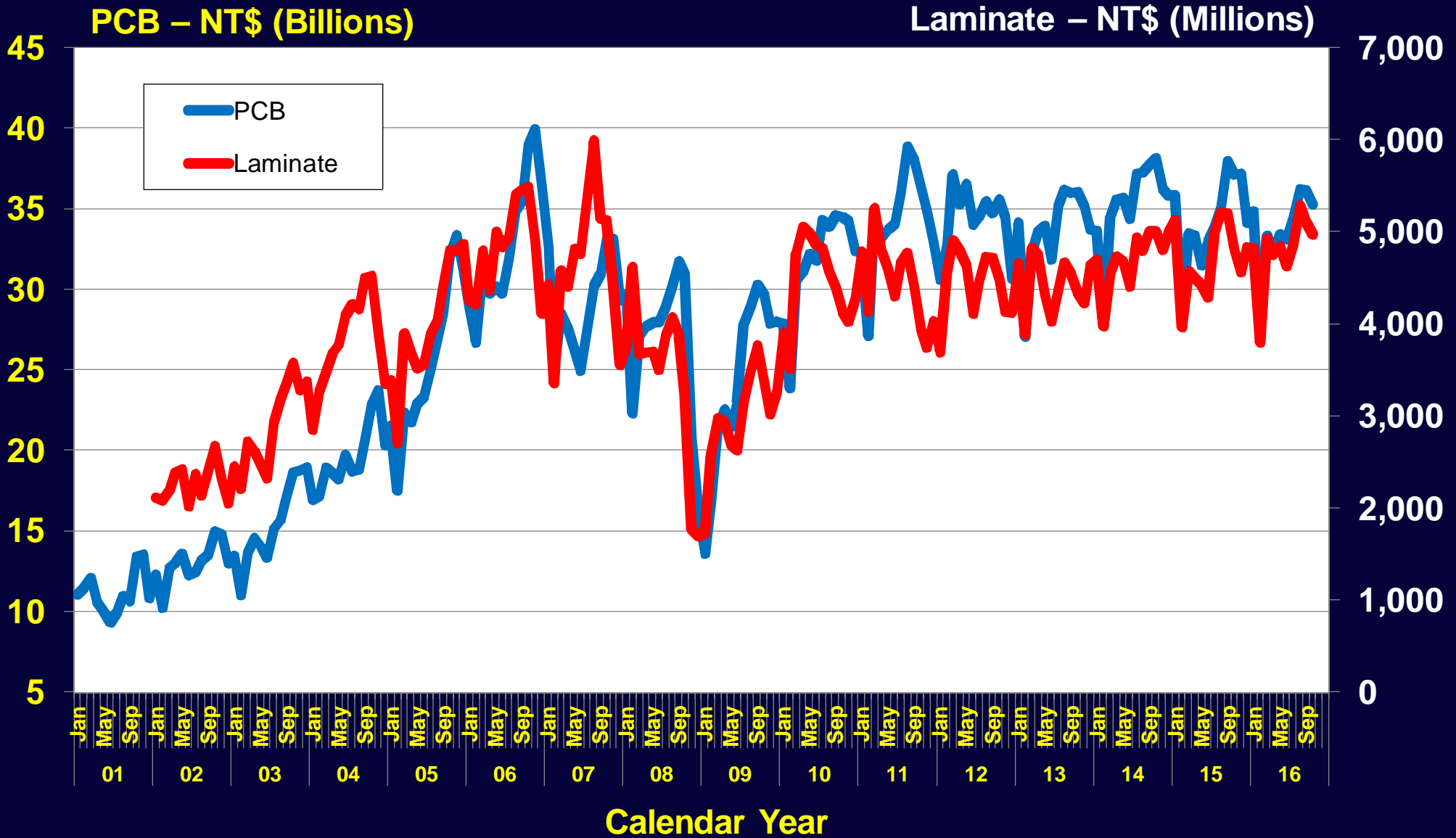
# Taiwan Rigid & Flex PCB Shipments

## Broad Composite of 46 Taiwan-listed Manufacturers



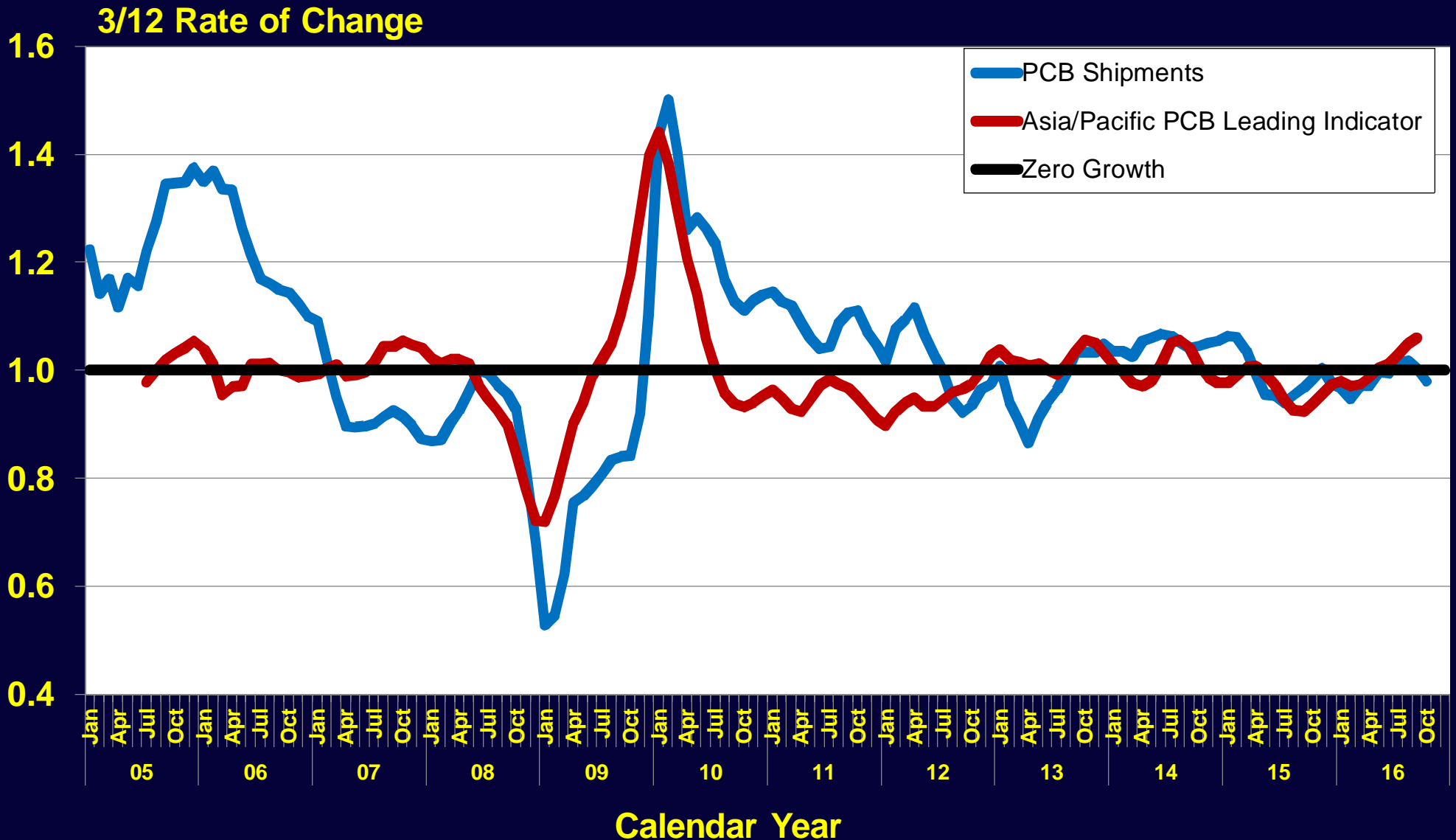
# Taiwan Shipments

## 42 Rigid PCB & 8 Laminate Manufacturers



Company Financial Releases

# Asia Pacific CCG PCB Leading Indicator vs. China/Taiwan PCB Shipments @ Fluctuating Exchange

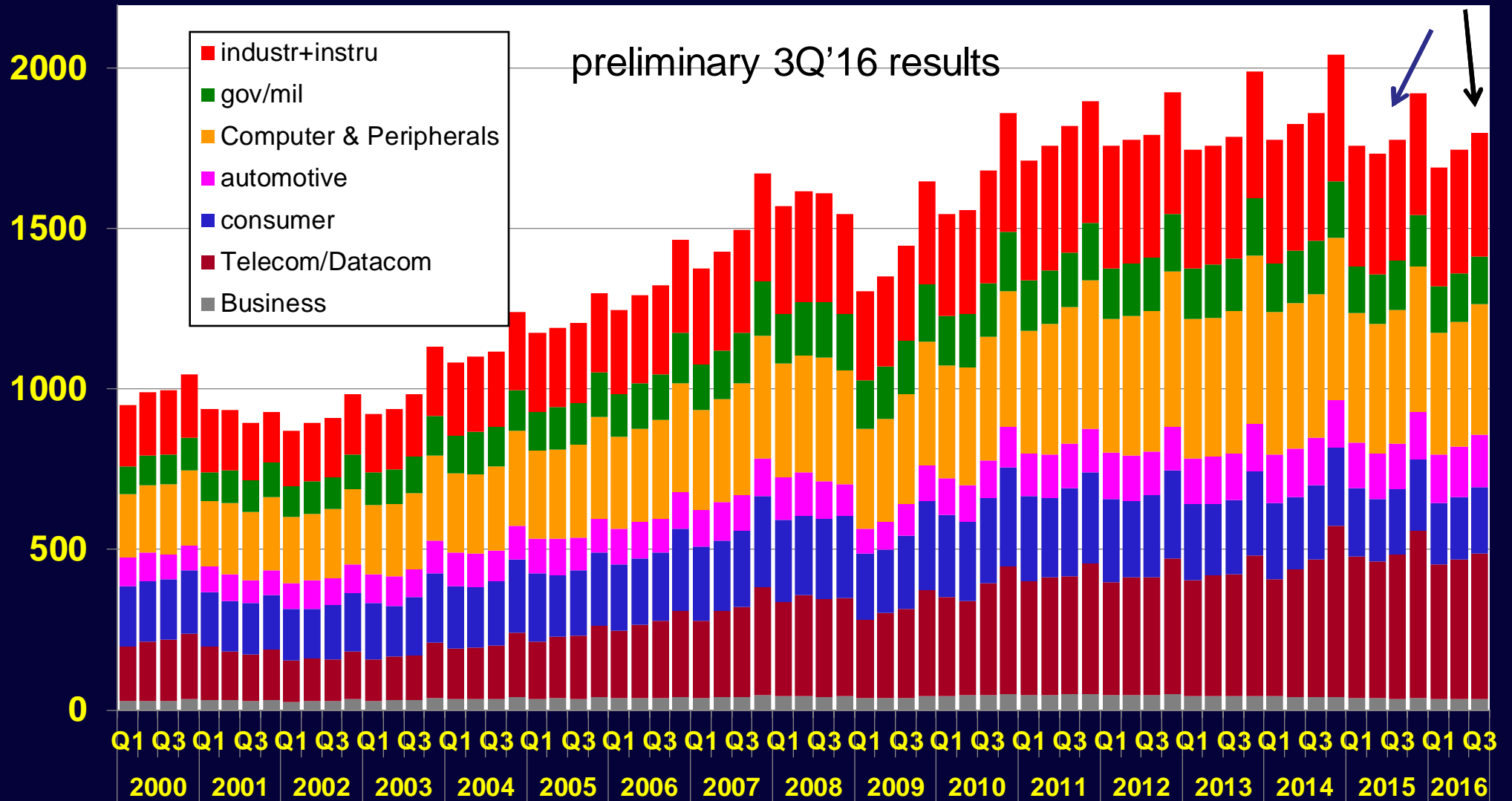


Source: Custer Consulting Group

# World Electronic Equipment Production By Type

+1.5%

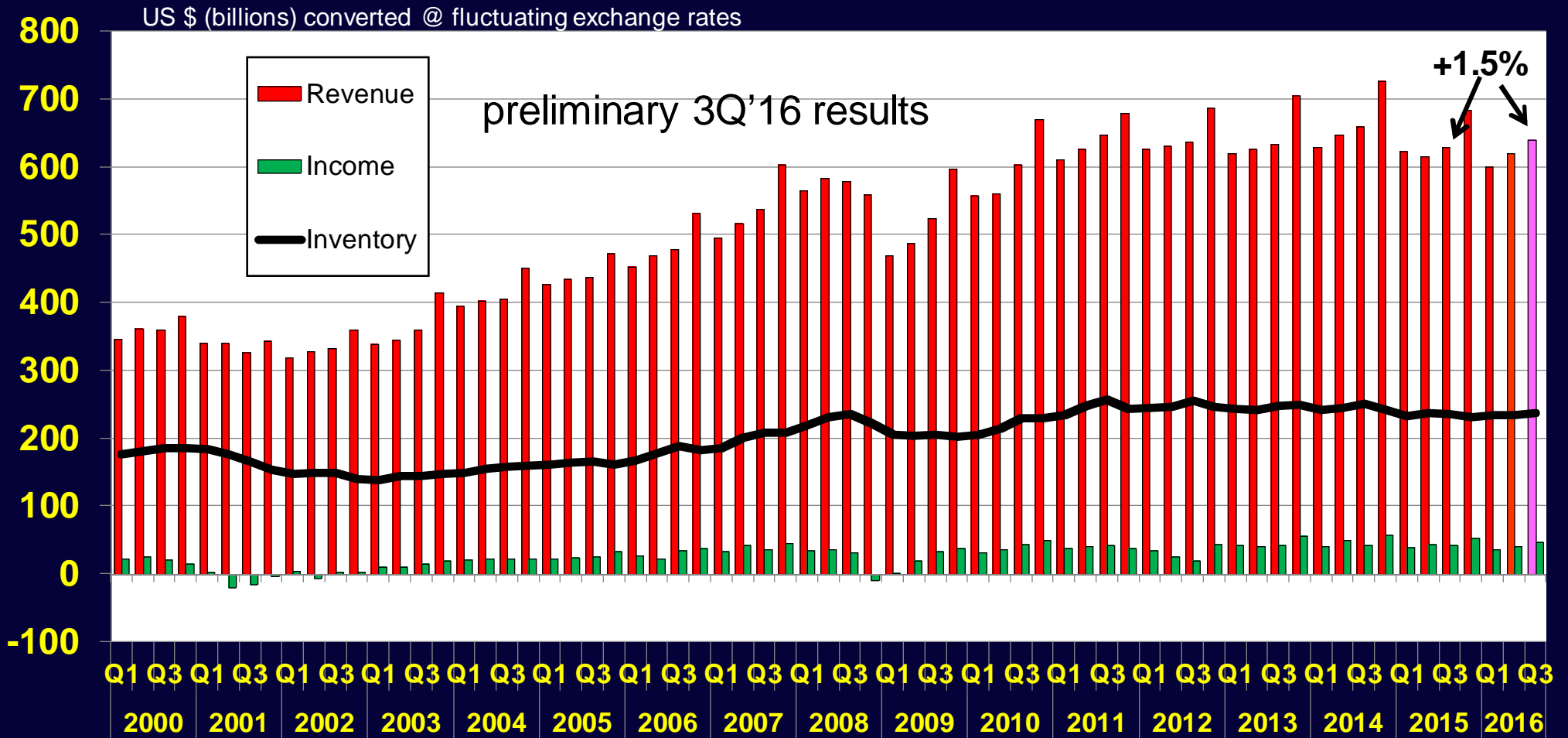
Annual Rate \$B (converted @ fluctuating exchange rates)



# Electronic Equipment Suppliers

## Composite of 213 Public Companies

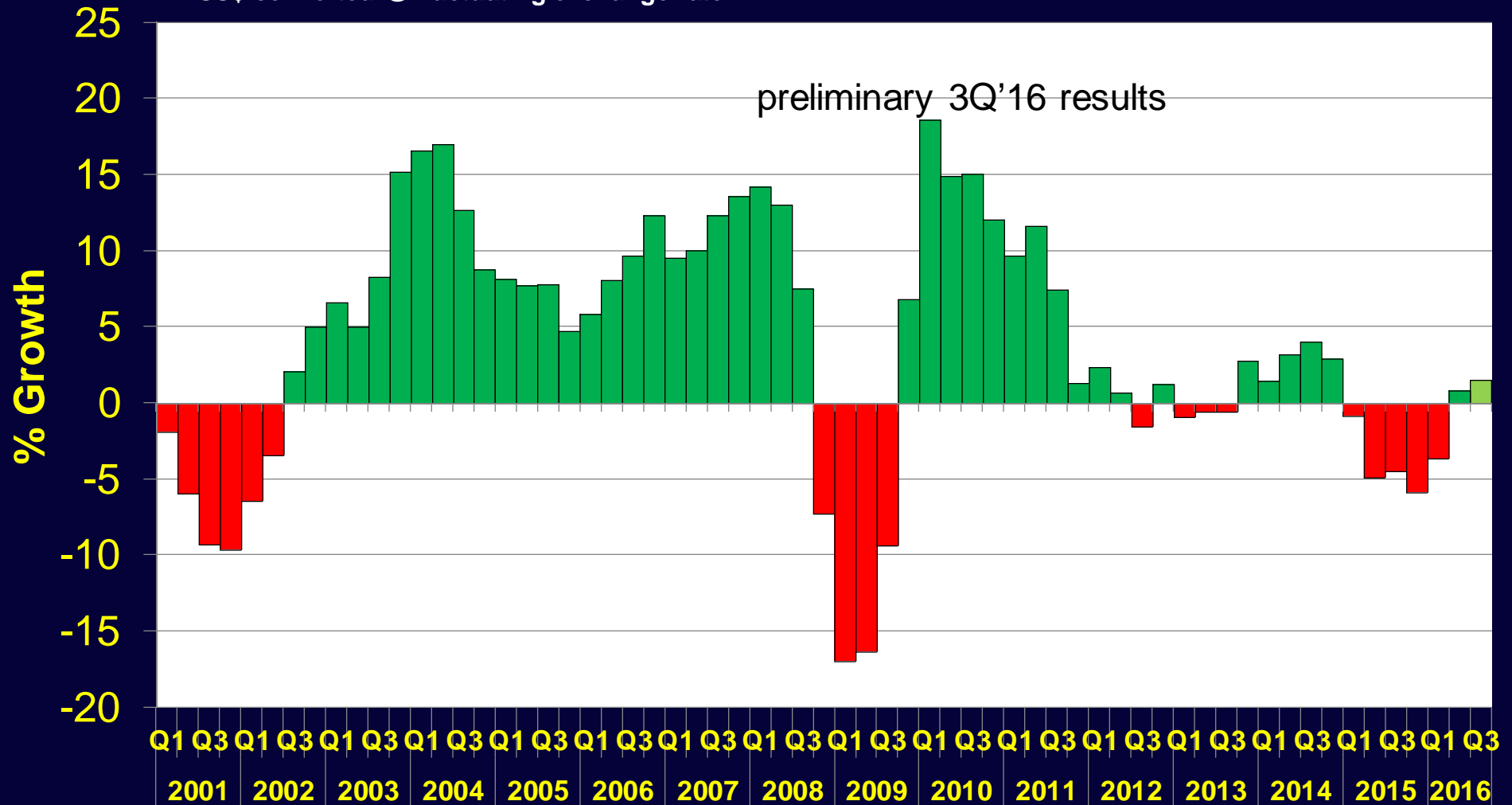
### Revenue, Net Income & Inventory



Computer 13, Internet 13, Storage 17, Communication 30, SEMI 40, Medical 21, Instruments 16, Military 21, Business & Office 6, Consumer 21, Automotive 15

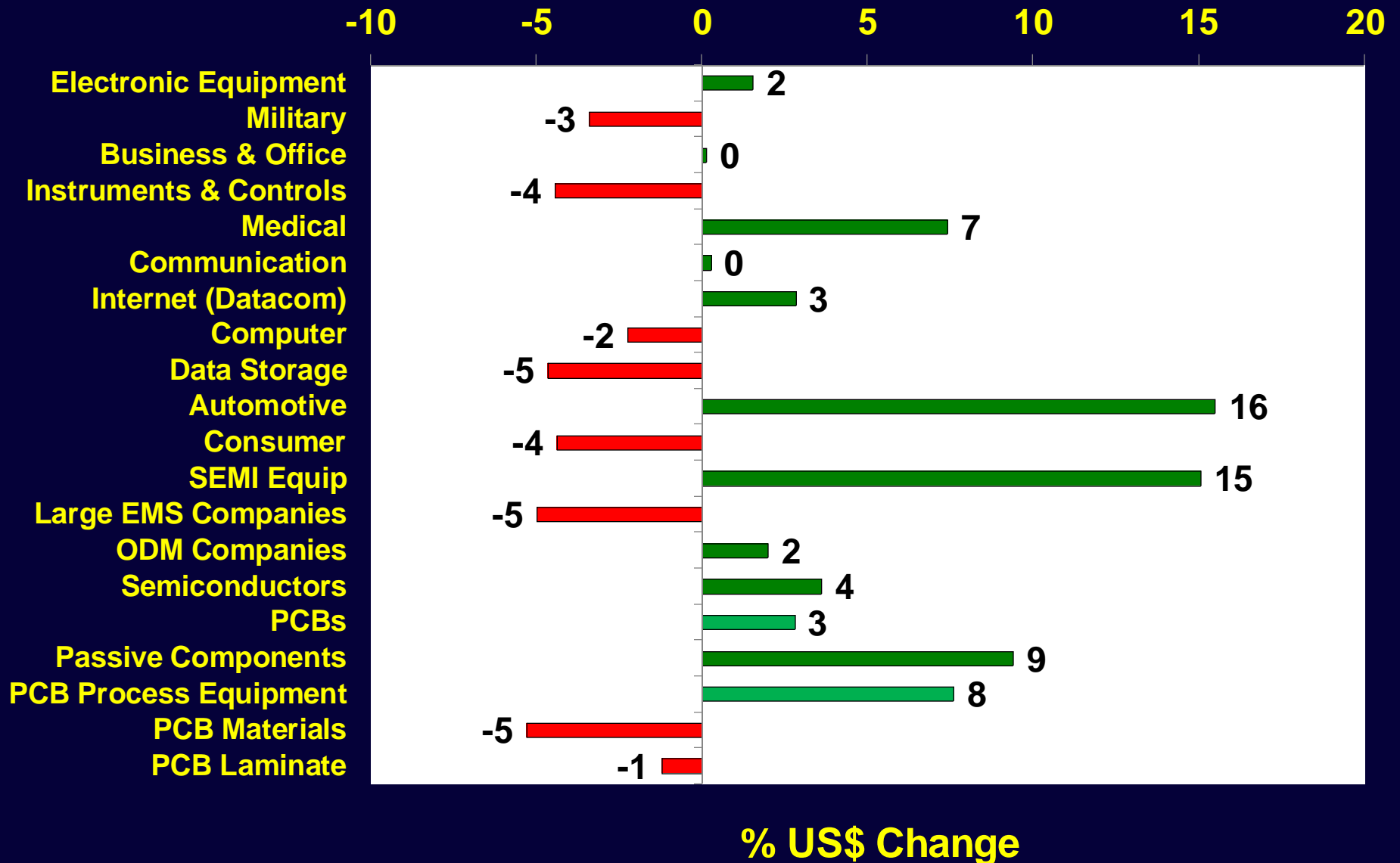
# Electronic Equipment Suppliers Composite of 213 Public Companies Quarterly Revenue Growth

US\$ converted @ fluctuating exchange rate





# Global Electronic Supply Chain Growth 3Q'16 vs. 3Q'15 (preliminary estimate)

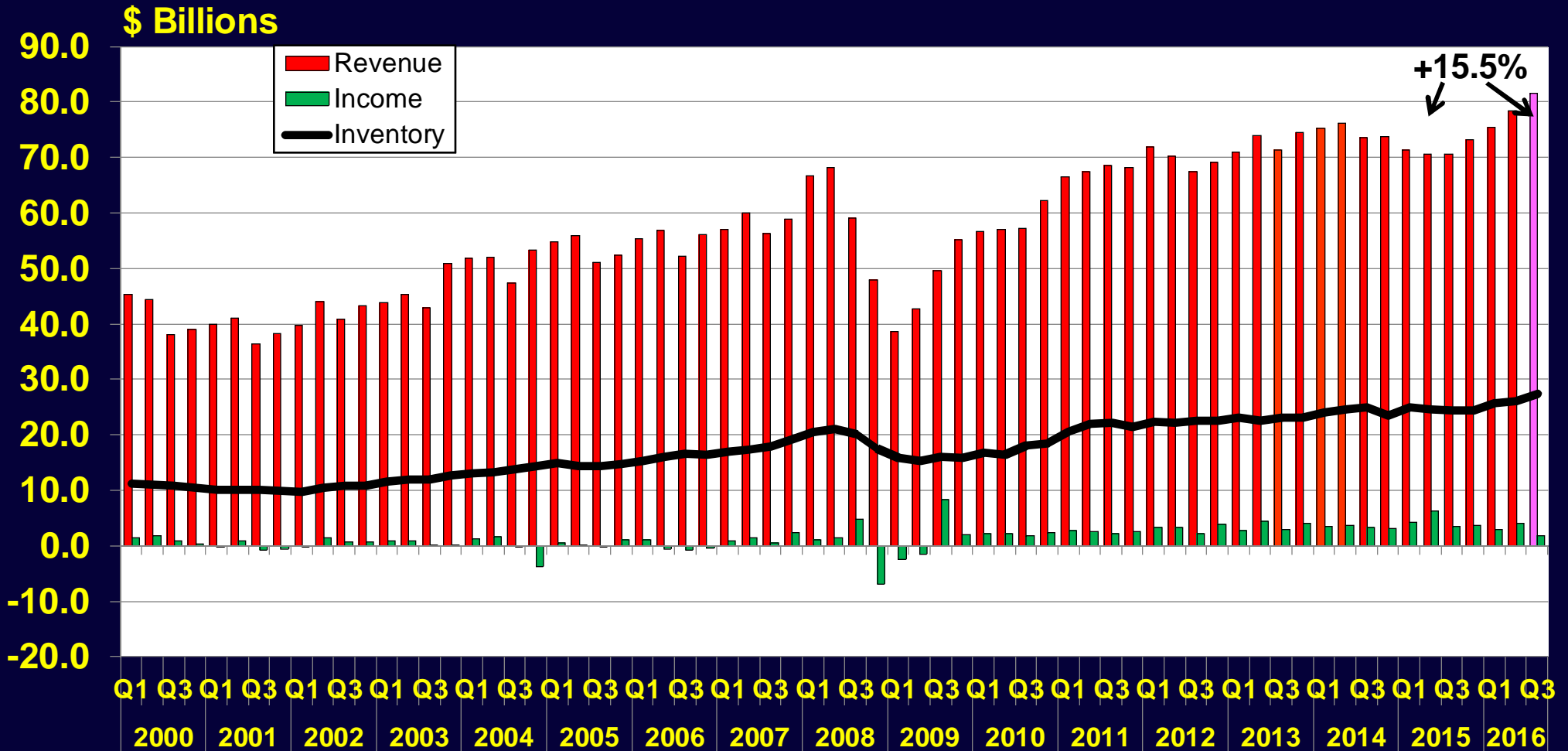


US\$ equivalent at fluctuating exchange; based upon industry composites including acquisitions

# Automotive Equipment Suppliers

## Composite of 15 Public Companies

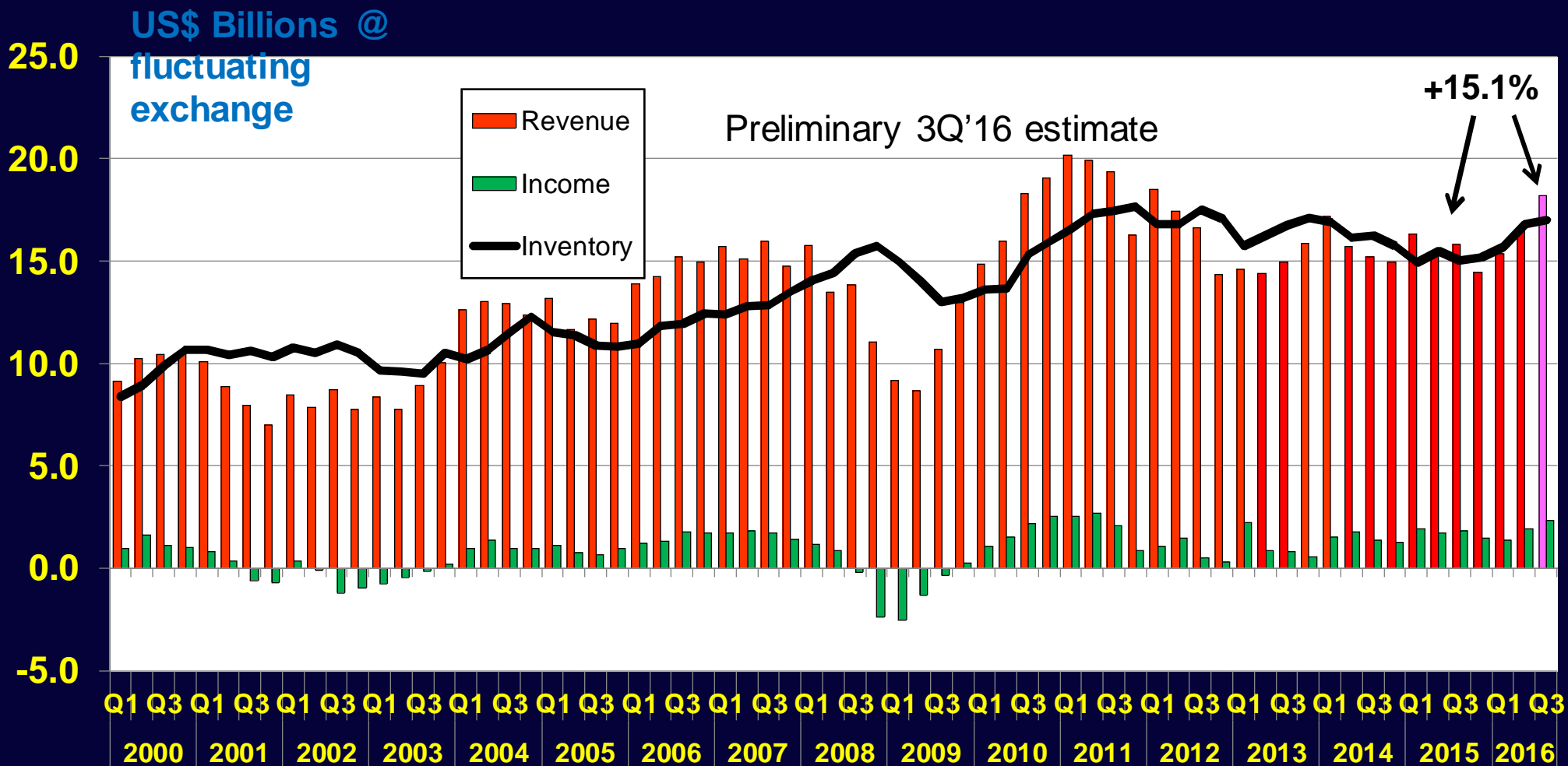
### Revenue, Net Income & Inventory



Autoliv, Borg Warner, Continental AG, Delphi, Denso, Federal Mogul, Gentex, Hella, Johnson Controls, Lear, Magna, TRW Automotive, Valeo, Visteon, ZF Friedrichshafen

# Semiconductor Fab, Test & Measurement Composite of 40 Public Companies

## Revenue, Net Income & Inventory

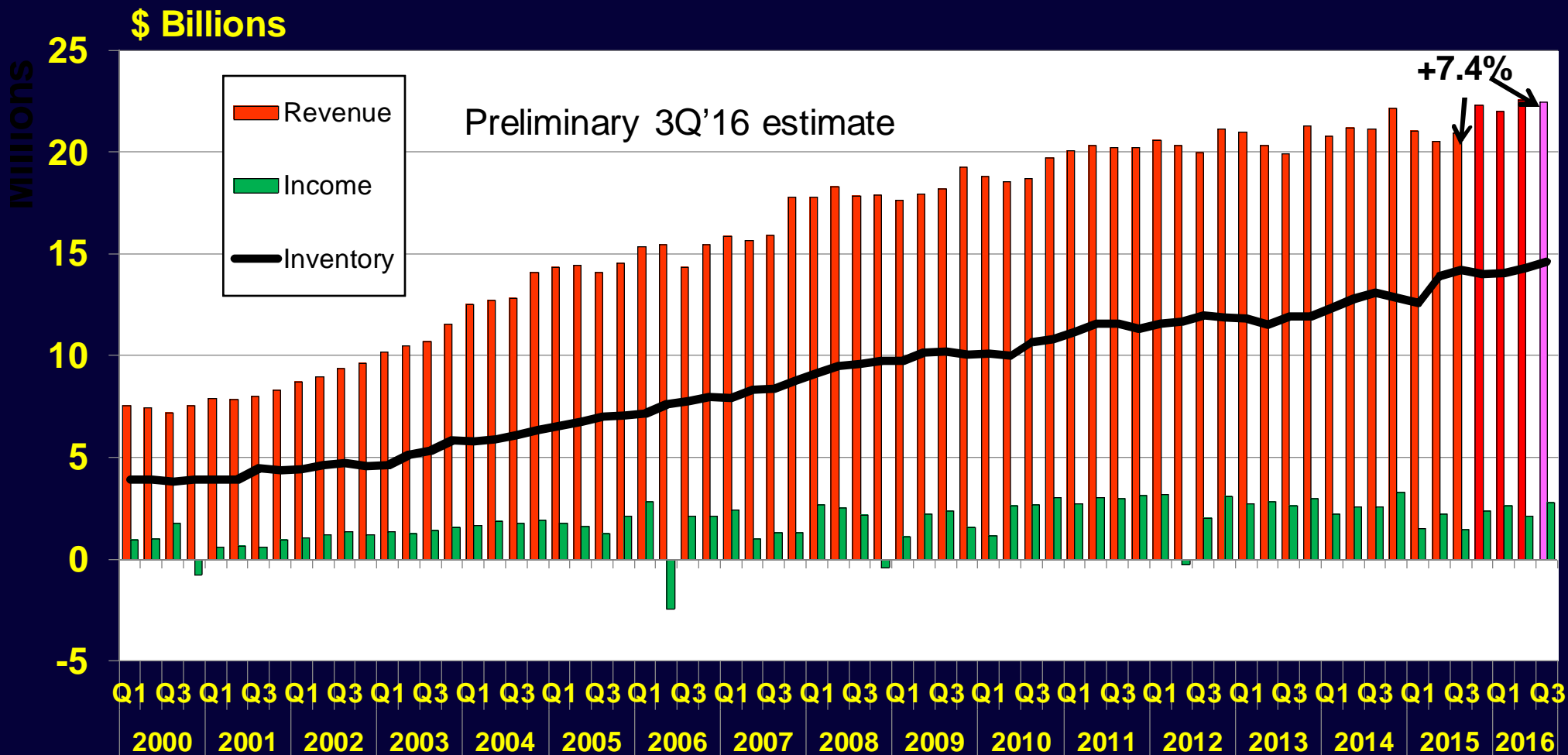


Advantest, Applied Materials, ASM Intl, ASML, Axcelis, Brooks Automation, BTU, Cohu, CollabRx, Dainippon Screen, Disco, Electroglas, Entegris, FEI, FormFactor,FSI, Hitachi Hi Tech, Hitachi Kokosai, KLA-Tencor, Ibis, Intervac, Kulicke & Soffa, Lam Research, Mattson,MKS Instrument, Novellus Systems, Photon Dynamics, Rudolph Technologies, Teradyne, Tokyo Electron, Ultra Clear, Ultratech Stepper, Varian Semiconductor, Veeco, Xcerra (LTX-Credence)

# Medical Equipment

## Composite of 21 Public Companies

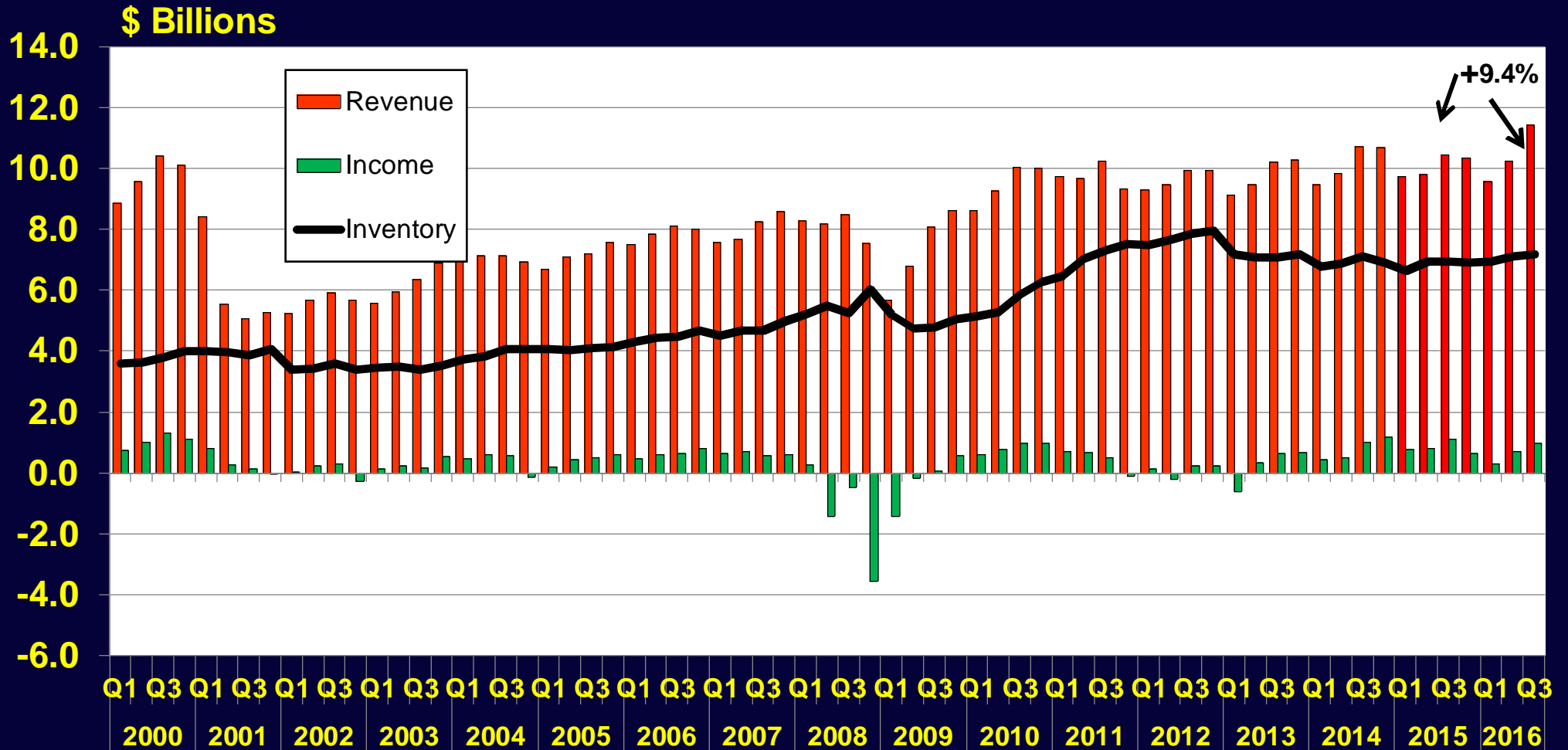
### Revenue, Net Income & Inventory



Analogic, Bio-Rad Laboratories, Boston Scientific, Bruker, CareFusion, Covidien, Draeger, Guidant, Hill-Rom, Intuitive Surgical, Invacare, Medtronic, ResMed, St Jude Medical, Smith & Nephew, STERIS, Stryker, Varian Medical, Waters, Zimmer

# Passive Components Composite of 14 Companies

## Revenue, Net Income & Inventory

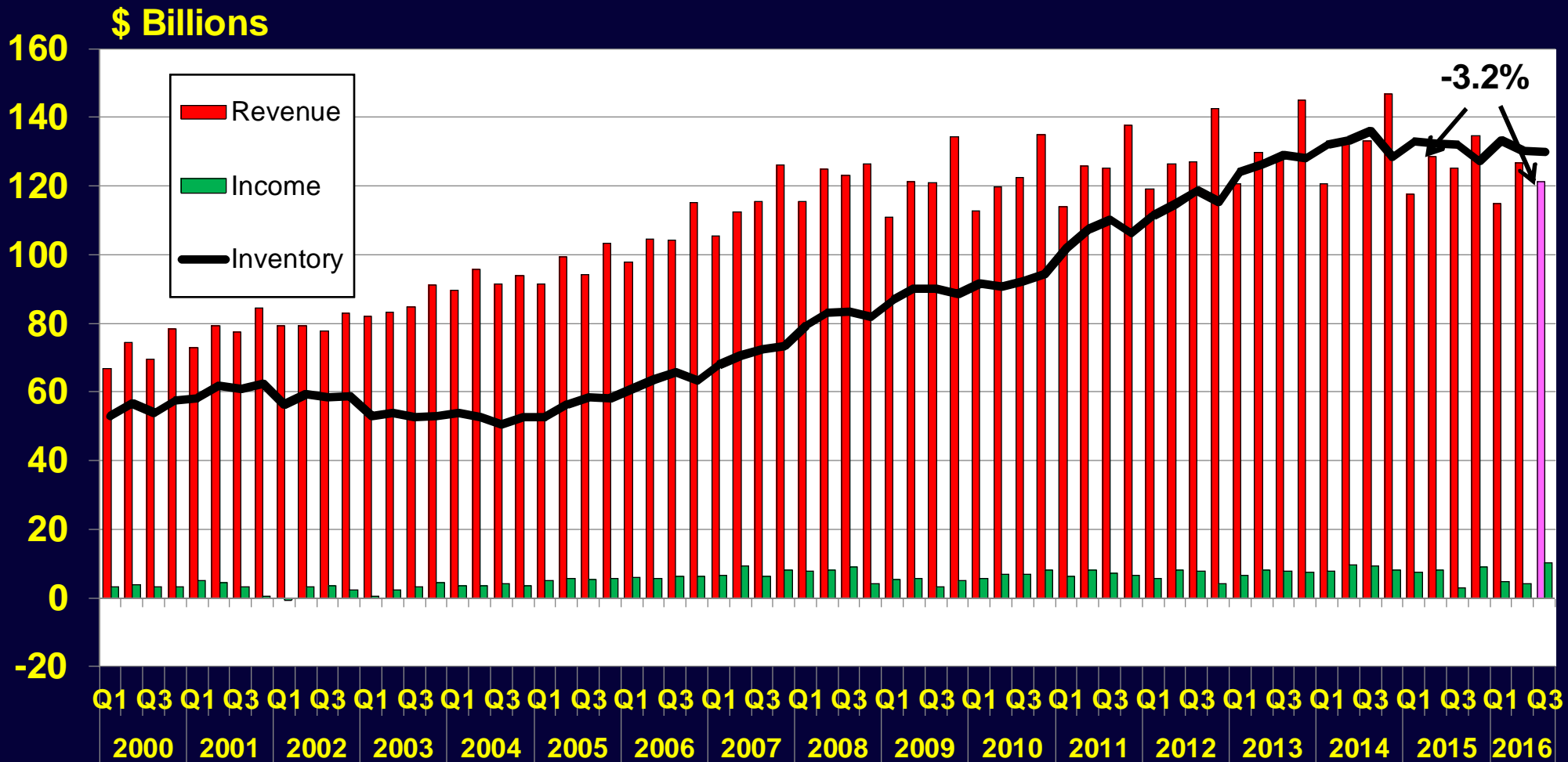


ALPS, AVX, Bel Fuse, Diodes, International Rectifier, Kemet, Knowles, Littlefuse, Murata, RF Micro, Rohm, Vishay, TDK, Yageo;  
Euro, Yen & NT\$ converted to US\$ at fluctuating exchange rates

# Military & Aerospace

## Composite of 22 Public Companies

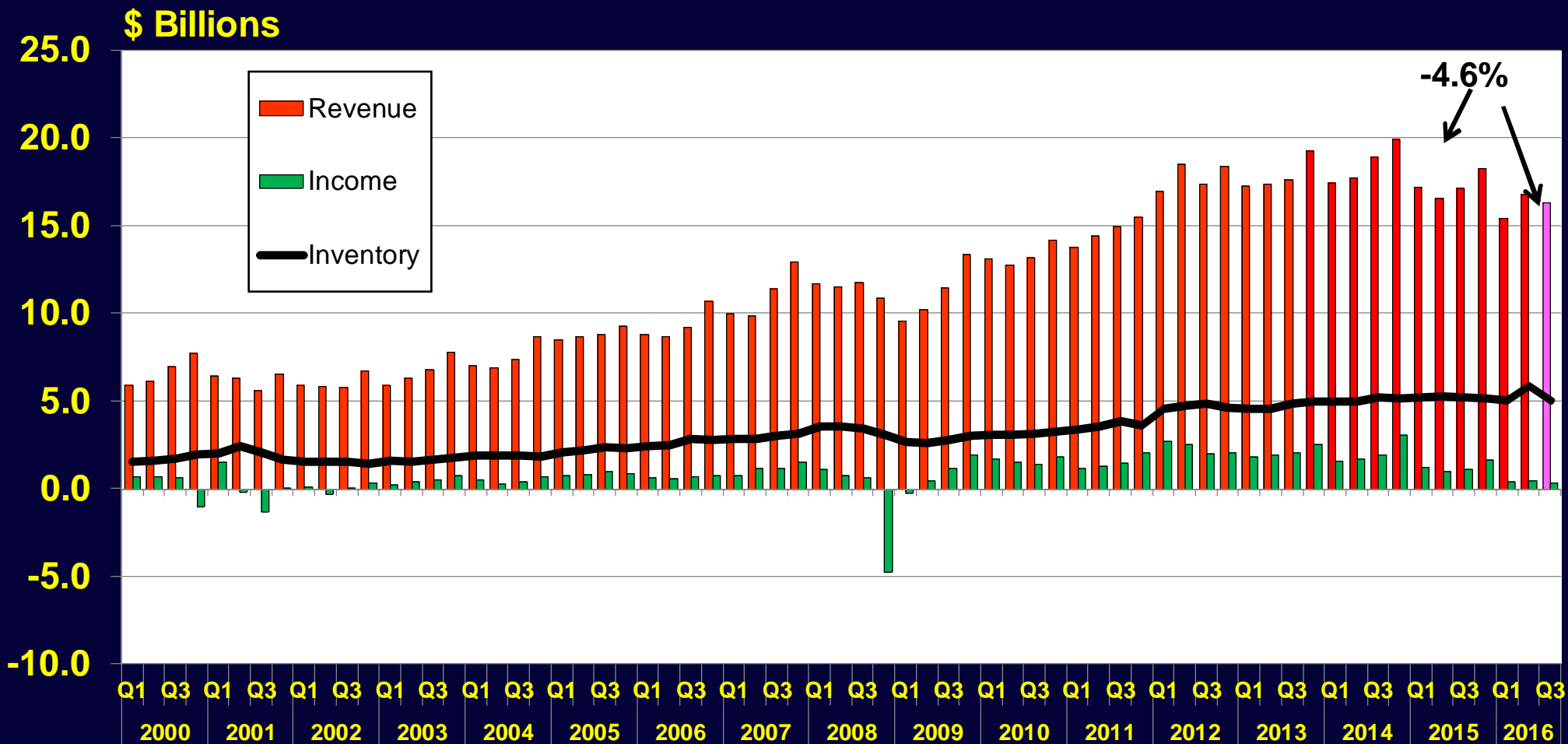
### Revenue, Net Income & Inventory



Boeing, Bombardier, EADS (Airbus), Finmeccanica, General Dynamics, Halliburton, Harris, Honeywell (military portion), L-3 Communications, Lockheed, Moog, Northrop Grumman, Raytheon, Rockwell Collins, Textron, Thales, United Technology

# Data Storage Equipment Suppliers Composite of 17 Public Companies

## Revenue, Net Income & Inventory



Brocade, Concurrent, Datalink, EMC, Iomega, Lexar, Maxtor, Network Appliance, Netlist, Nimble Storage, Qlogic, Quantum, Seagate, Storage Technology, Super Micro Computer, Western Digital, SanDisk.  
Companies now no longer operating were included in historical data until they shut down