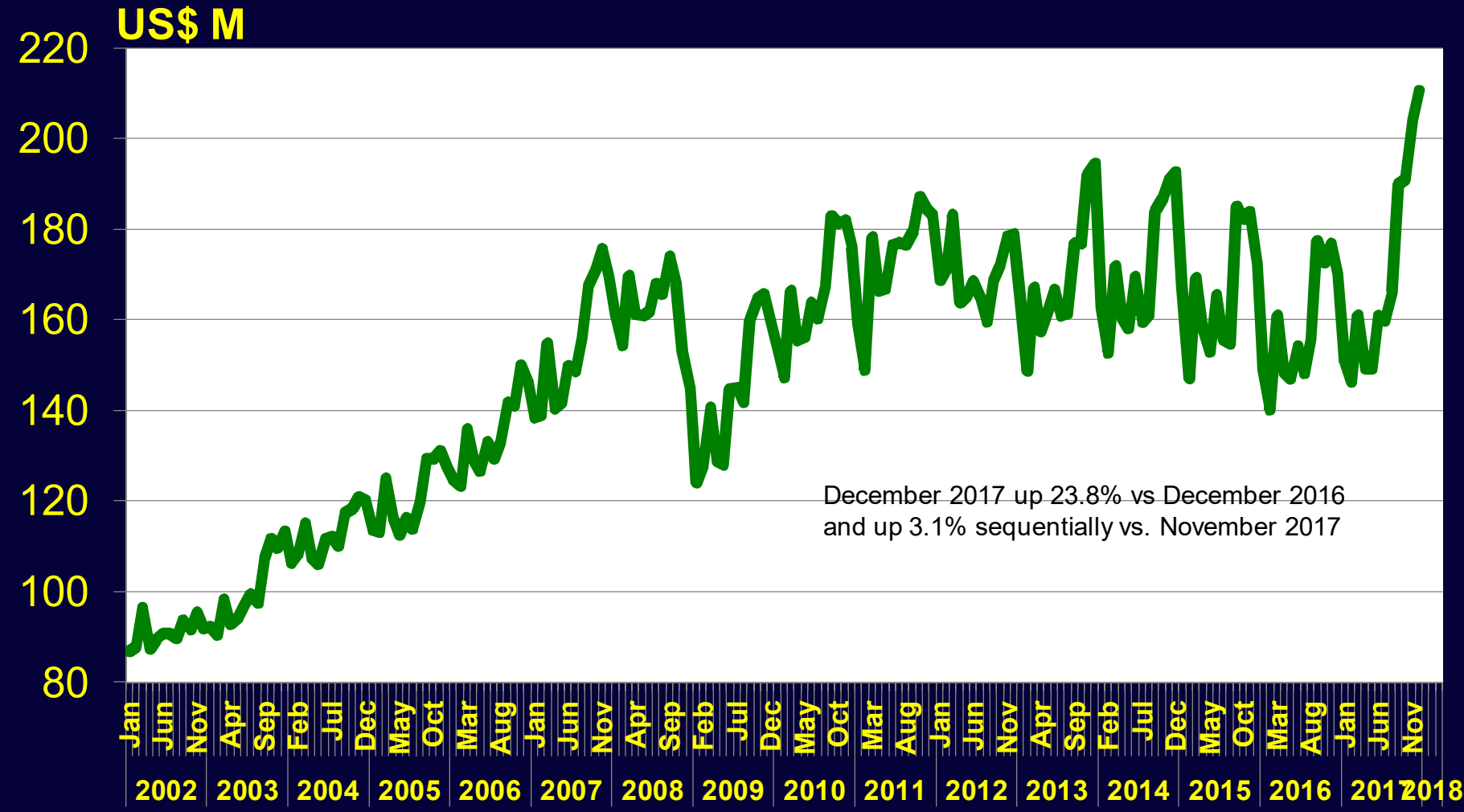
Chart 1

World Electronic Equipment Monthly Shipments

Converted @ Fluctuating Exchange Rates

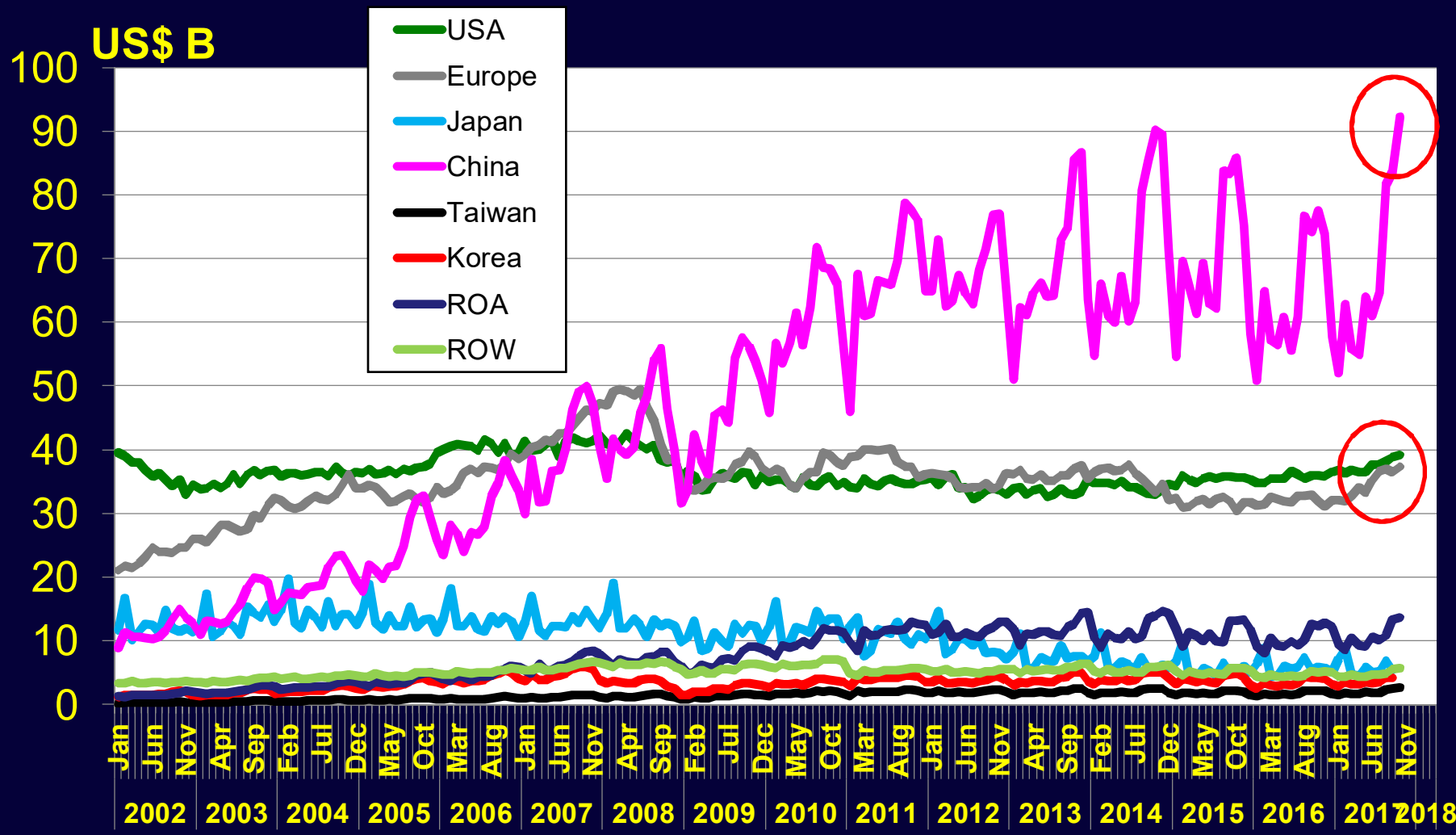


Source: Custer Consulting Group

Chart 2

World Electronic Equipment Monthly Shipments

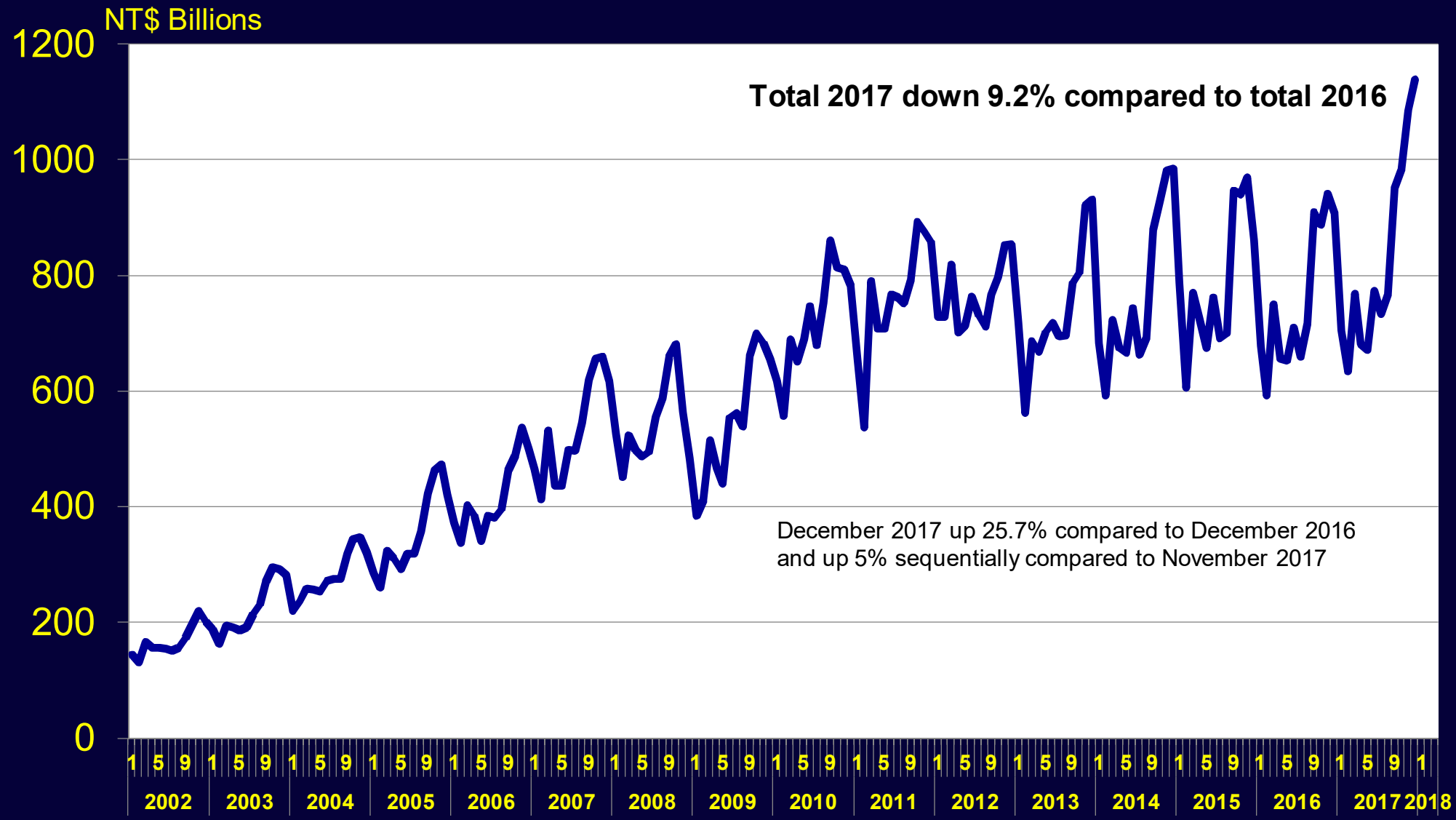
Converted @ Fluctuating Exchange Rates



Source: Custer Consulting Group

Chart 3

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

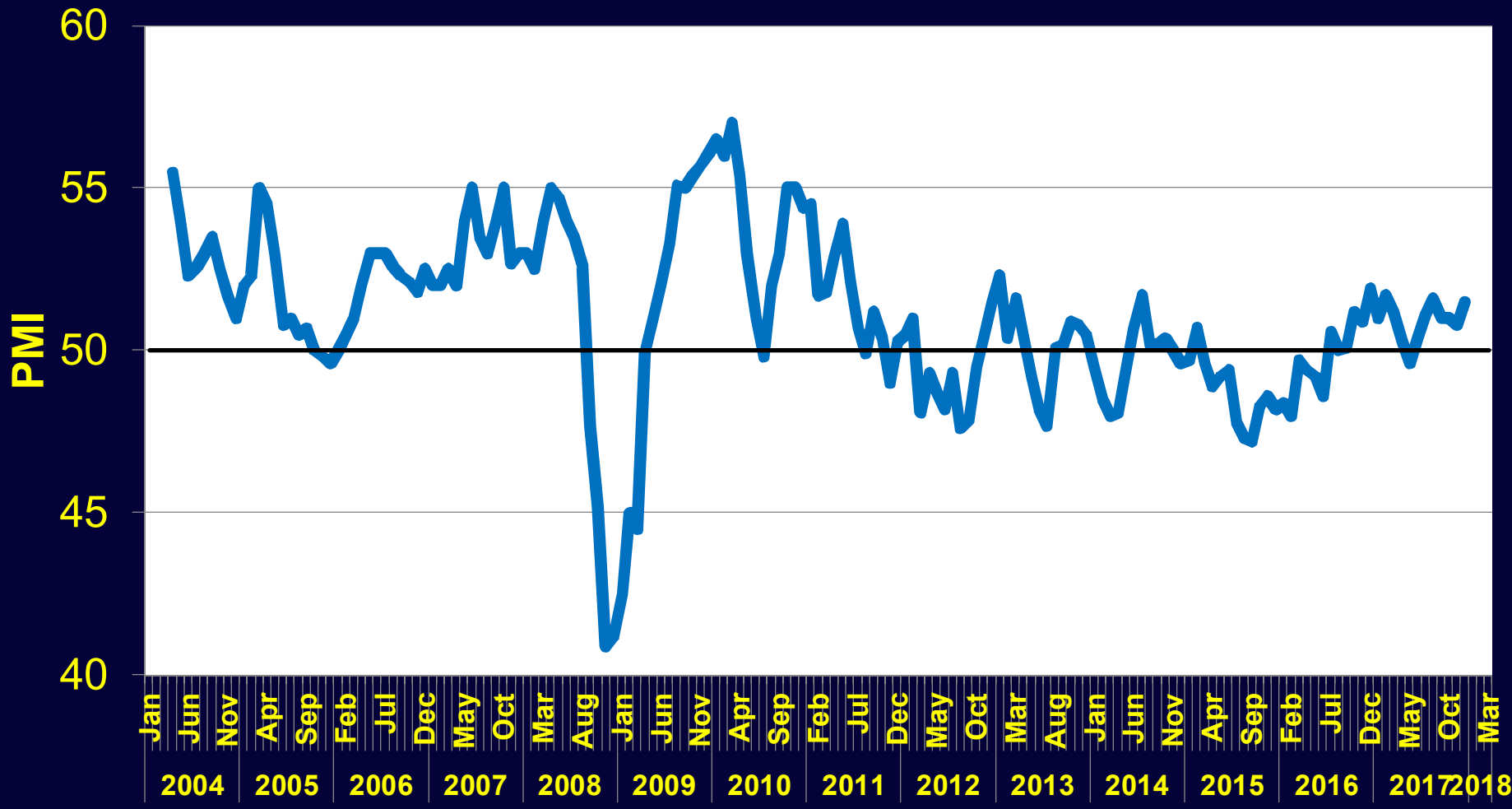


Taiwan listed companies, often with significant manufacturing in China

Chart 4

China "Purchasing Managers" Indices

>50 = Growth

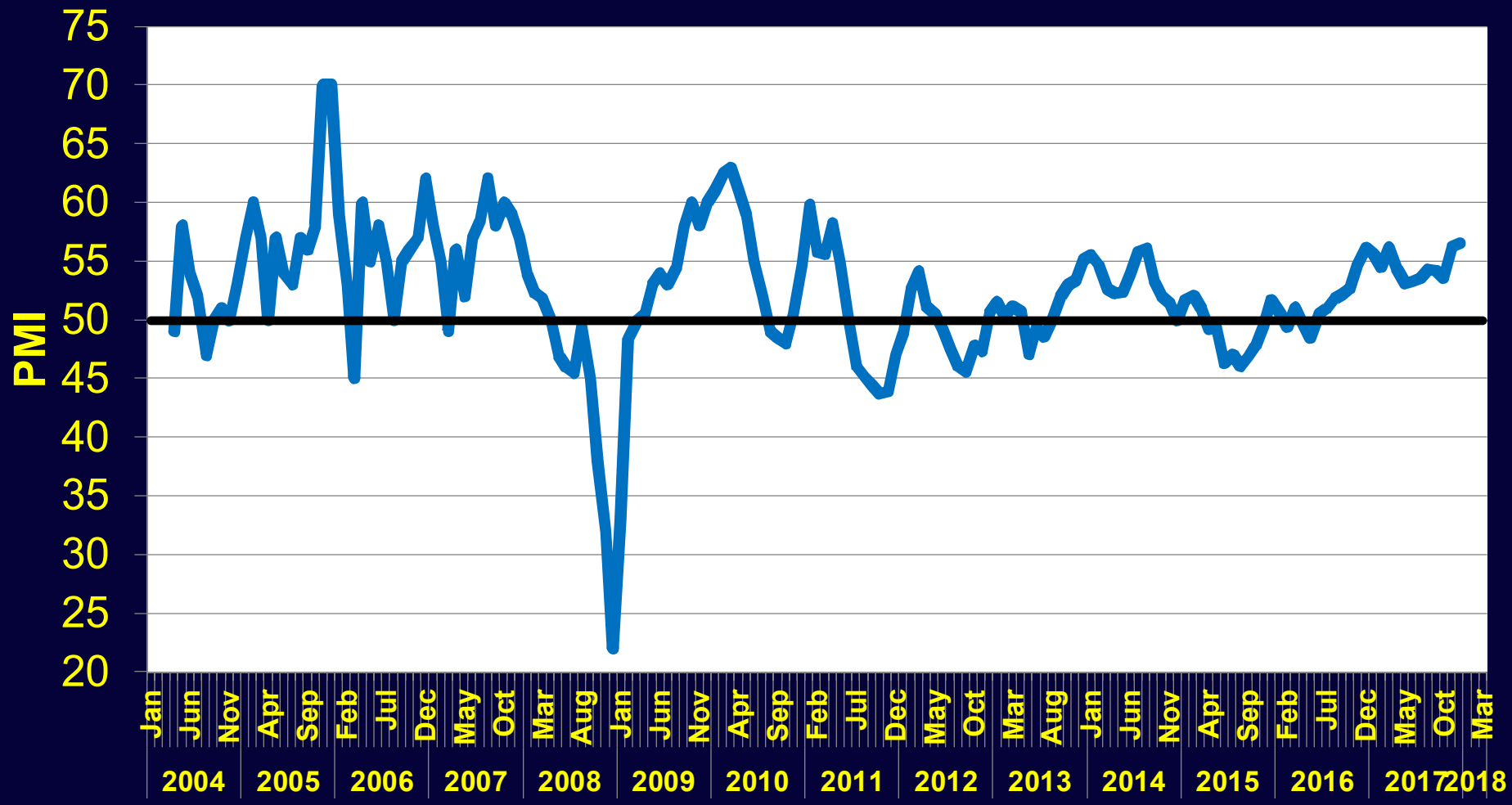


Markit Economics
China National Bureau of Statistics

Chart 5

Taiwan "Purchasing Managers" Index

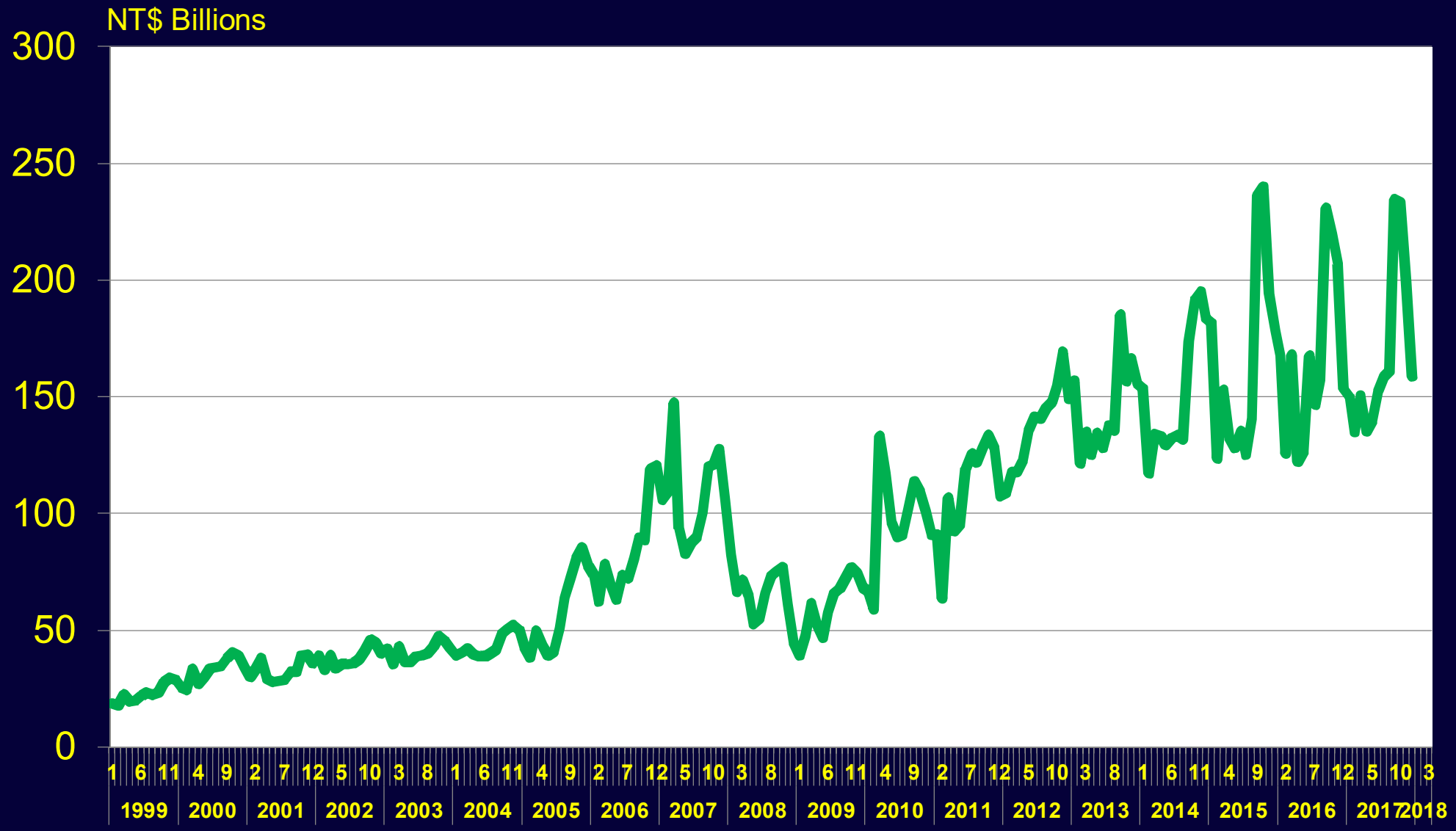
>50 = Growth



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Chart 6

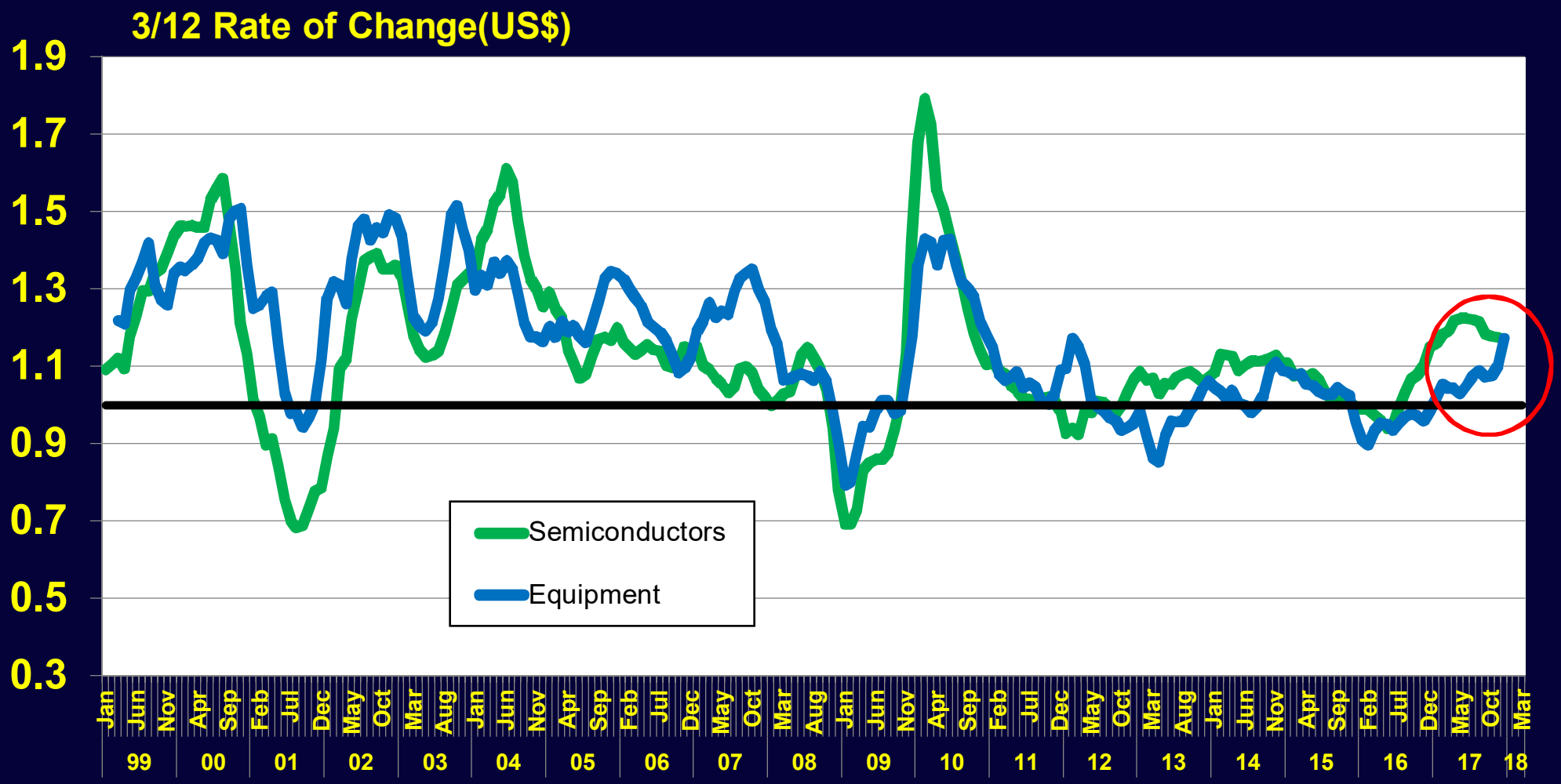
Taiwan/China Motherboard Vendor Sales
Composite of 22 Manufacturers



Taiwan listed companies, often with significant manufacturing in China

Chart 7

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



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

Chart 8

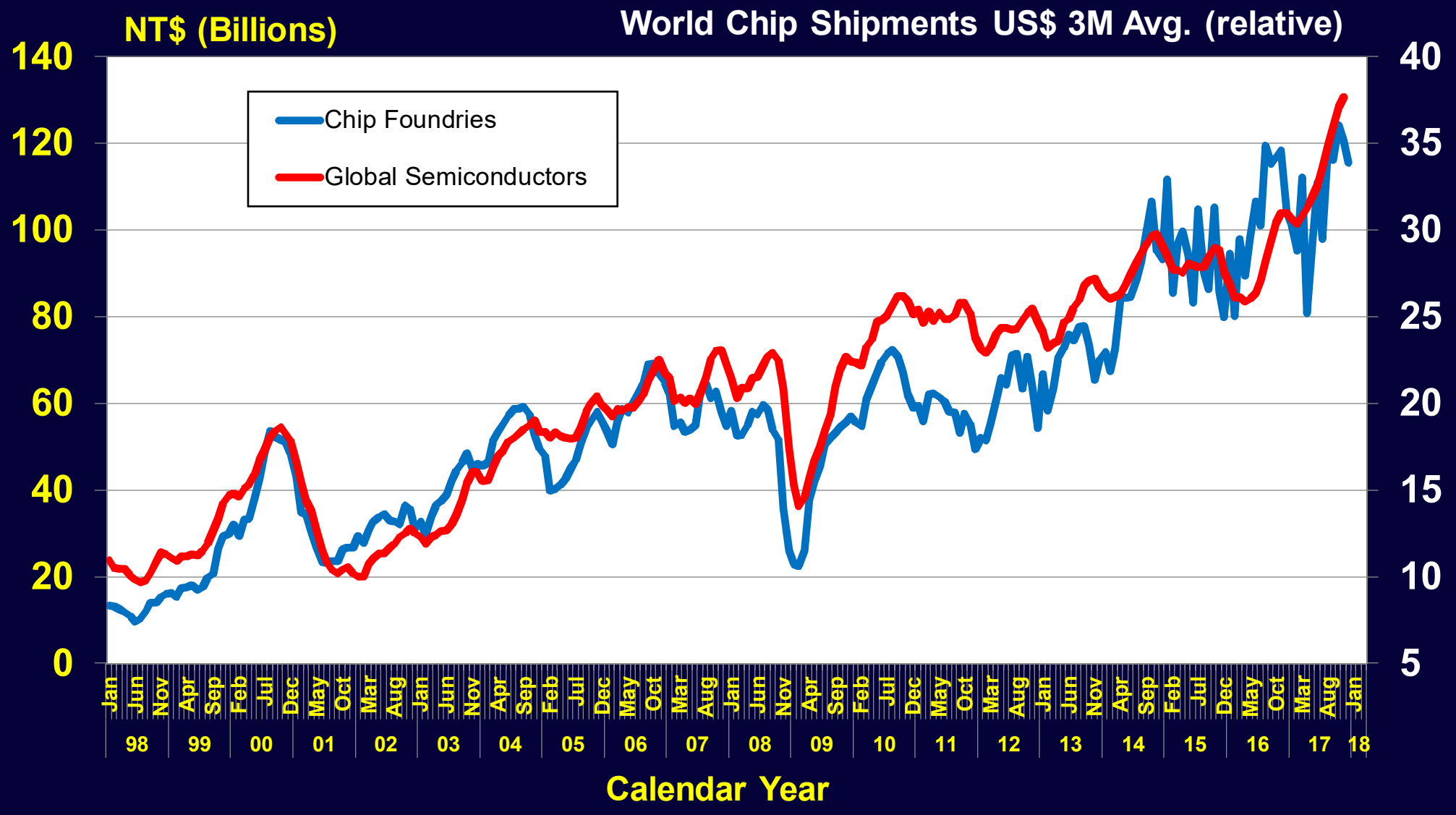
Taiwan Wafer Foundries
Composite of 14 Manufacturers



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

Chart 9

Taiwan Wafer Foundry Composite vs. Global Semiconductor Revenues



14 Taiwan Company Financial Releases & SIA

Chart 10

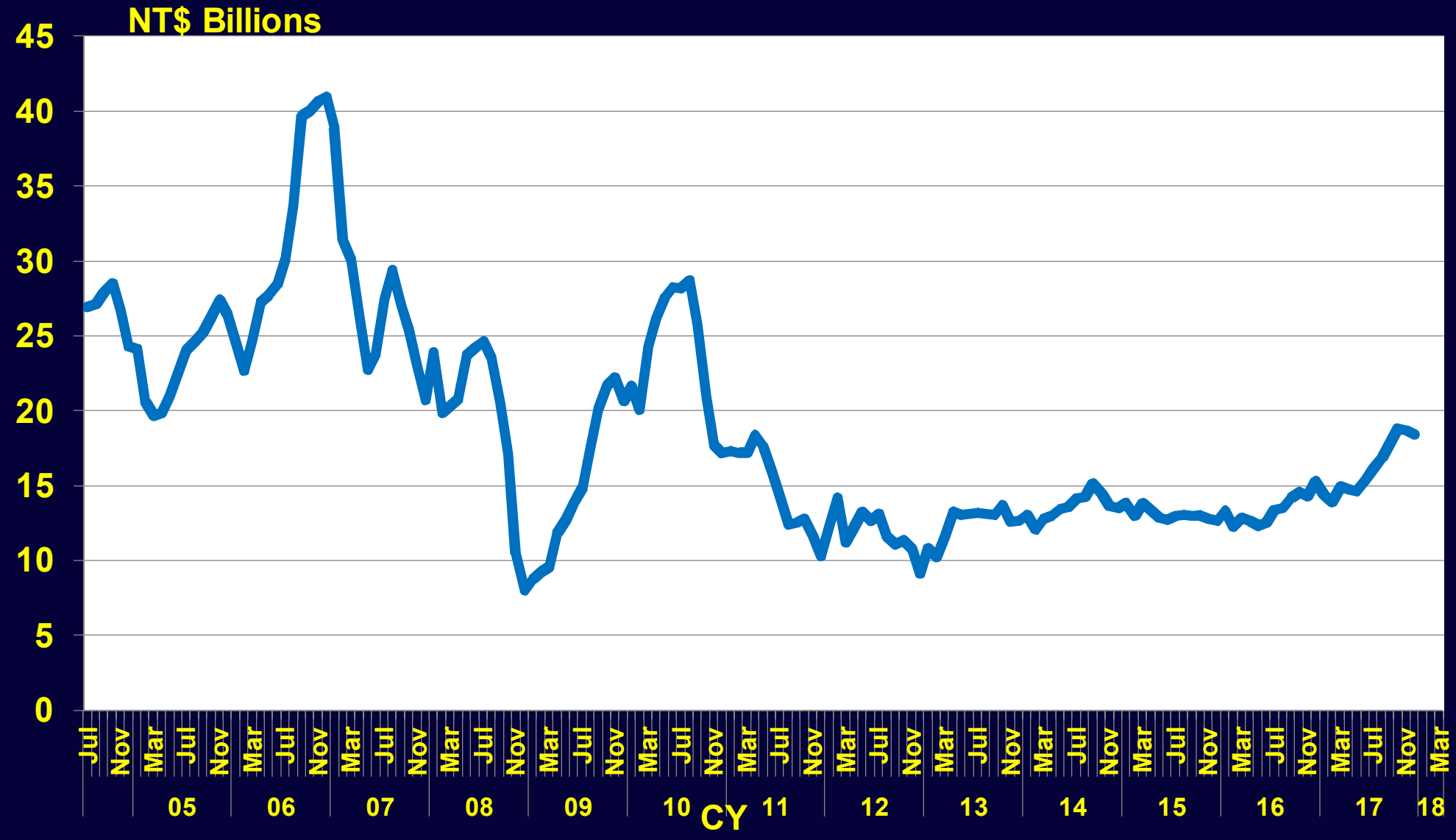
Taiwan Package & Test Companies Composite of 20 Manufacturers



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, Thalin Semiconductor, Vate Tech, Walton Advanced Tech

Chart 11

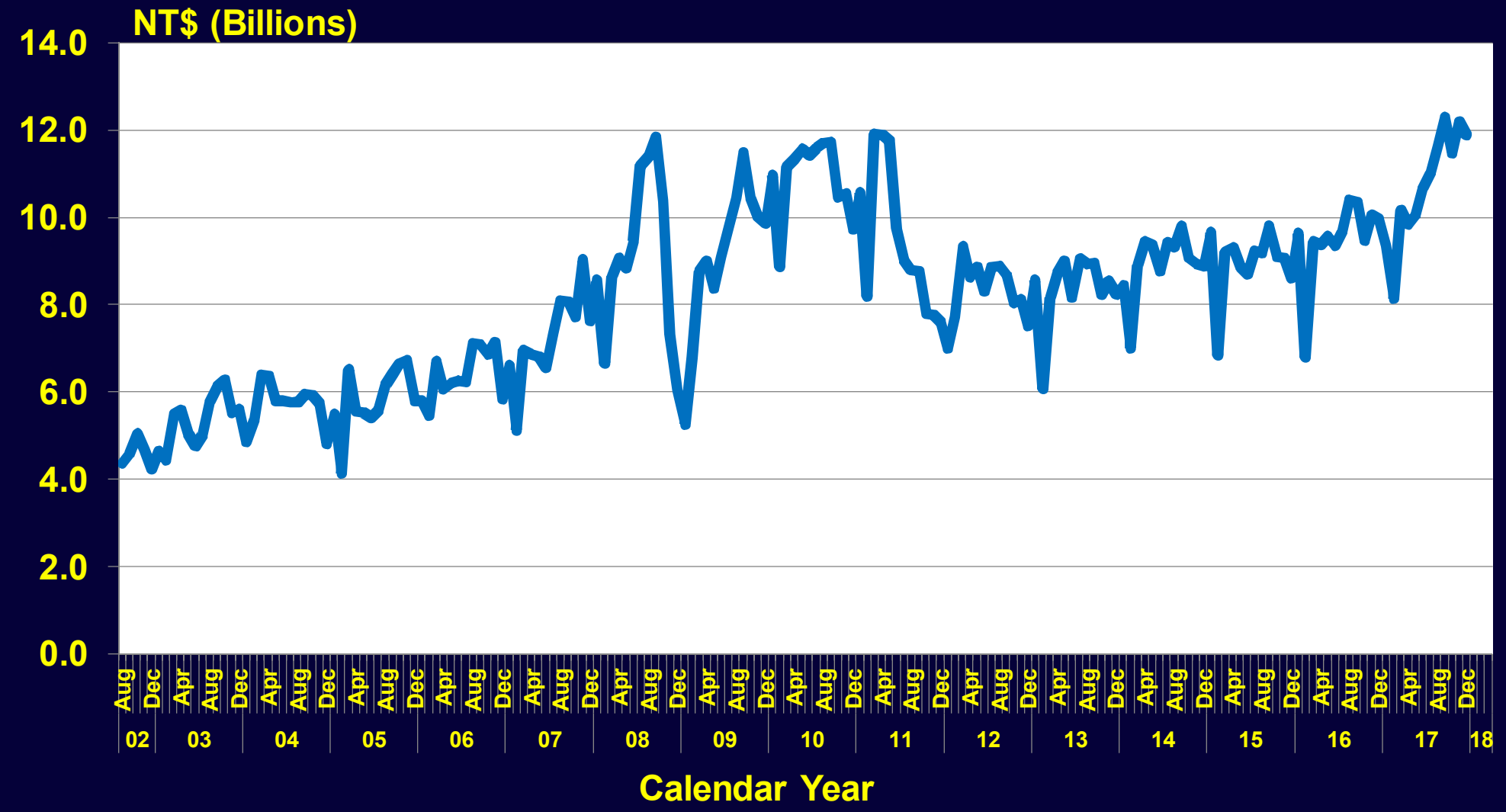
Taiwan Memory Companies
Composite of 7 Manufacturers



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

Chart 12

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)

Chart 13

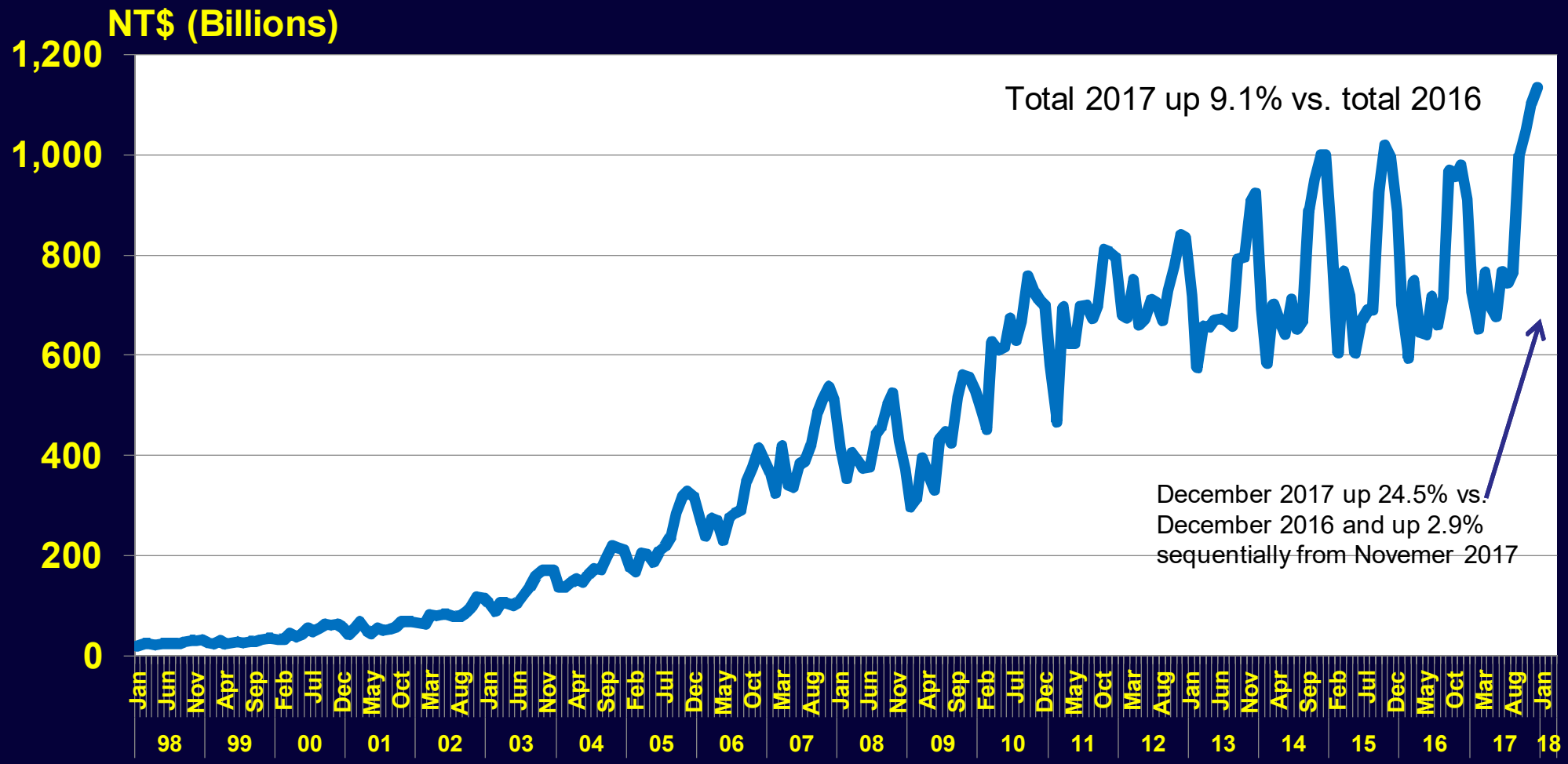
Taiwan Solar/Photovoltaic Panel Companies
Composite of 27 Manufacturers



Acter, Big Sun Energy Technology, Chen Full Intl, Danen Technology, Daxon Technology, DelSolar, 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

Chart 14

Taiwan ODM Companies
Composite Sales of 11 Large Manufacturers

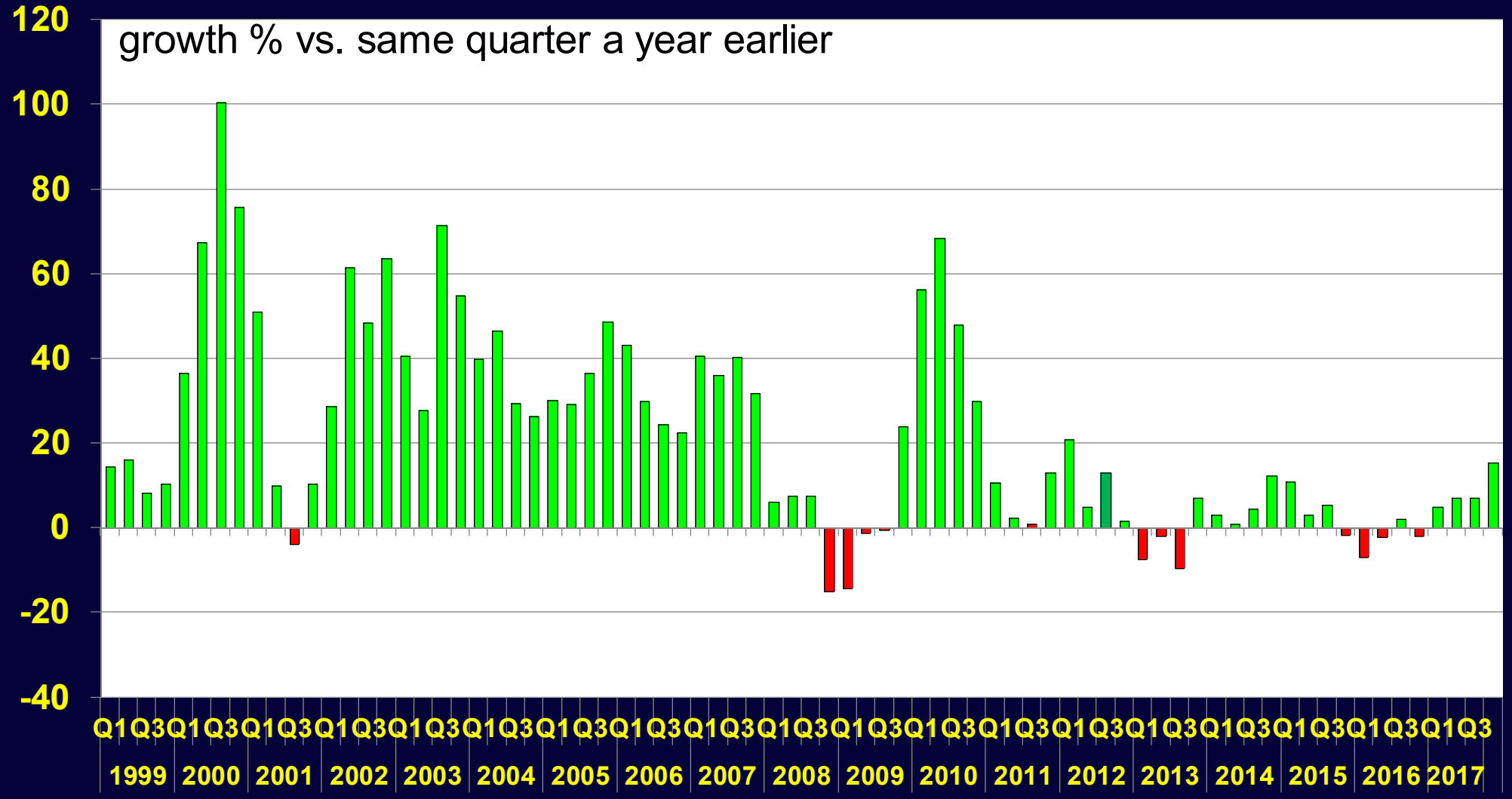


Company Financial Releases

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

Chart 15

Large ODM Companies
Composite of 11 Taiwan-listed Manufacturers
Quarterly Revenue Growth in NT$

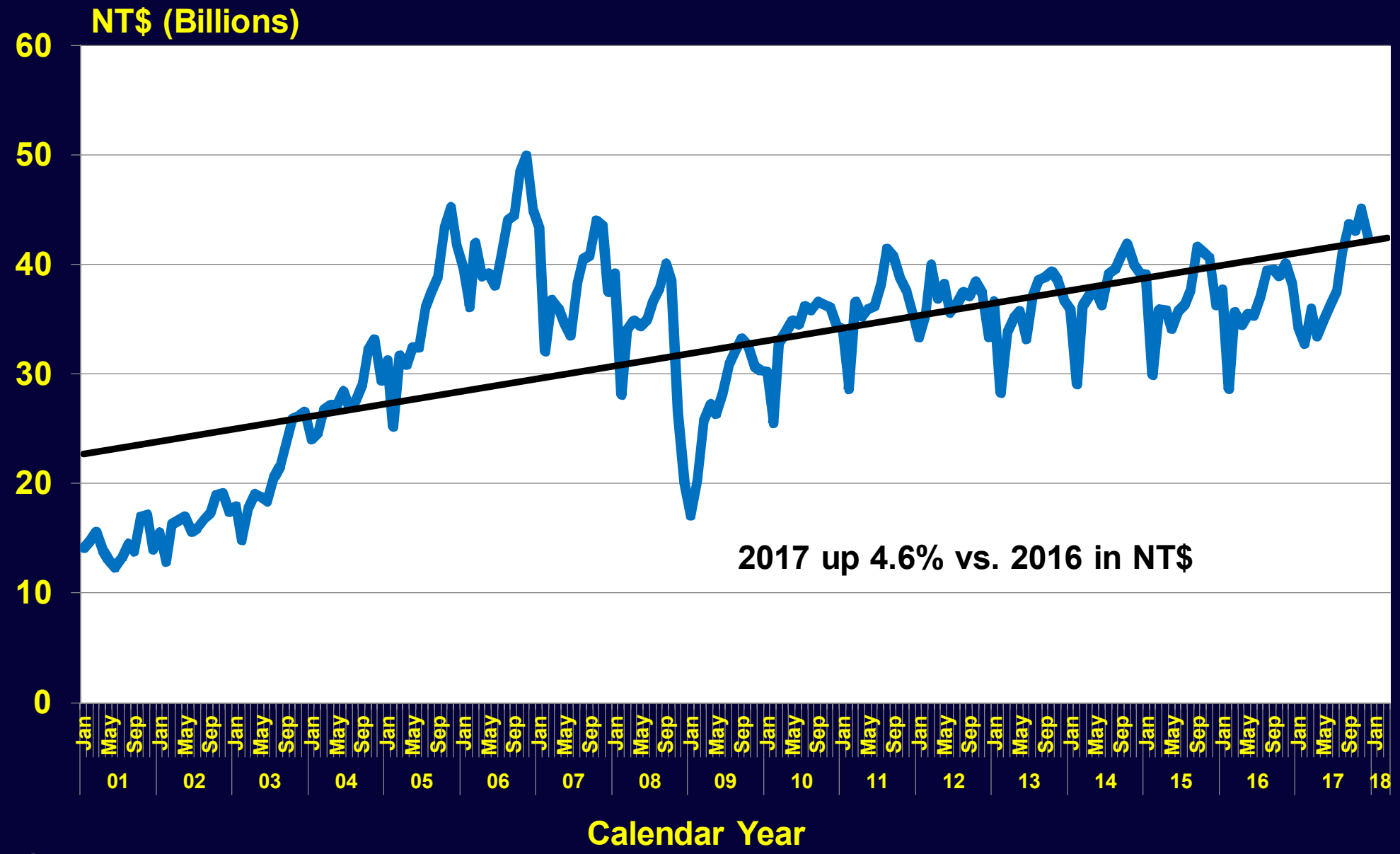


Asustek Computer, Compal Electronics, Foxconn, Chimei Innolux, Inventec, Inventec Appliance, Lite On Technology, Mitac International, Pegatron, Quanta Computer, Wistron

Chart 16

Taiwan Rigid & Flex PCB Shipments

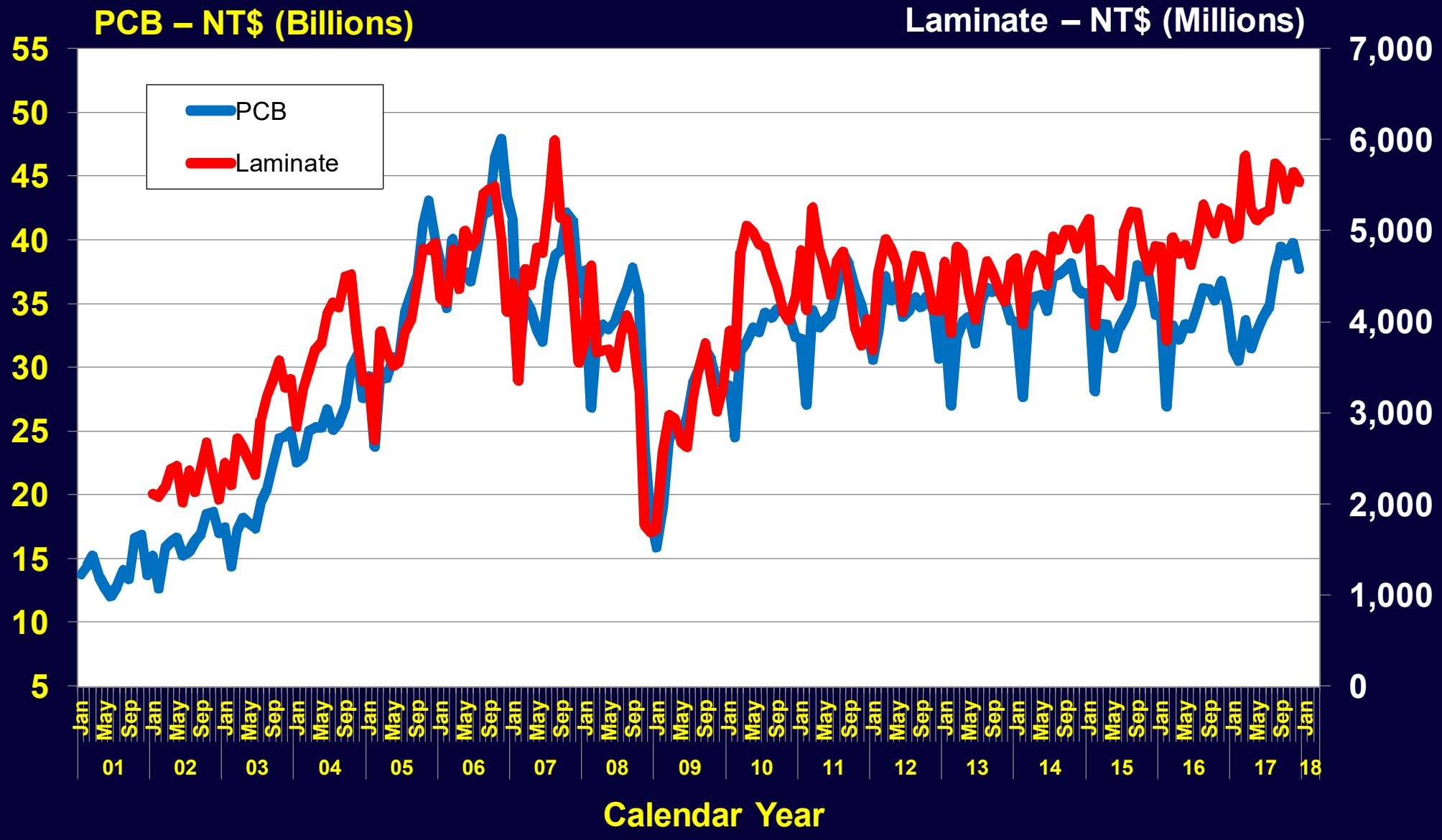
Broad Composite of 46 Taiwan-listed Manufacturers



Company Financial Releases

Chart 17

Taiwan Shipments
42 Rigid PCB & 8 Laminate Manufacturers

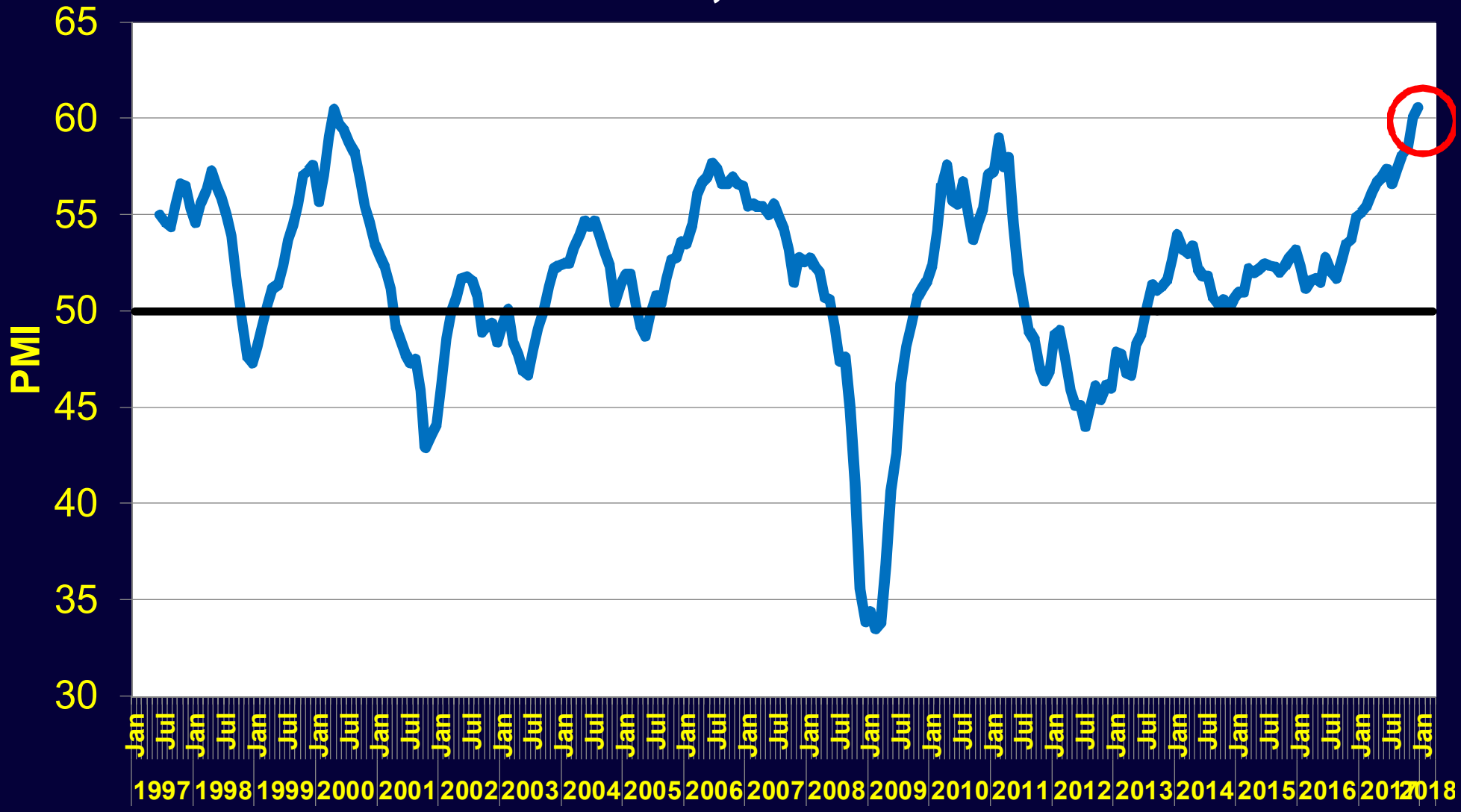


Company Financial Releases

Chart 18

Eurozone Manufacturing "Purchasing Managers" Index

Diffusion Index, >50 = Growth

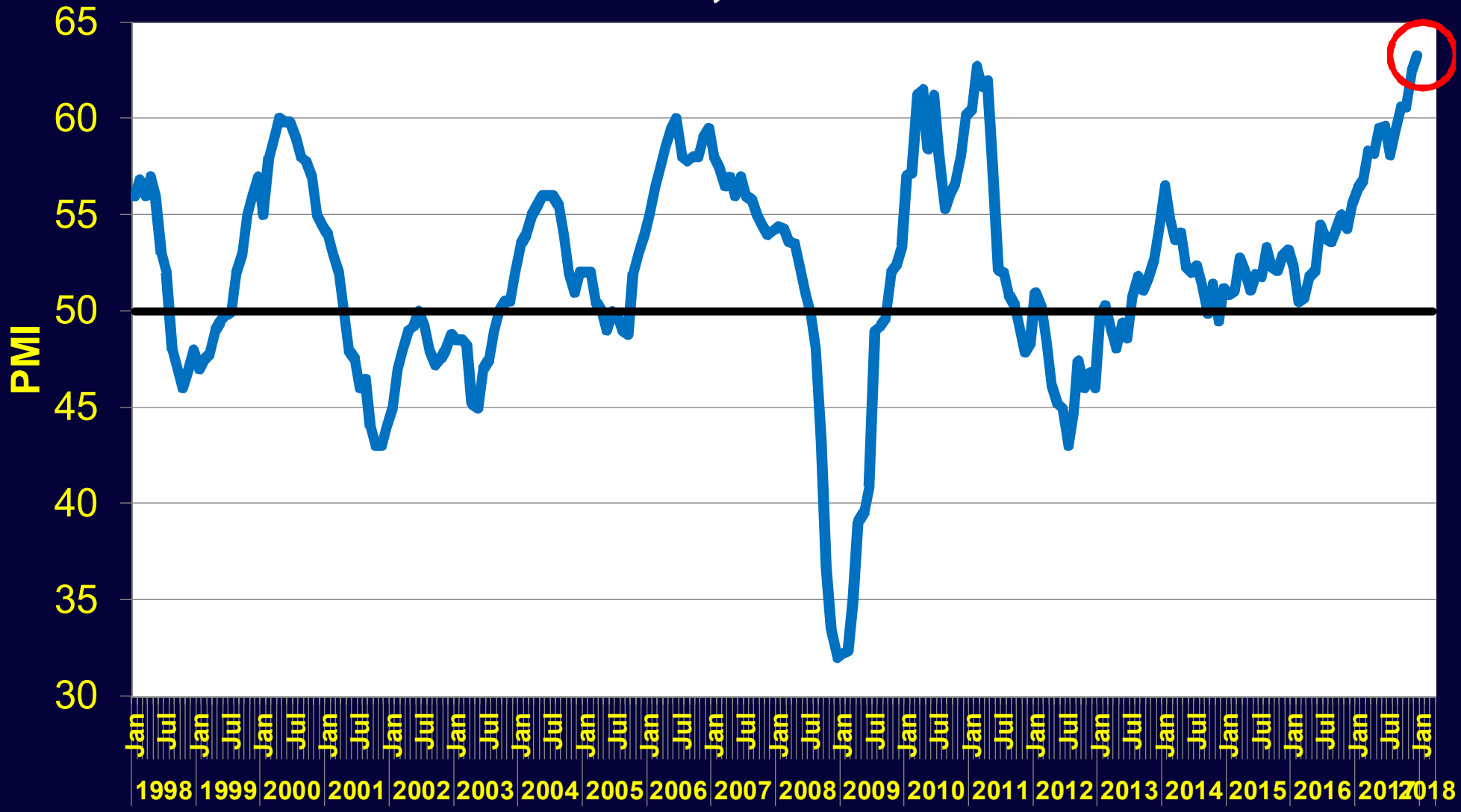


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Chart 19

Germany Manufacturing "Purchasing Managers" Index

Diffusion Index, >50 = Growth

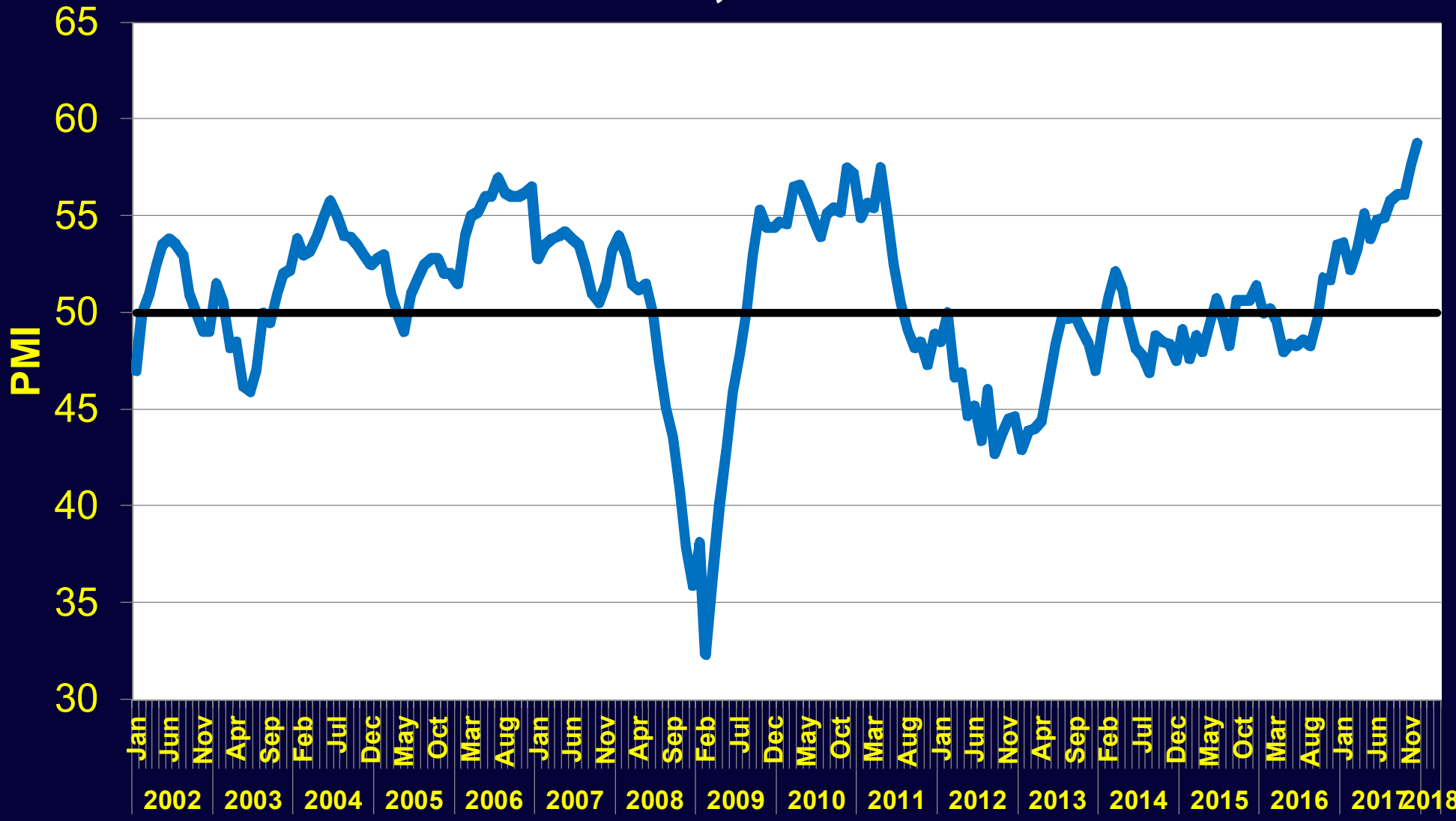


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Chart 20

France Manufacturing "Purchasing Managers" Index

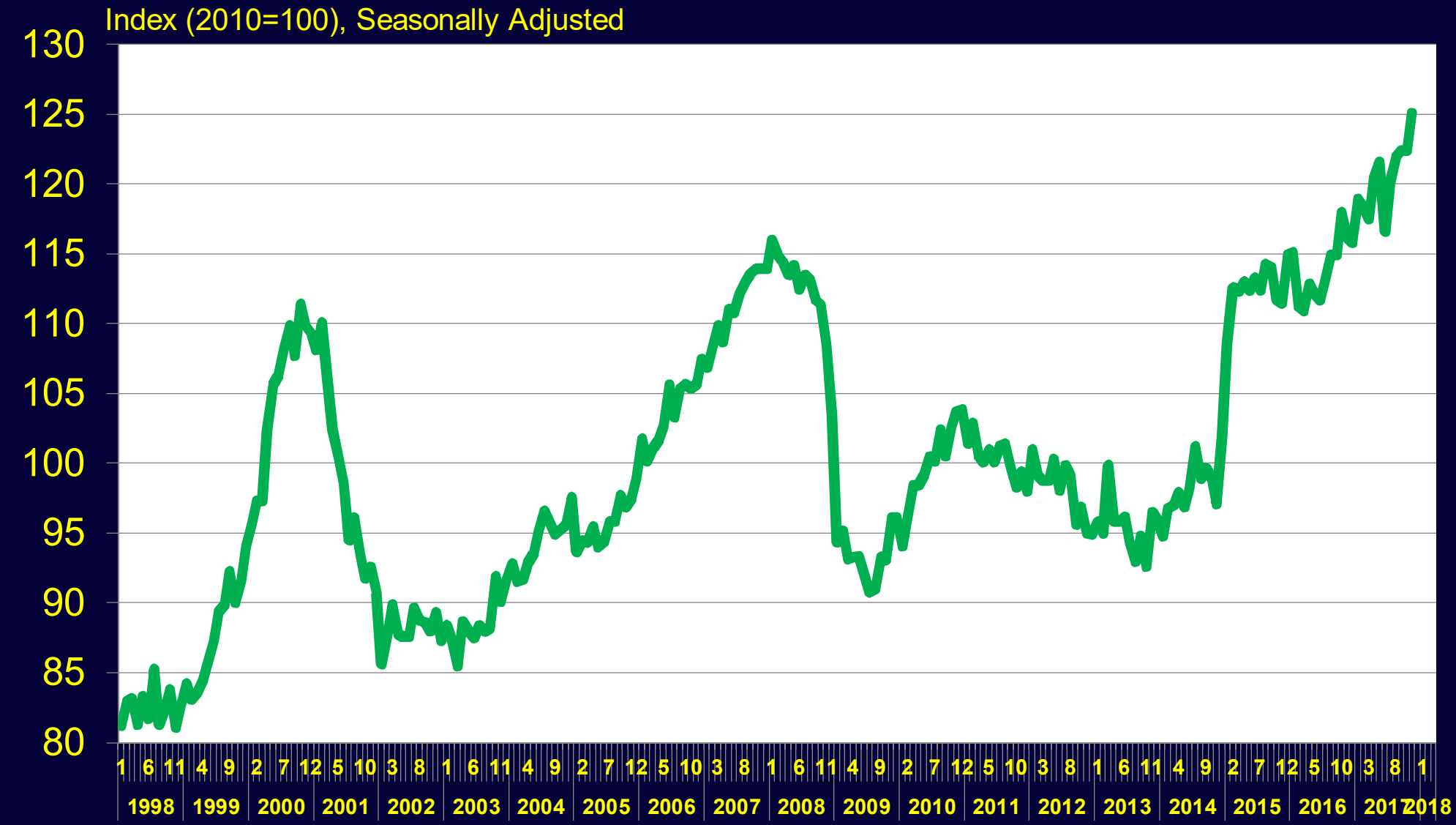
Diffusion Index, >50 = Growth



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Chart 21

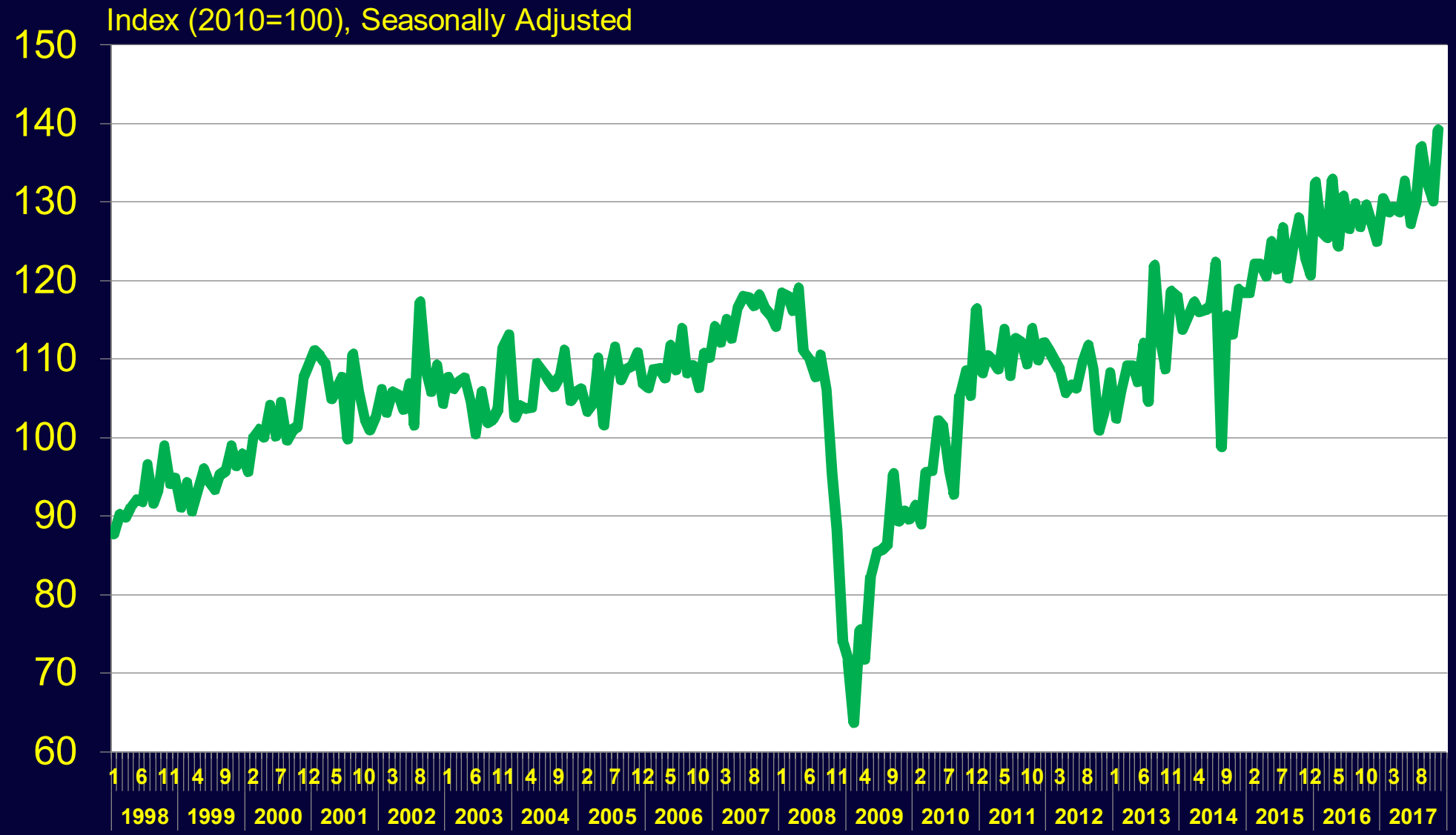
European Computer, Electronic & Optical Products Production



Eurostat, C26 category, EU 28 countries

Chart 22

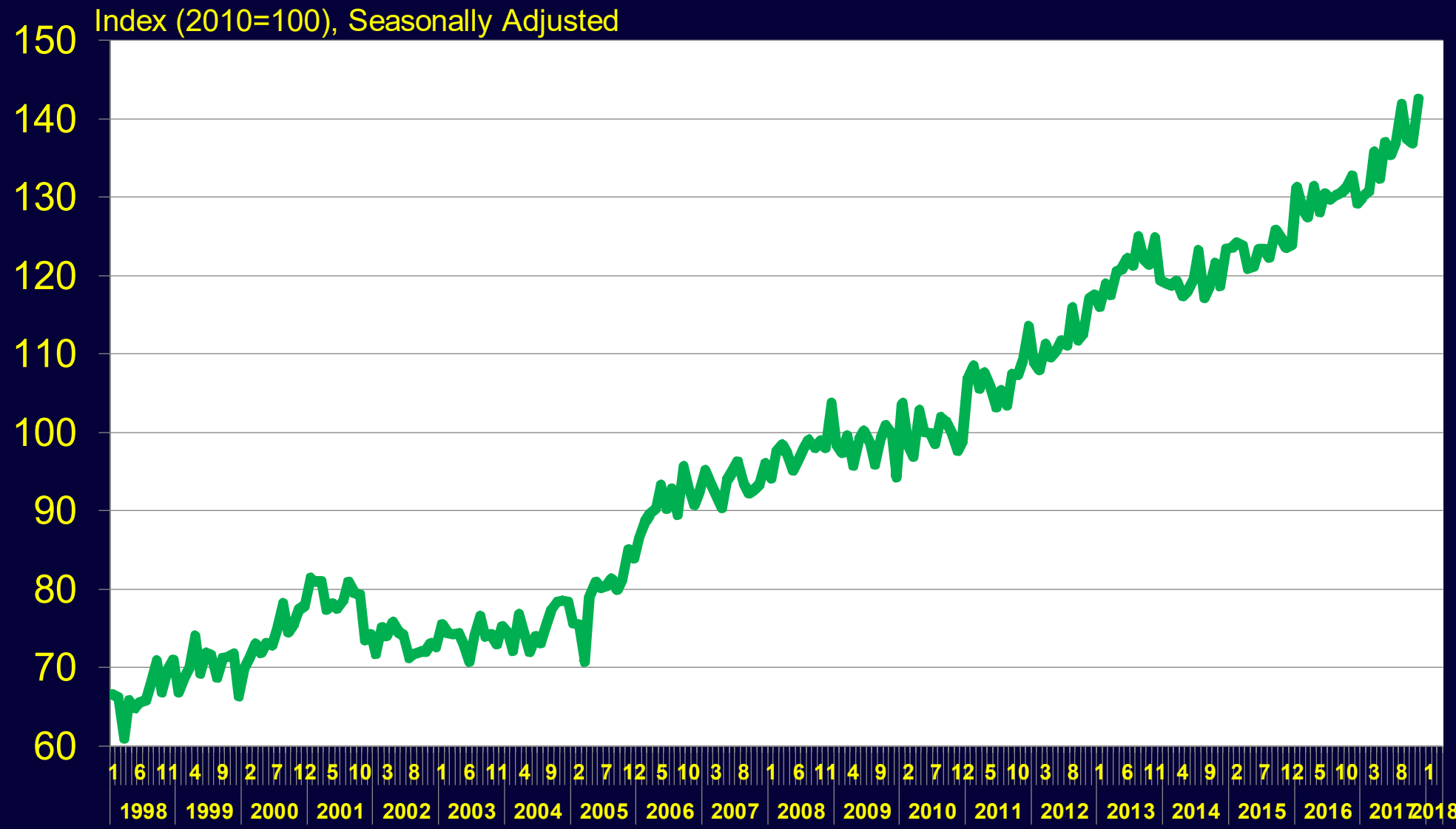
European Motor Vehicle Production



Eurostat, C291 category, EU 27 countries

Chart 23

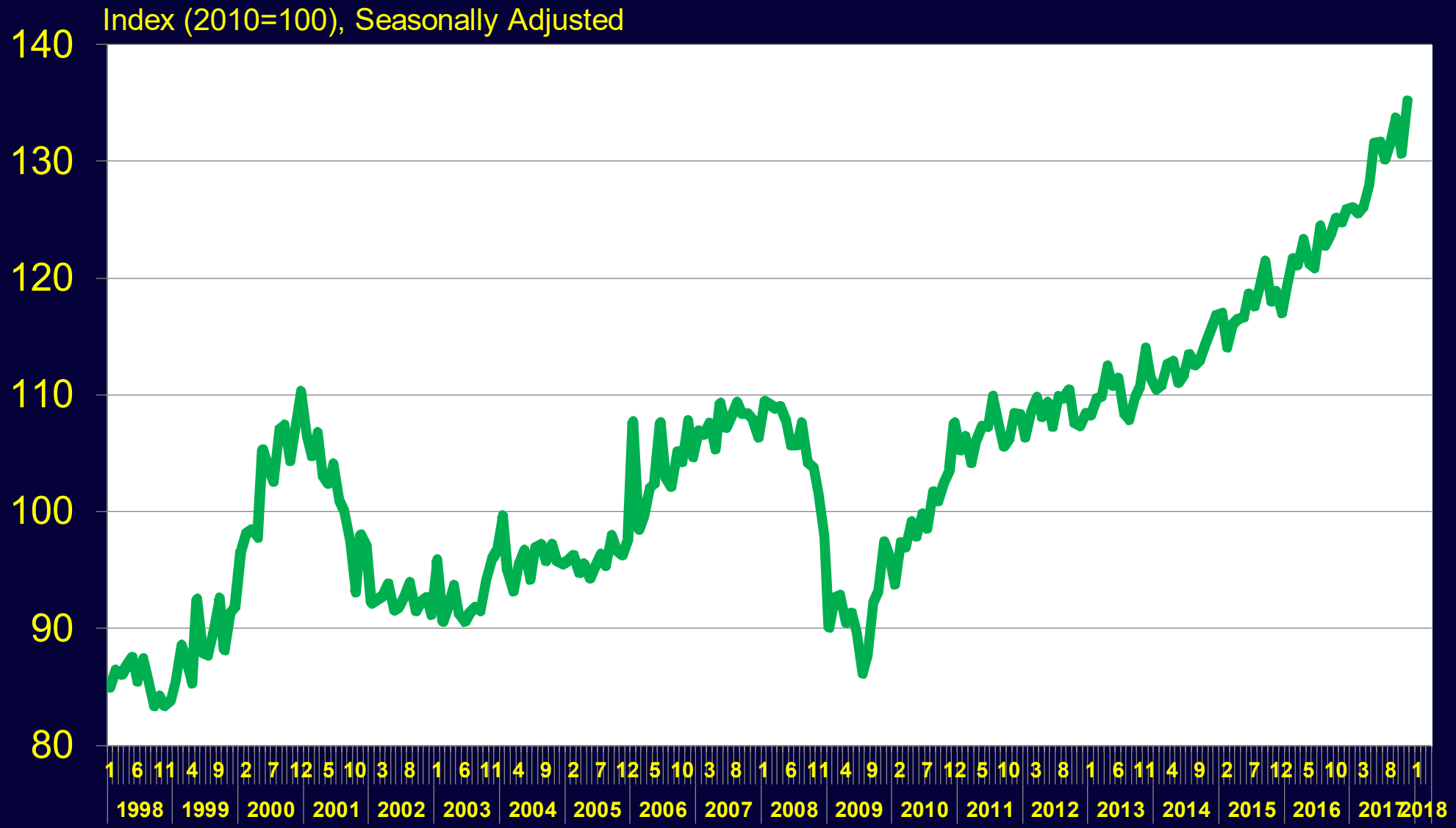
European Production
Aircraft, Spacecraft & Related Equipment



Eurostat, C303 category, EU 27 countries

Chart 24

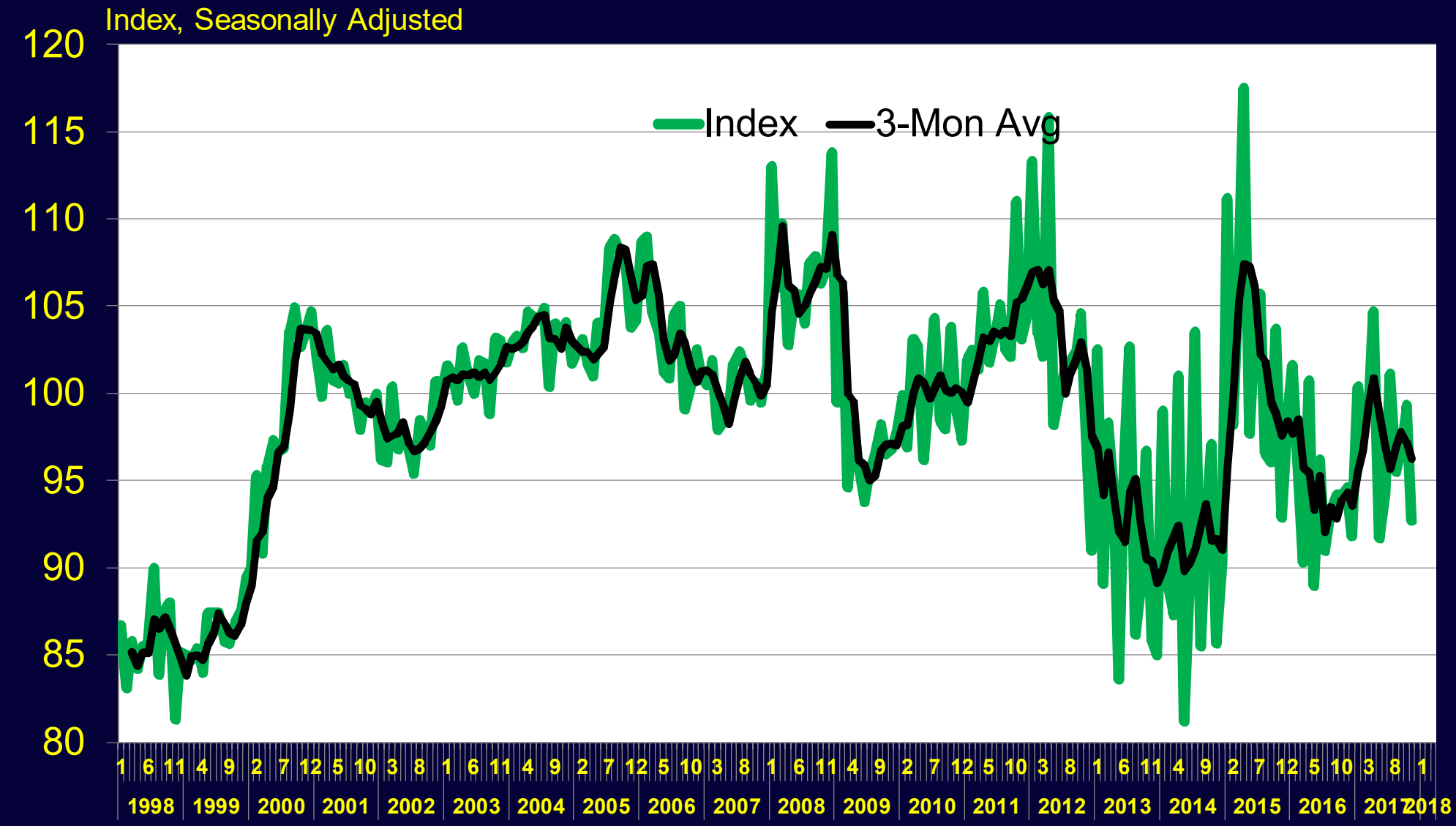
European Production - Instruments & Appliances for Measuring, Testing & Navigation



Eurostat, C2651 category, EU 27 countries

Chart 25

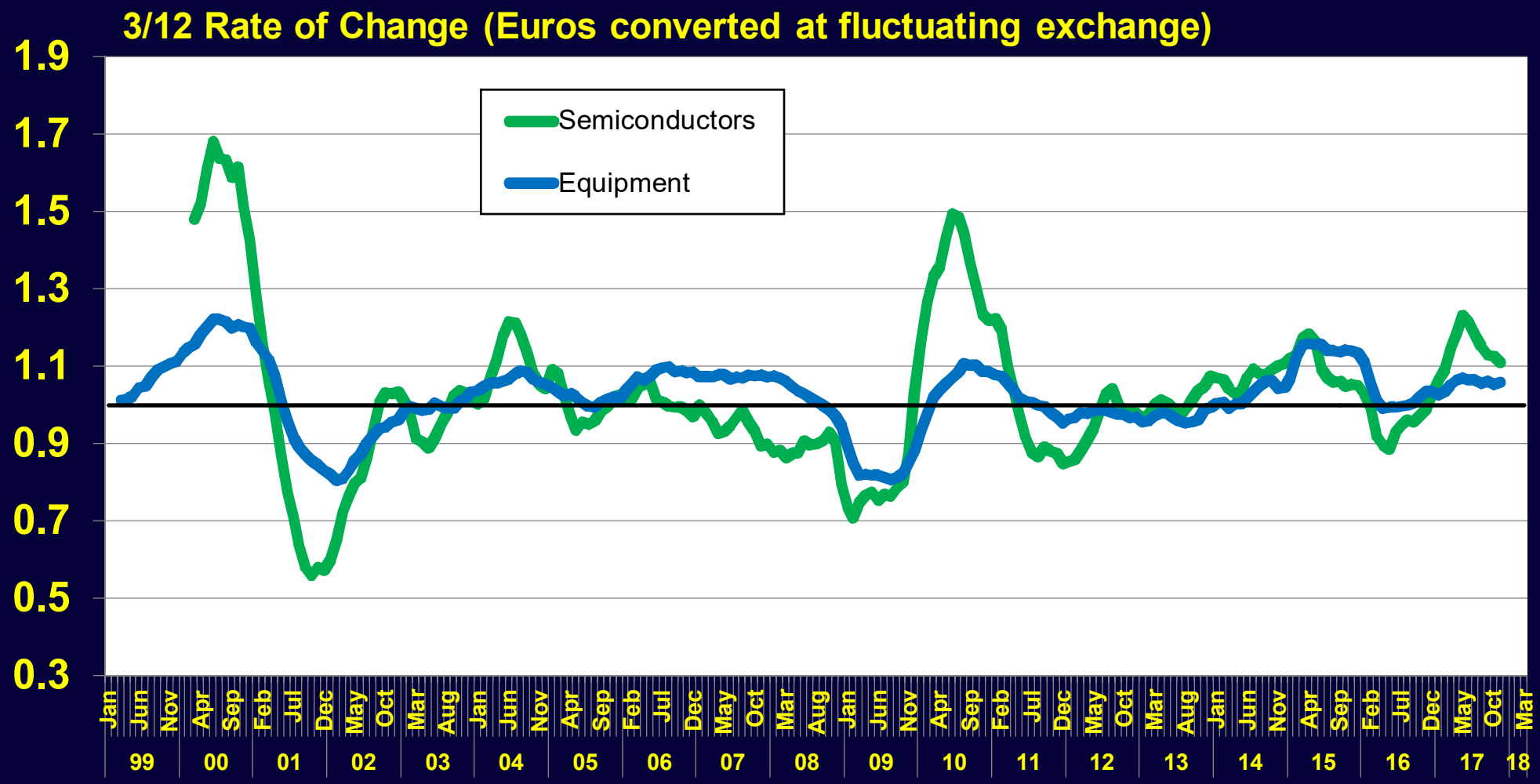
European Production - Irradiation, Electromedical & Electrotherapeutic Equipment



Eurostat, C266 category, EU 27 countries

Chart 26

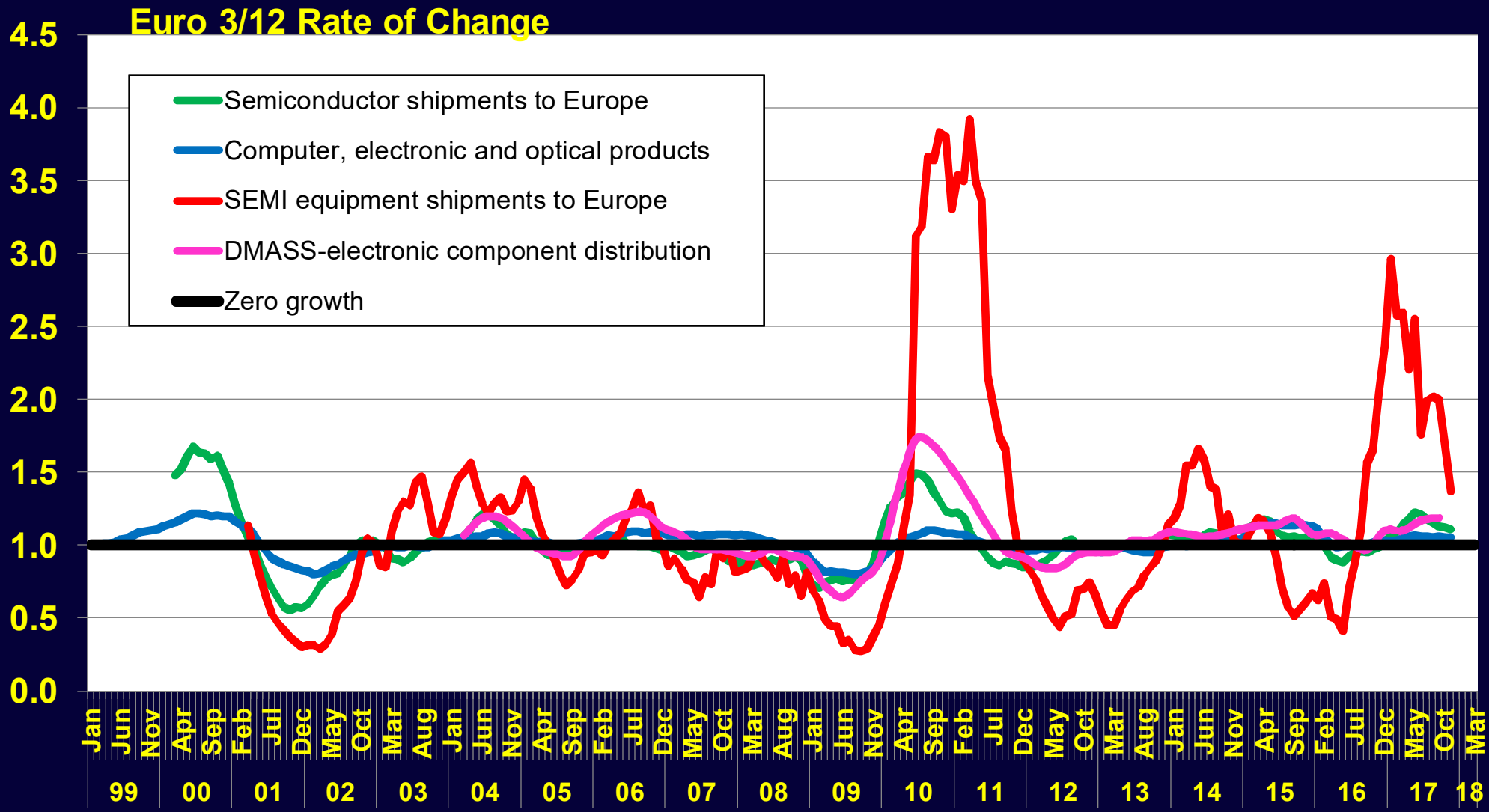
Semiconductor Shipments to Europe vs. European Electronic Equipment Production



Total $ Semiconductor Shipments from All Countries to Europe www.sia-online.org/, Eurostat class C26, EU27, European Computer, Electronic & Optical products Production

Chart 27

European Computer, Electronic and Optical Products, Semiconductors, & SEMI Equipment Shipments



Total $ Semiconductor Shipments from All Countries to Europe www.sia-online.org/,
Eurostat class C26 & SEMI, CCG Extrapolation of SEMI growth

Chart 28

European Loaded Electronic Board Production



Eurostat, C2612

Chart 29

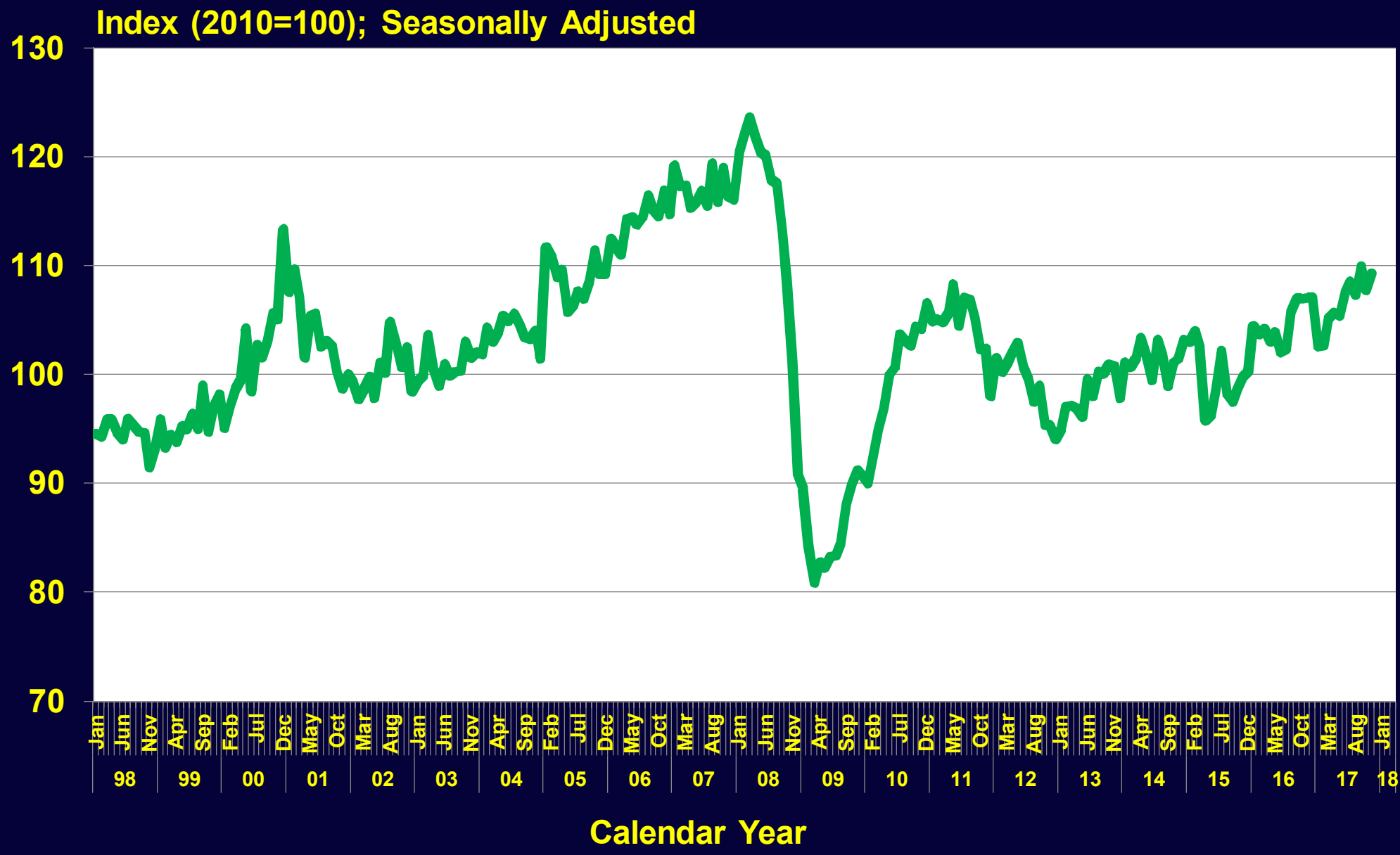
European Electronic Components & Board Production



Eurostat

Chart 30

European Electronic Wiring Devices



Eurostat

Chart 31

European PCB Monthly Shipments



Source: Custer Consulting Group estimate based upon industry data

Chart 32

Present Growth Rates (%)
European Electronics Industry

	Latest Month	Annualized Growth Rate	3-Month Growth Rate
ELECTRONIC EQUIPMENT SHIPMENTS (Index CY 2010 =100)			
Computer, Electronic & Optical Products	11/17	5.5	6.0
Components & Boards	11/17	4.5	2.3
Components	11/17	5.8	3.9
Wiring Devices	11/17	2.2	1.8
Loaded Electronic Boards	11/17	0.6	-2.0
Office Equipment	11/17	12.5	5.1
Consumer Electronics	11/17	10.4	14.4
Electric Domestic Appliances	11/17	3.0	6.0
Electronic Instruments	11/17	6.2	6.9
Medical Electronics	11/17	2.4	2.0
Motor Vehicles	11/17	2.5	4.7
Air & Space Aircraft	11/17	4.5	5.6
Semiconductor Shipments (Eur) to Europe	11/17	14.5	11.0
Industrial Production	11/17	3.3	4.5

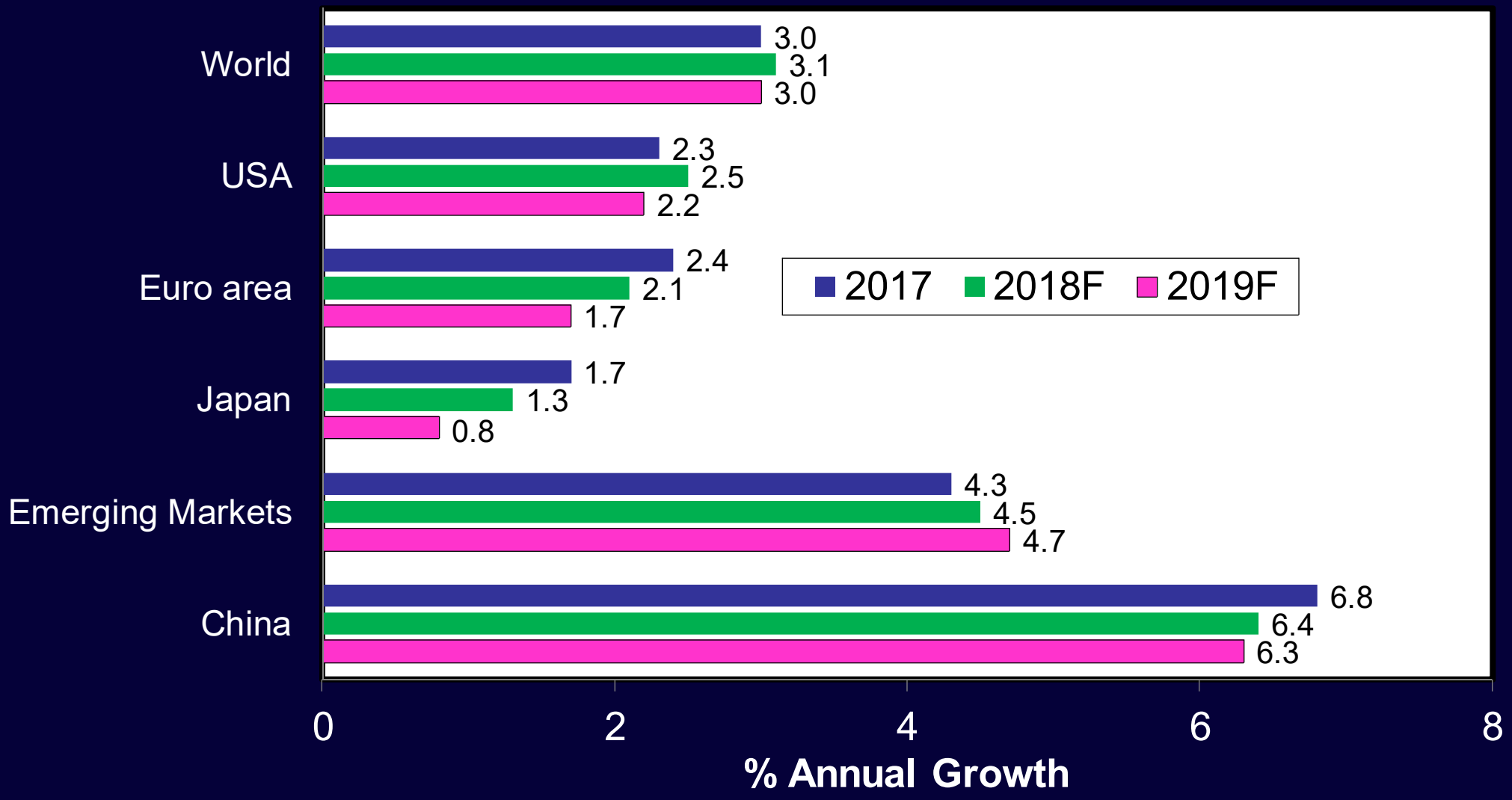
NOTE: 3 month growth rates compare most recent 3 months to same 3 months one year earlier. Also called 3/12 growth

Sources: Eurostat & SIA

Chart 33

Real GDP Growth

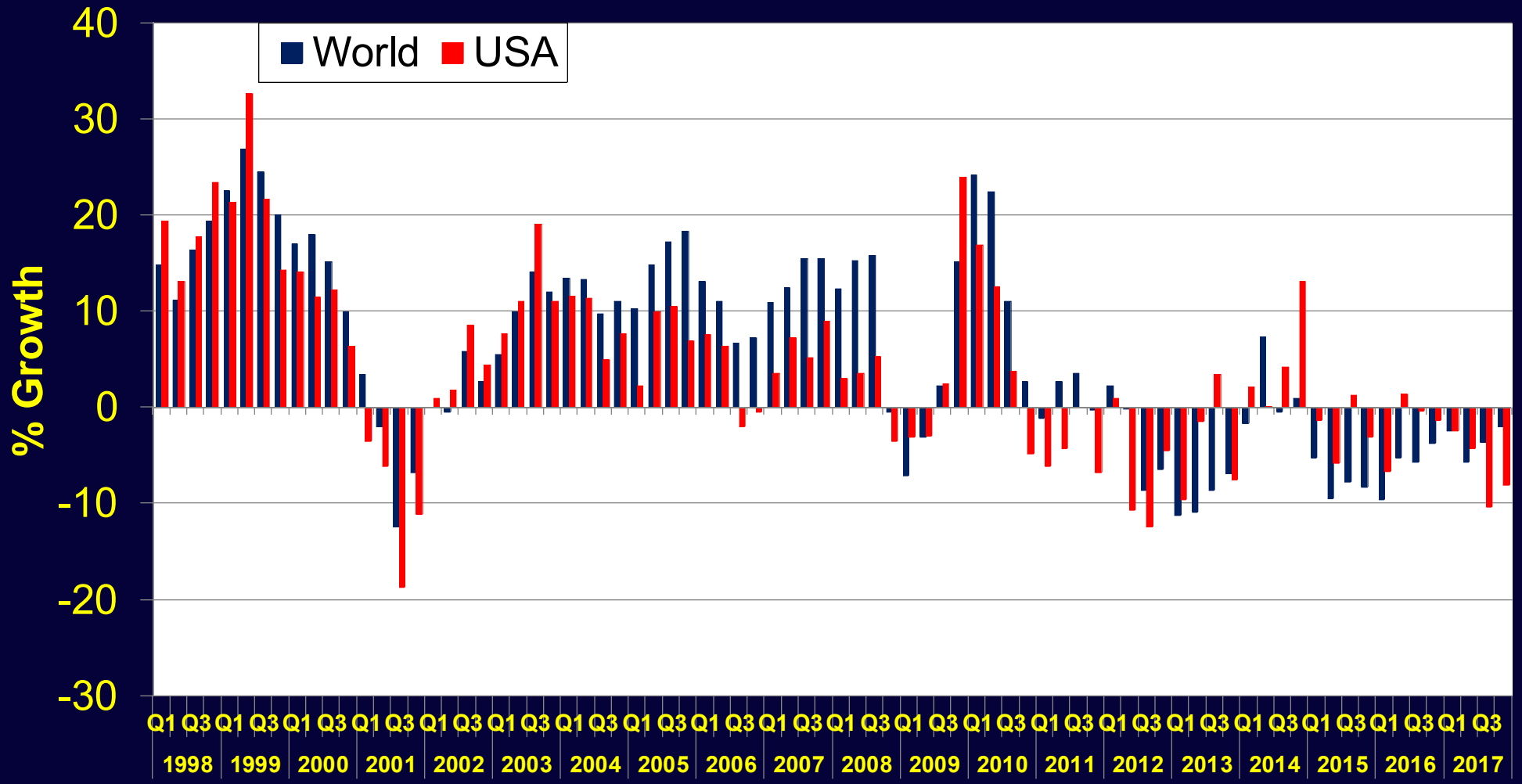
Growth rates calculated using constant 2010 US$ weights



World Bank 1/18

Chart 34

Personal Computer Market Growth
World & USA

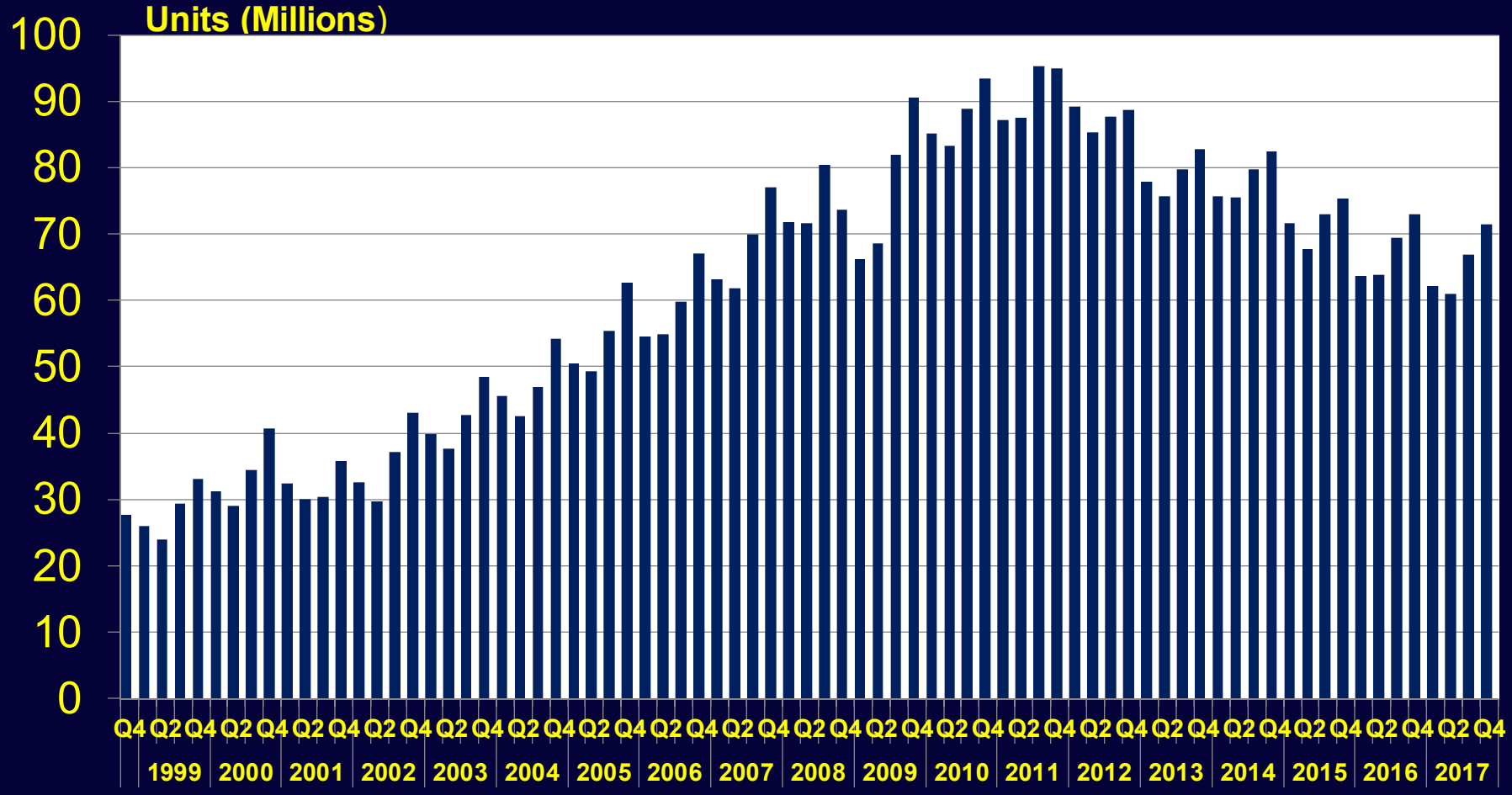


Gartner Dataquest

Chart 35

Personal Computer Unit Shipments

World

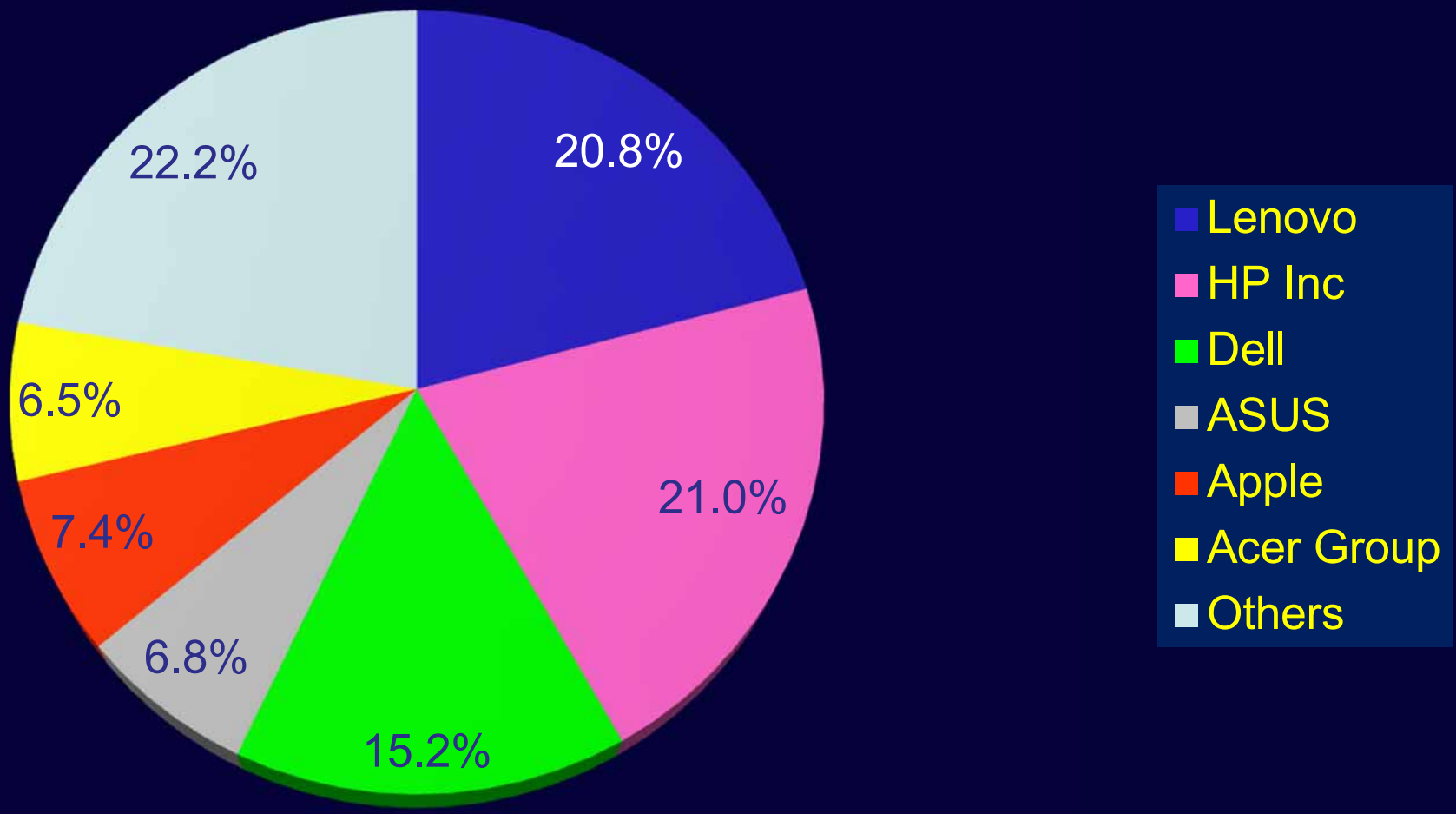


Gartner 1/18 & prior reports
Server & Media Tablets not included

Chart 36

World Personal Computer Shipments 2017

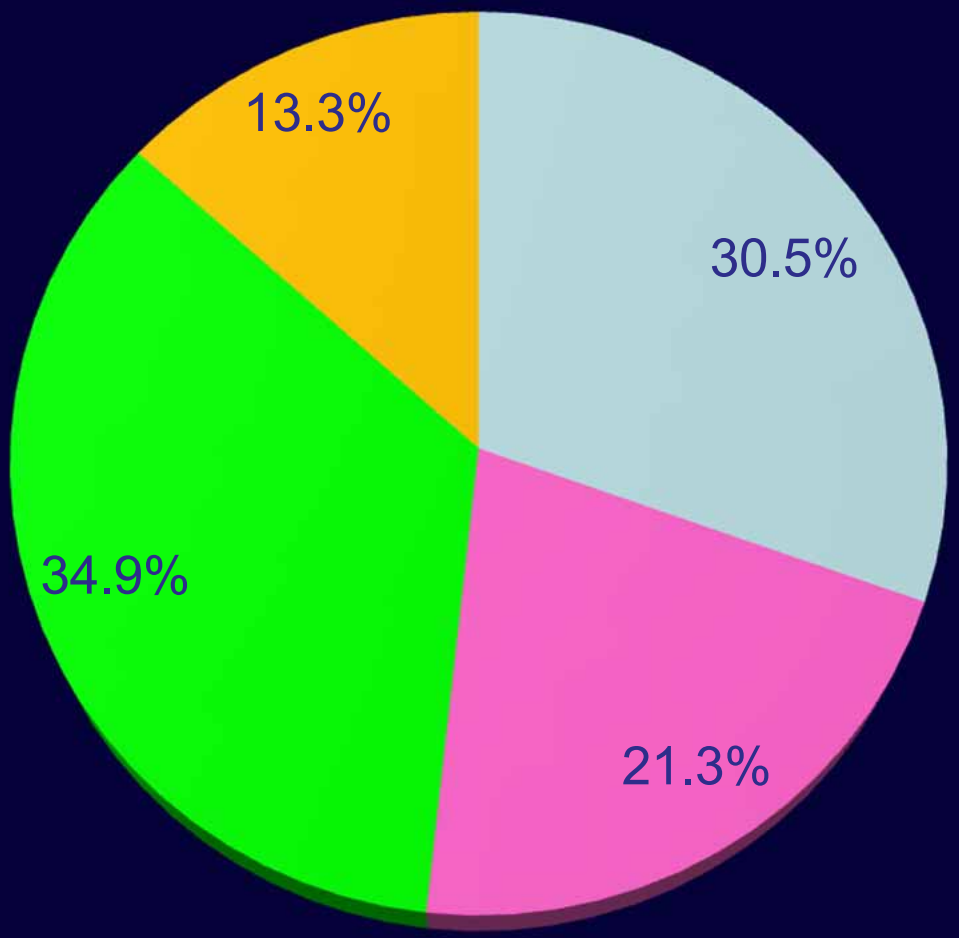
Units



TOTAL: 262.5 Million Units

Chart 37

World Personal Computer Market 4Q'17



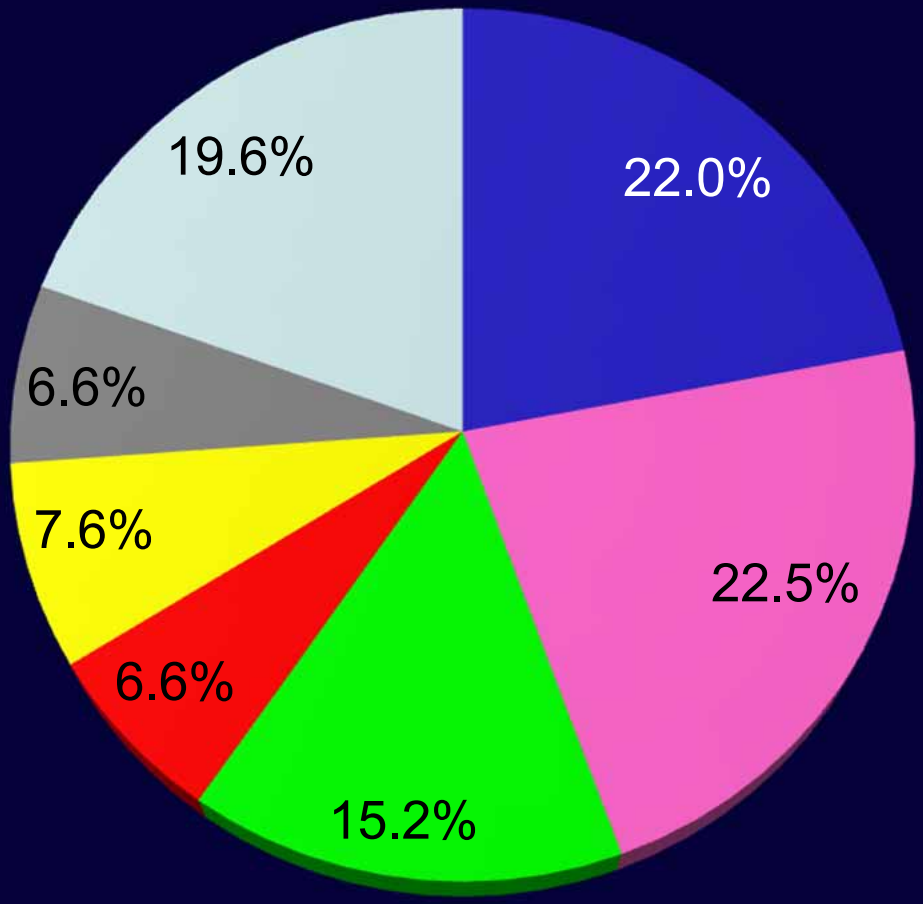
TOTAL: 71.6 Million Units

Includes desk-based PCs, mobile PCs, mini-notebooks but not Media Tablets

Gartner 1/18

Chart 38

World Personal Computer Market 4Q'17



TOTAL: Million Units

Includes desk-based PCs, mobile PCs, mini-notebooks but not Media Tablets