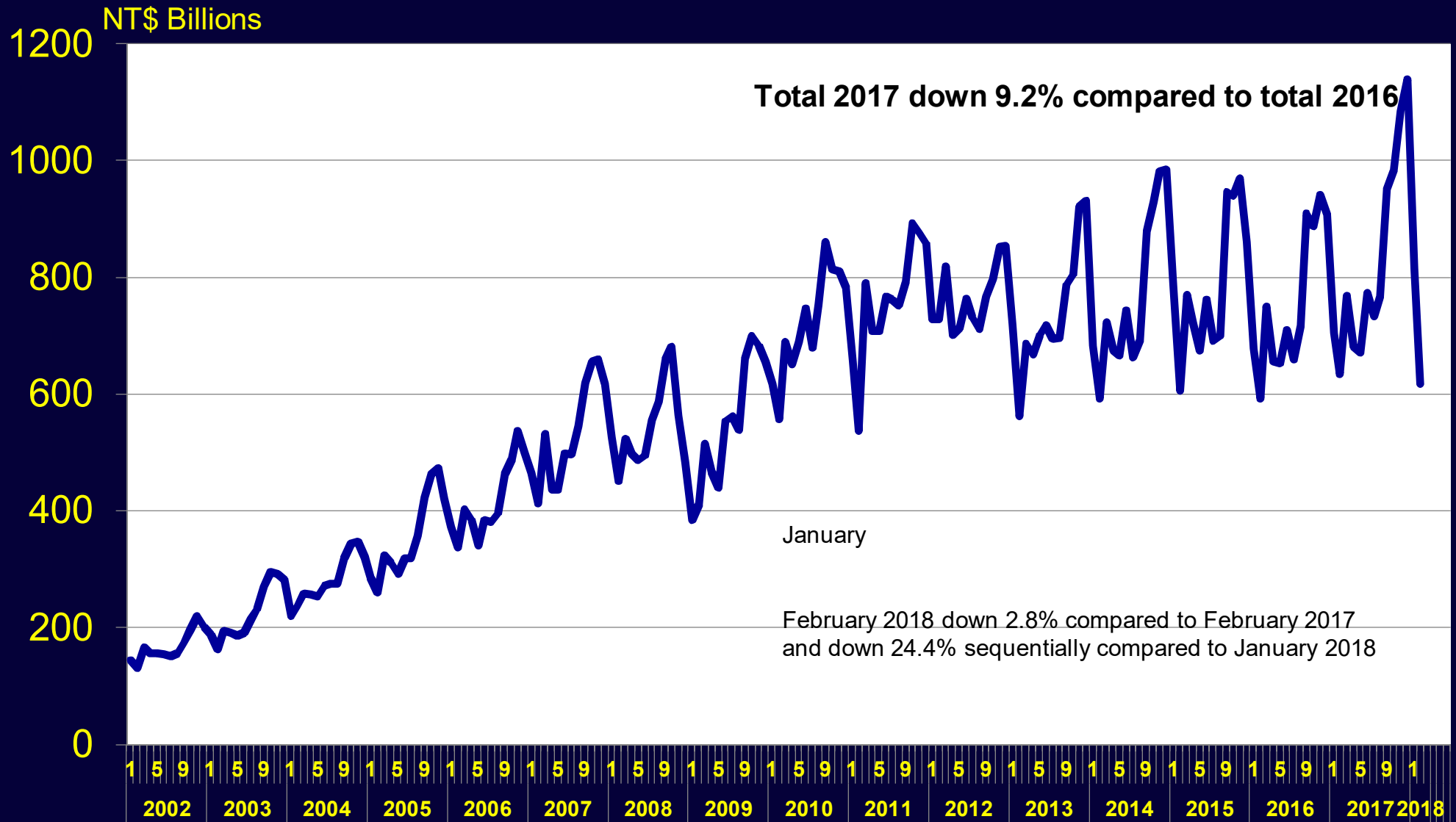


Taiwan/China Electronic Equipment Producers Composite of 101 Manufacturers Consolidated Revenue

Chart 1

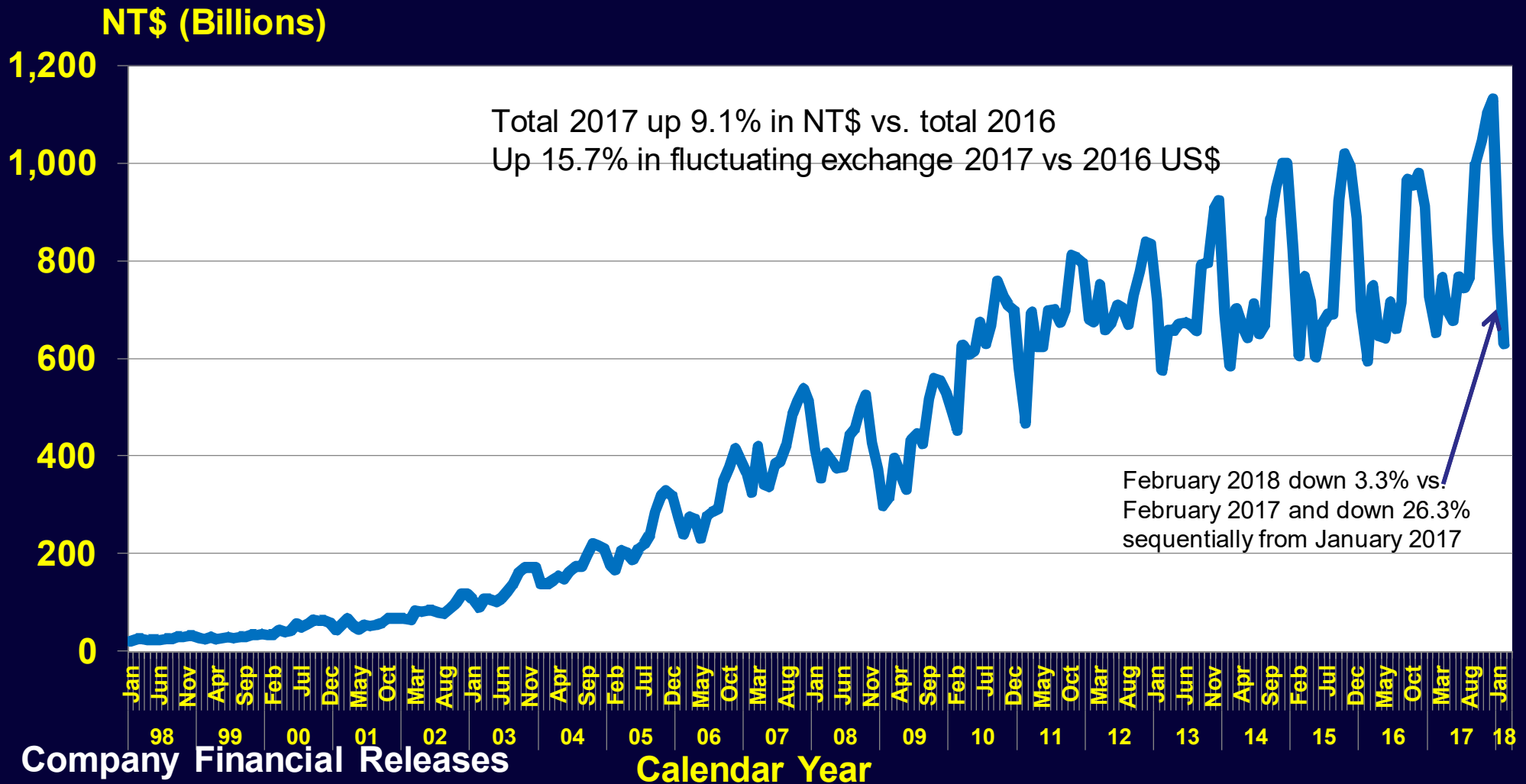


Taiwan listed companies, often with significant manufacturing in China

Chart 2

Taiwan ODM Companies

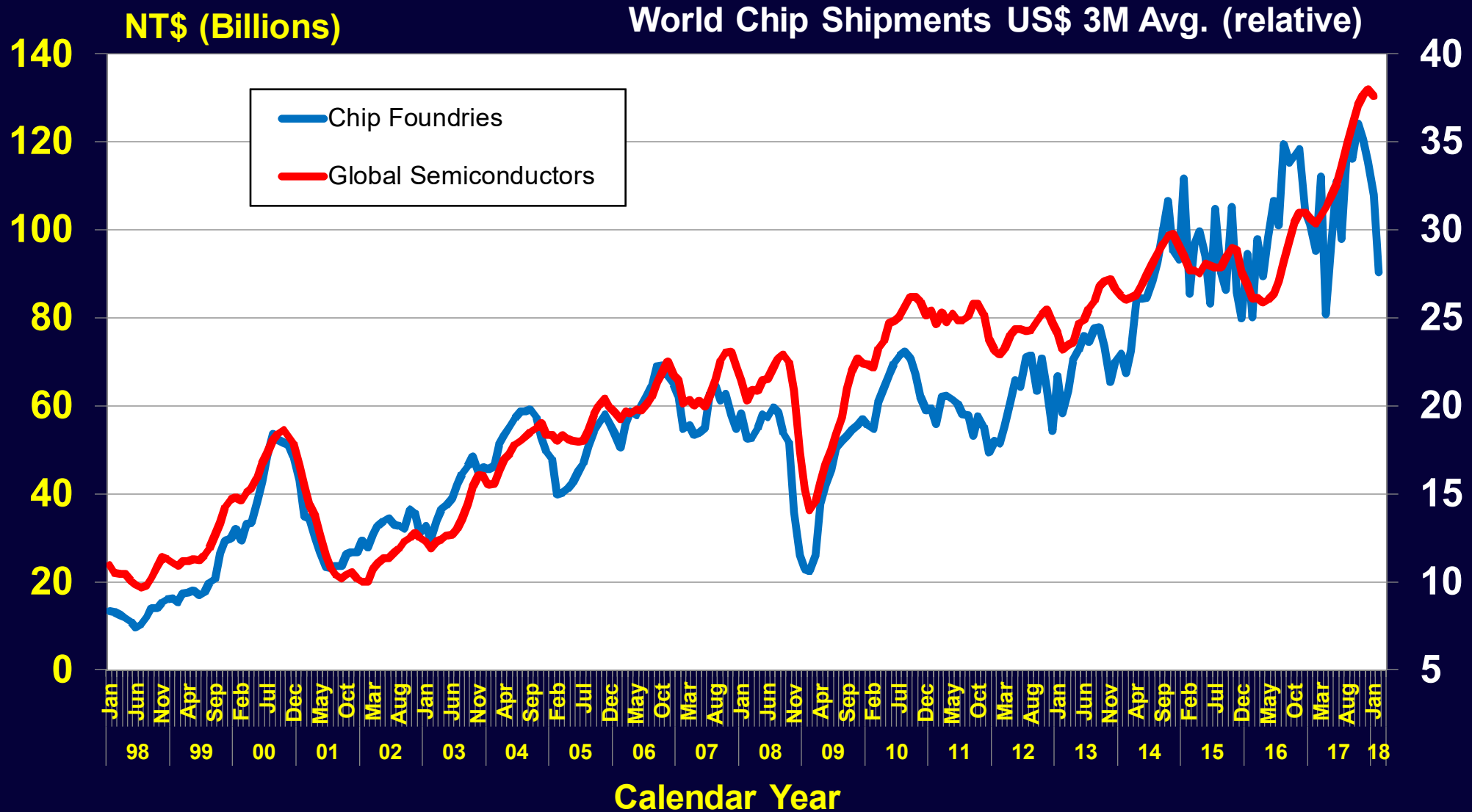
Composite Sales of 11 Large Manufacturers



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

Chart 3

Taiwan Wafer Foundry Composite vs. Global Semiconductor Revenues



14 Taiwan Company Financial Releases & SIA

Chart 4

Taiwan Package & Test Companies Composite of 20 Manufacturers



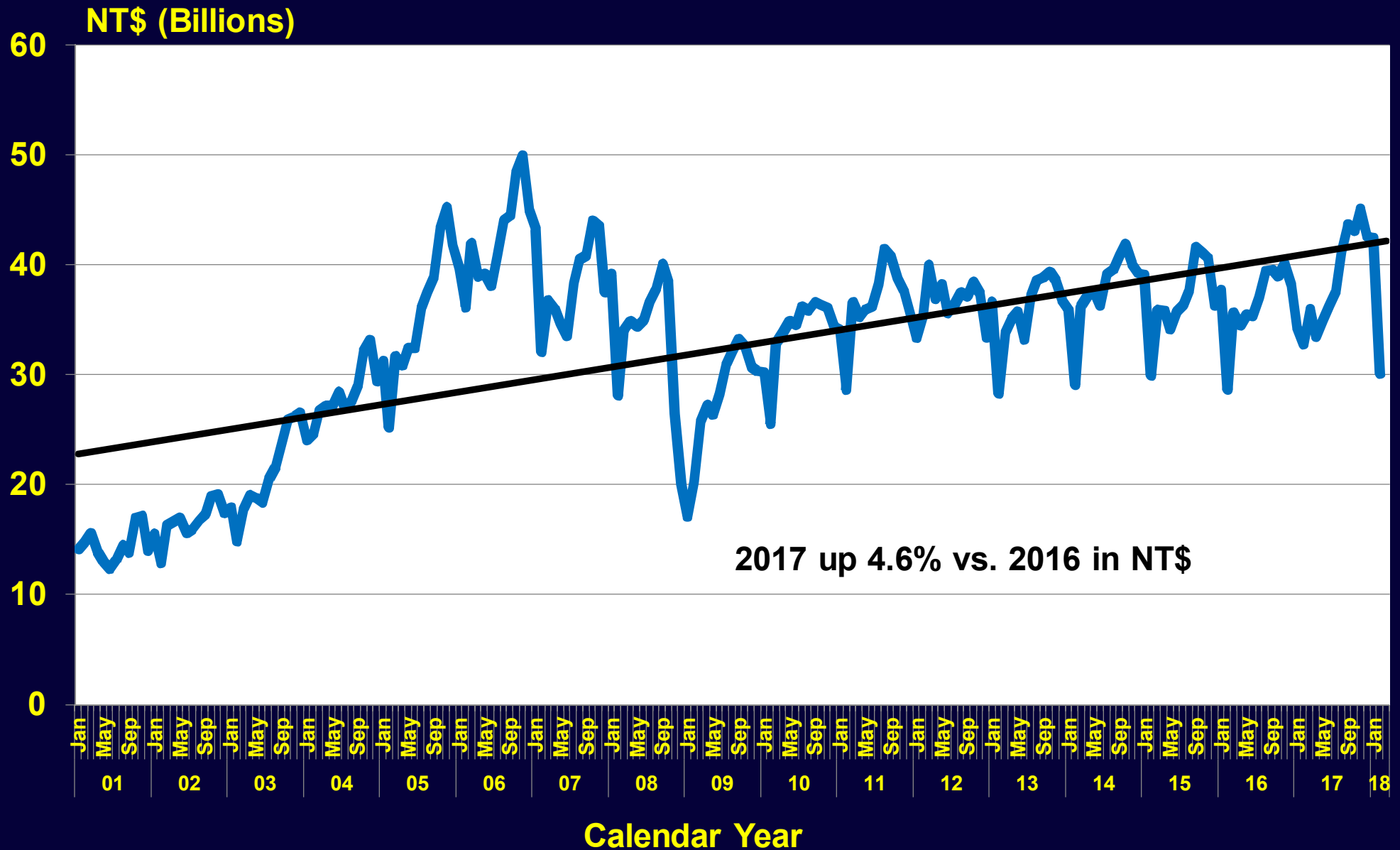
ASE, Ardentec, ChipMOS Tech, Chipbond Tech, E'dale Tech, Formosa, Advance Tech, Fupo Elec, Greatek Elec, International Semiconductor Tech, King Yuan Elec, Lingsen Precision, Orient Semiconductor, Powertech Tech, Signality System, Sigurg Microelectronics, SPIL, Thalín Semiconductor, Vate Tech, Walton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

Taiwan Memory Companies Composite of 7 Manufacturers



Chart 7

Taiwan Rigid & Flex PCB Shipments Broad Composite of 46 Taiwan-listed Manufacturers

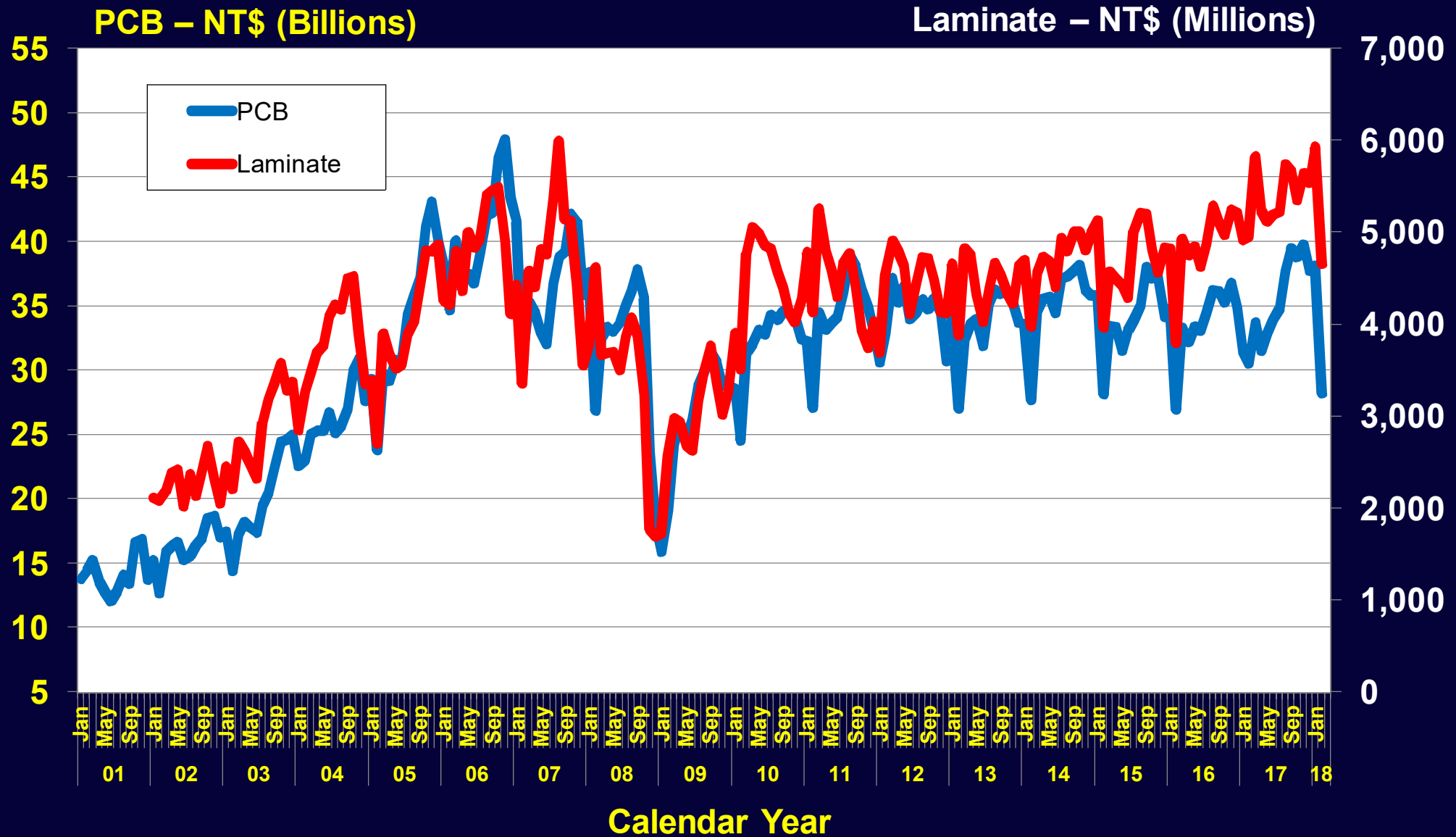


Company Financial Releases

Chart 8

Taiwan Shipments

42 Rigid PCB & 8 Laminate Manufacturers



Company Financial Releases

Monthly Semiconductor Shipments

\$ Billions (3-month avg in US\$)

	<u>1/17</u>	<u>1/18</u>	<u>% CH</u>
Americas	6.14	8.63	+ 40.6%
Europe	2.84	3.40	+ 19.9%
Japan	2.79	3.21	+ 15.1%
China	10.16	12.01	+ 18.3%
Asia Pacific / All Other	8.73	10.35	+18.6%
Total	30.64	37.59	+ 22.7%

Chart 10

World Semiconductor Shipments

Monthly US\$

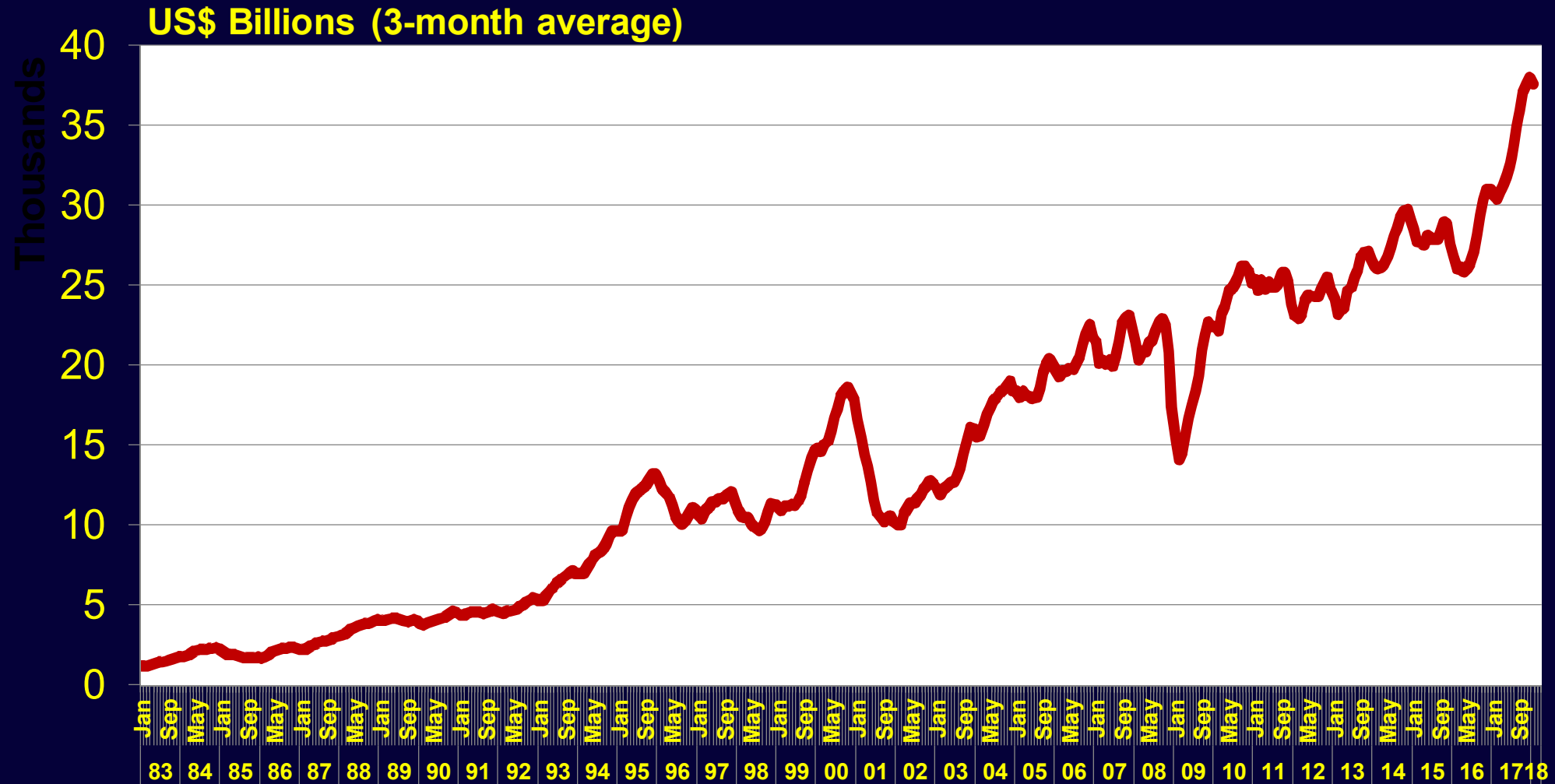


Chart 11 **Total Semiconductor Shipments to an Area**
Monthly Shipments - Reporting Firms

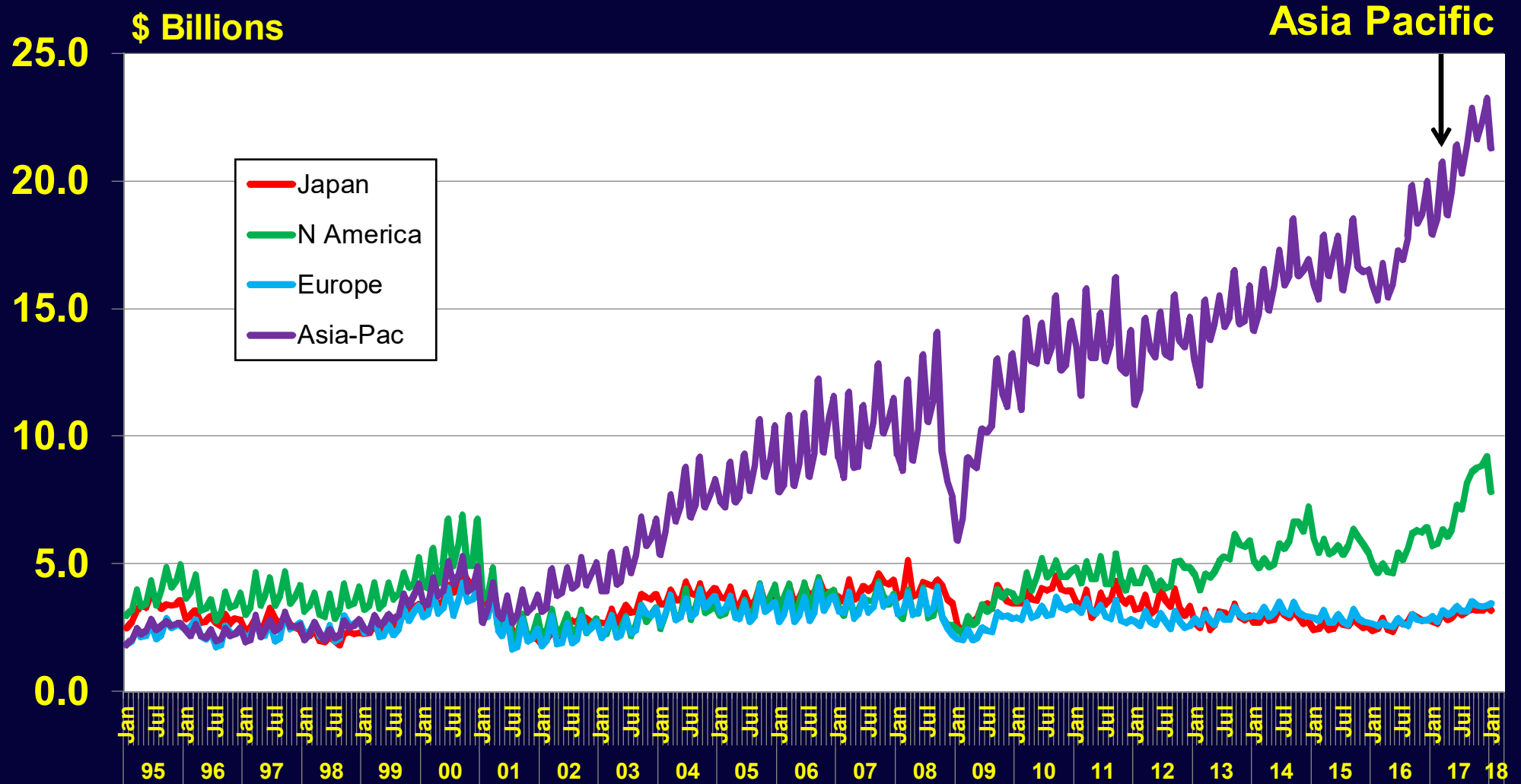
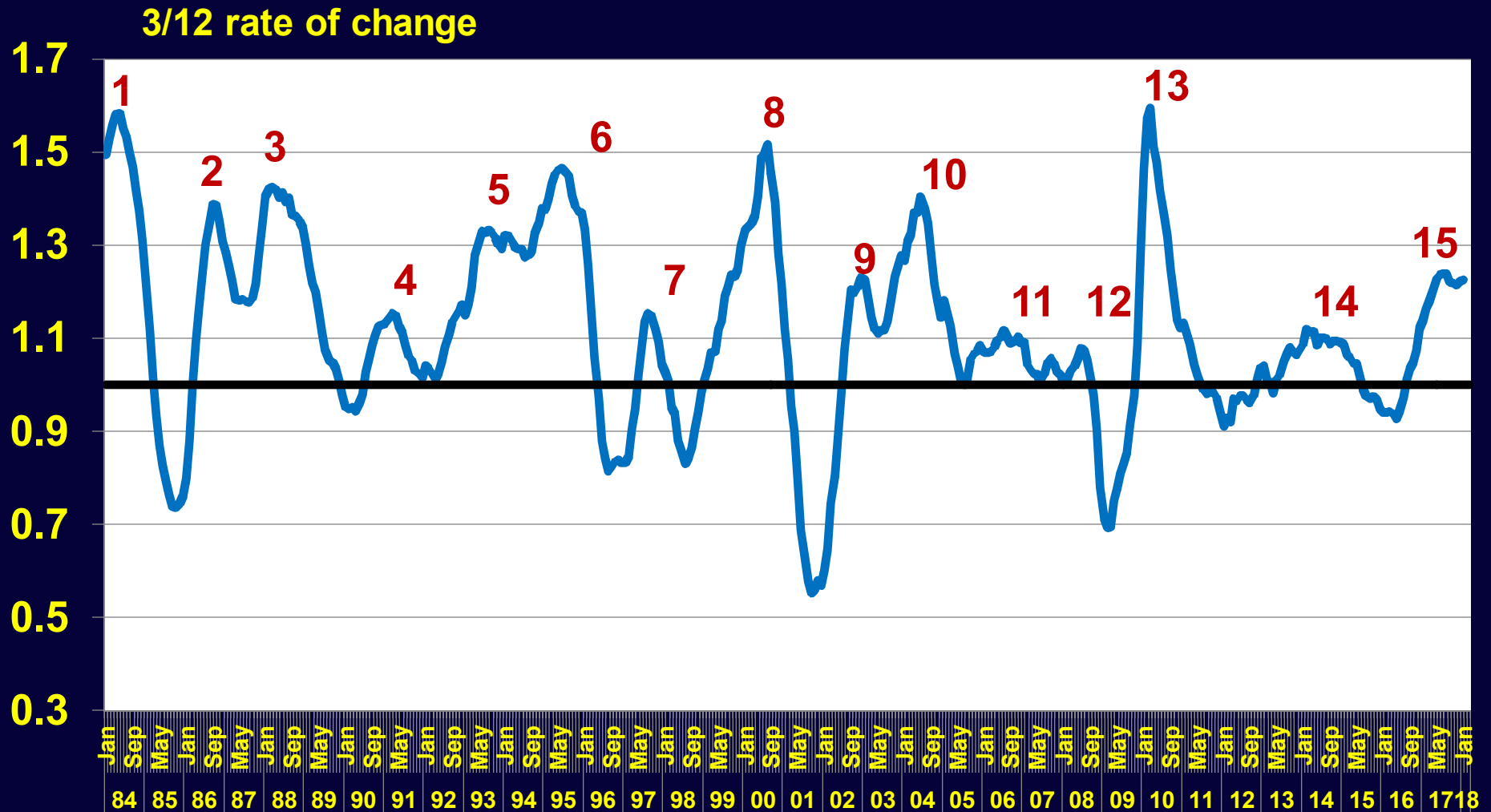


Chart 12

Global Semiconductor Shipments

3-Month Growth Rates on \$ Basis



Total \$ Shipments from All Countries to an Area

SIA website: www.sia-online.org/

Chart 13

N American Semiconductor Shipments

Monthly & 3-Month Average Shipments

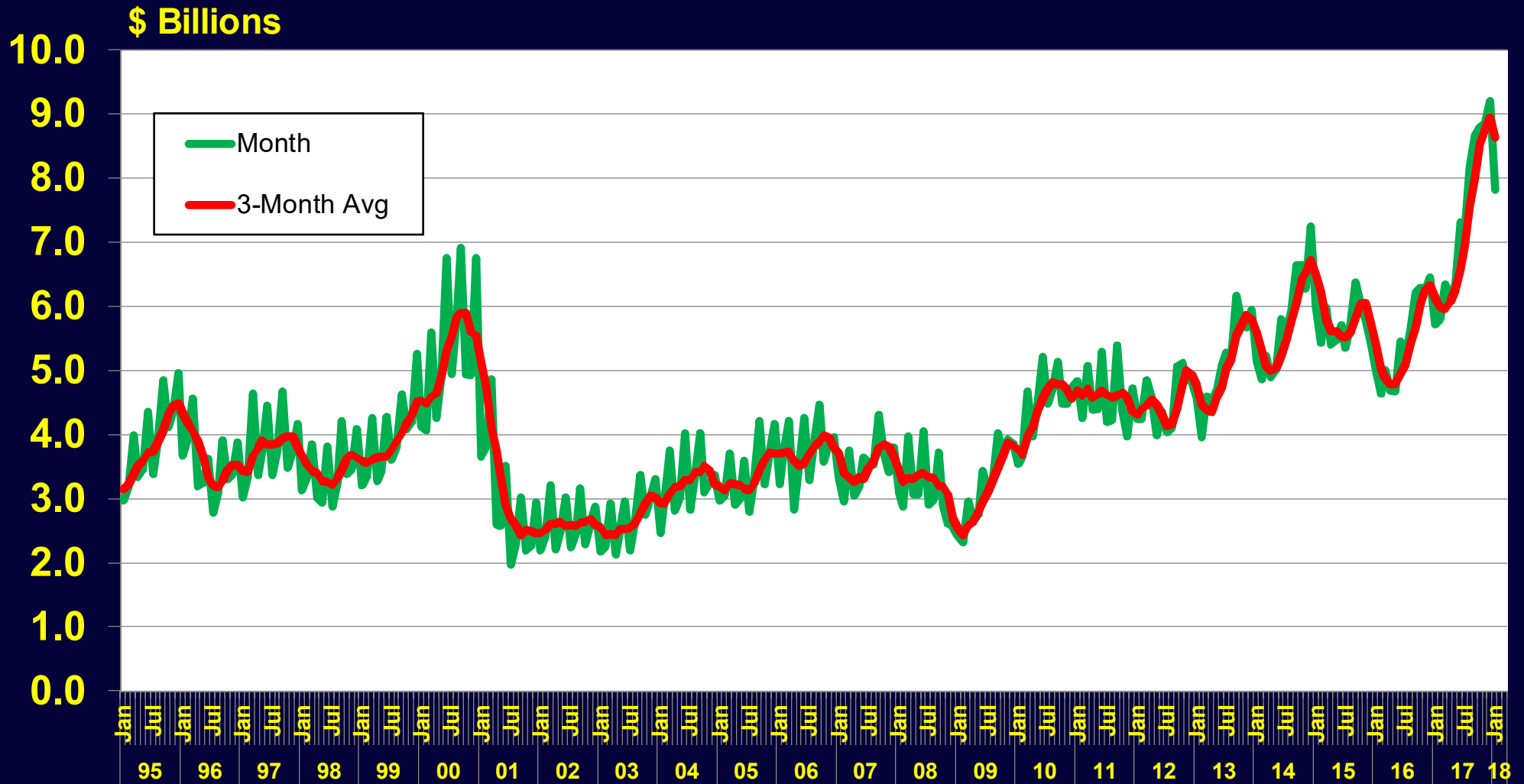


Chart 14

U.S. Electronic Equipment Order & Shipment Growth

Computer, Communications, Measurement & Control and Military

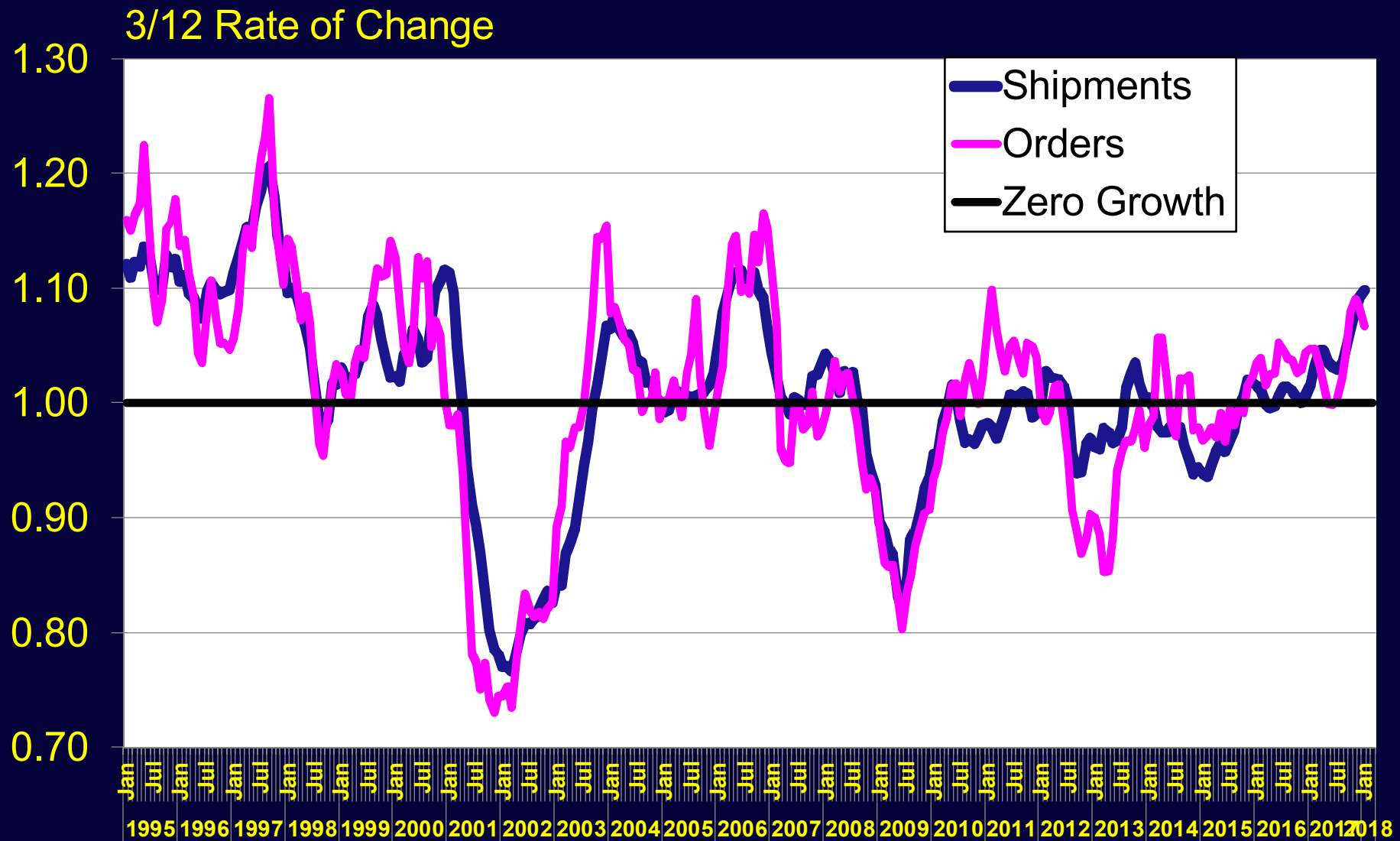


Chart 15

U.S. Electronic Equipment Orders

Monthly Data

\$ Billions (monthly, seasonally adjusted)

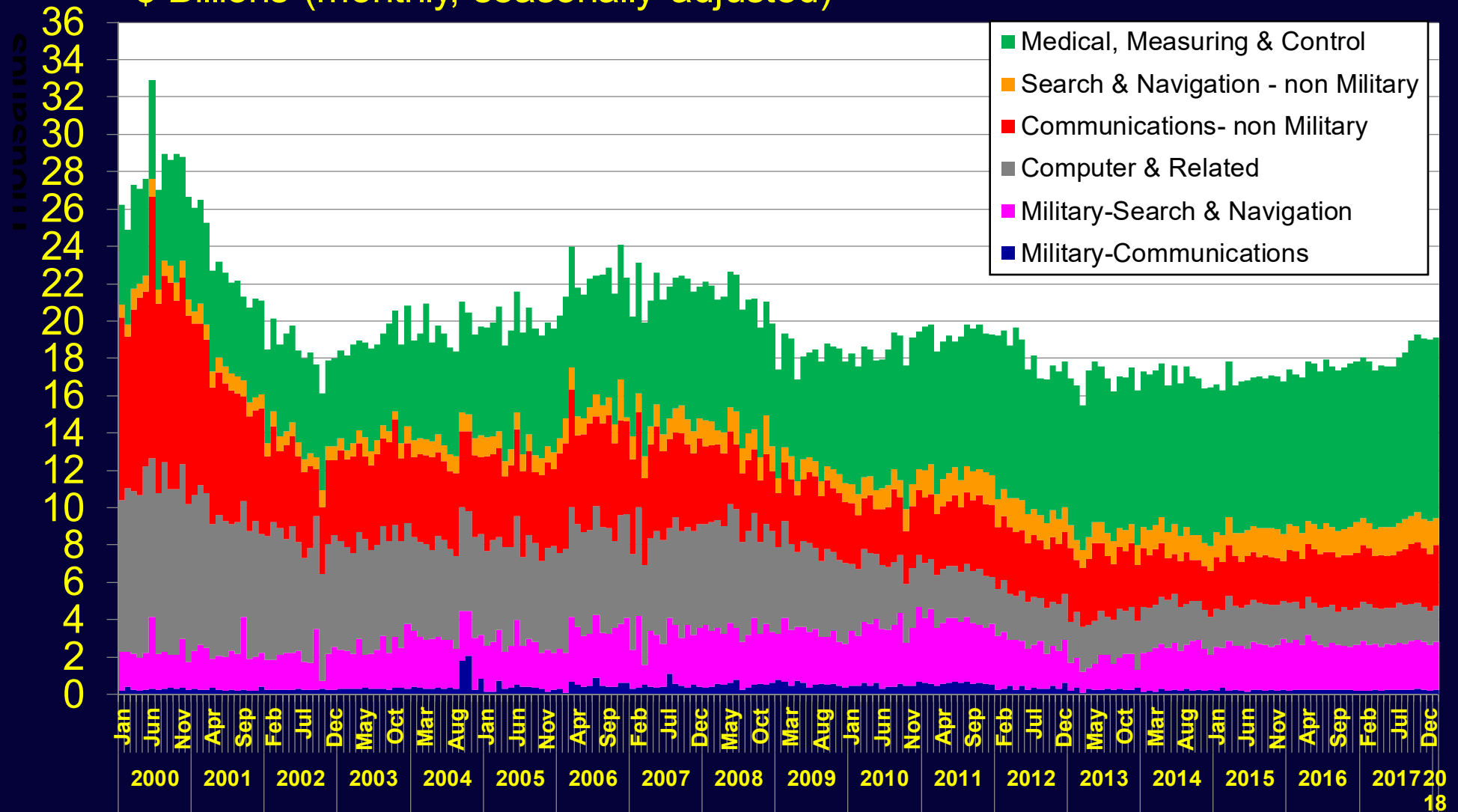
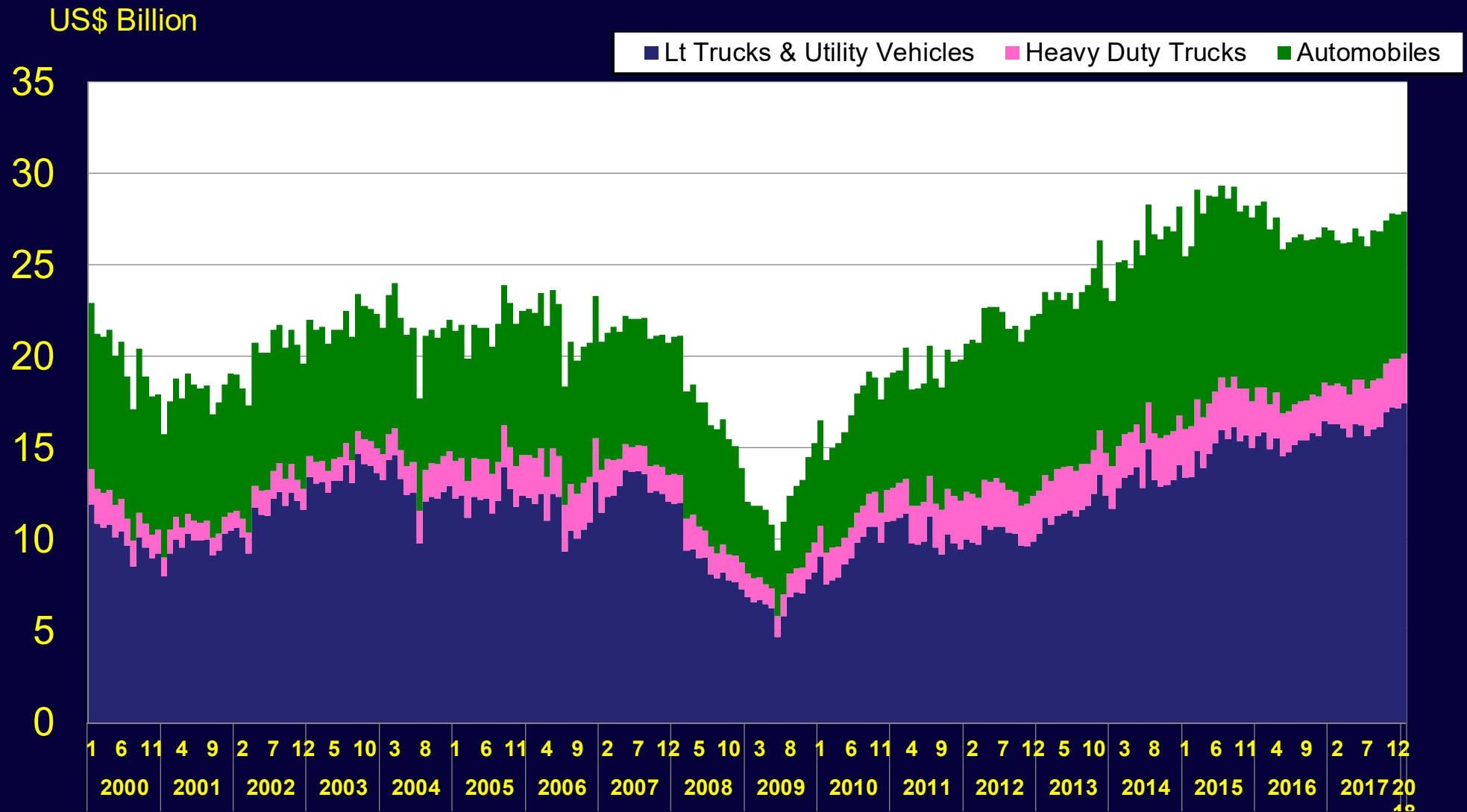


Chart 16

U.S. Vehicle Shipments



U.S. Military Electronics Orders & Shipments

Chart 17

Defense Communication & Search & Navigation Equipment

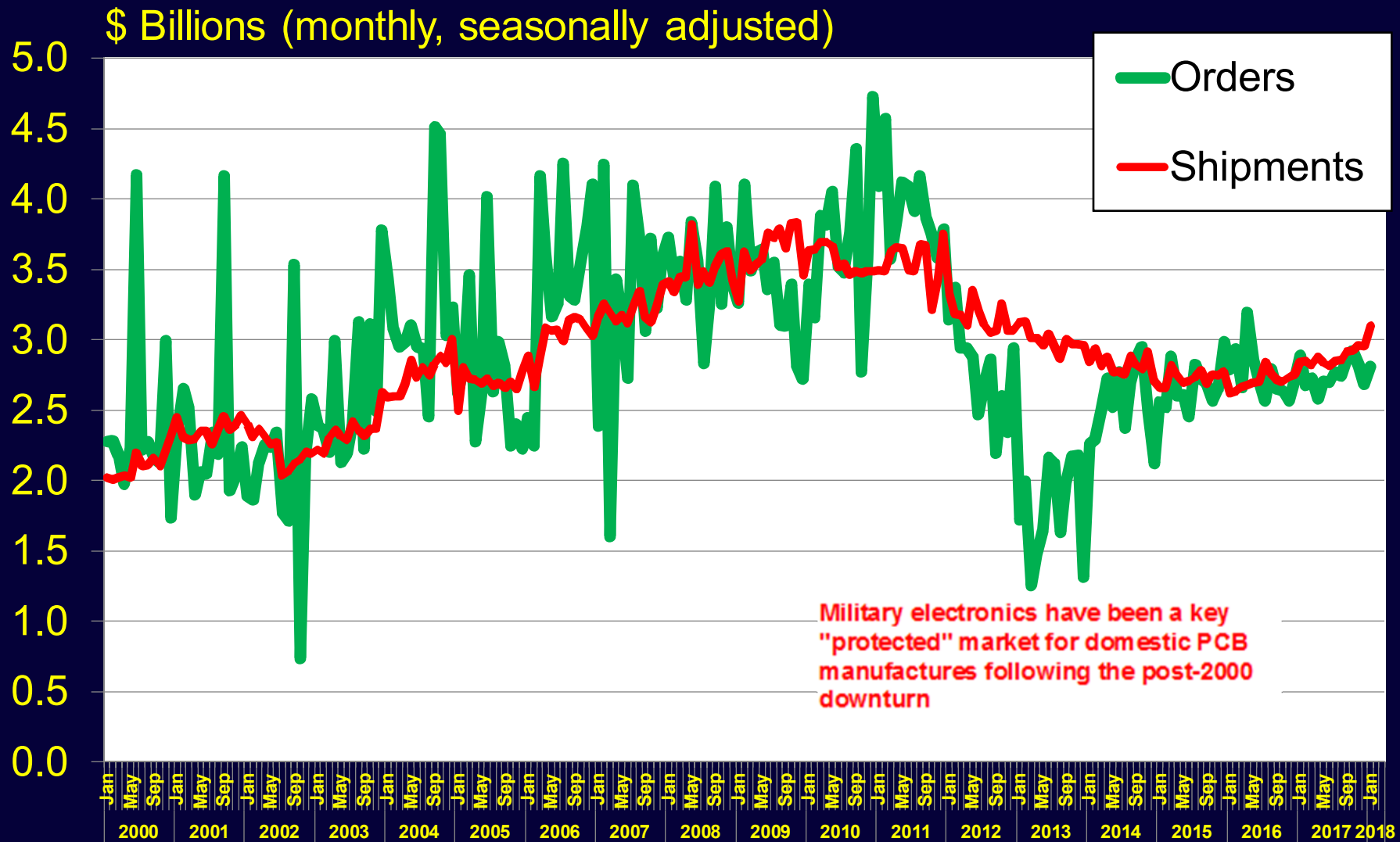


Chart 18

U.S. Electromedical, Measurement & Control Equipment Orders & Shipments

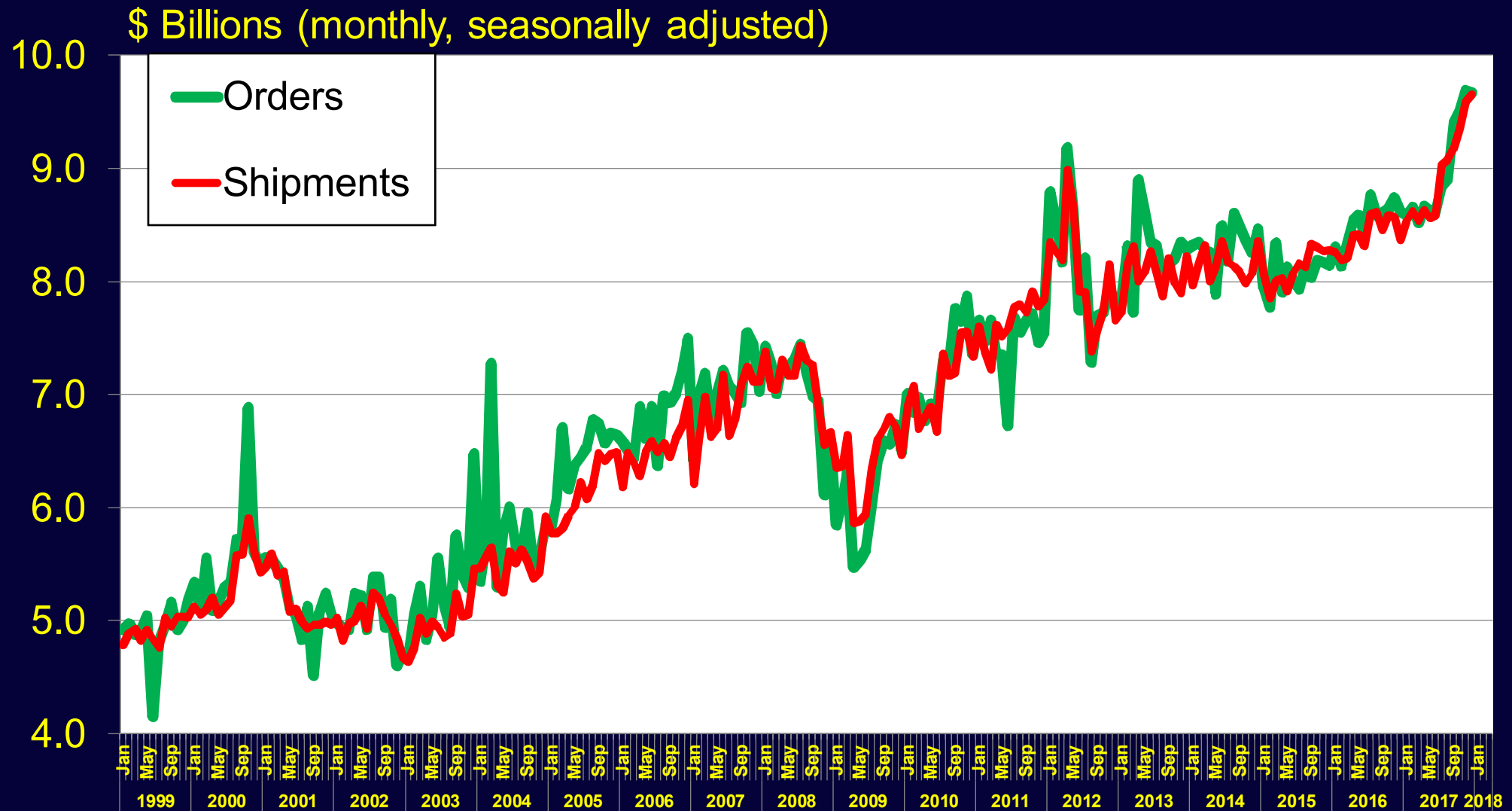
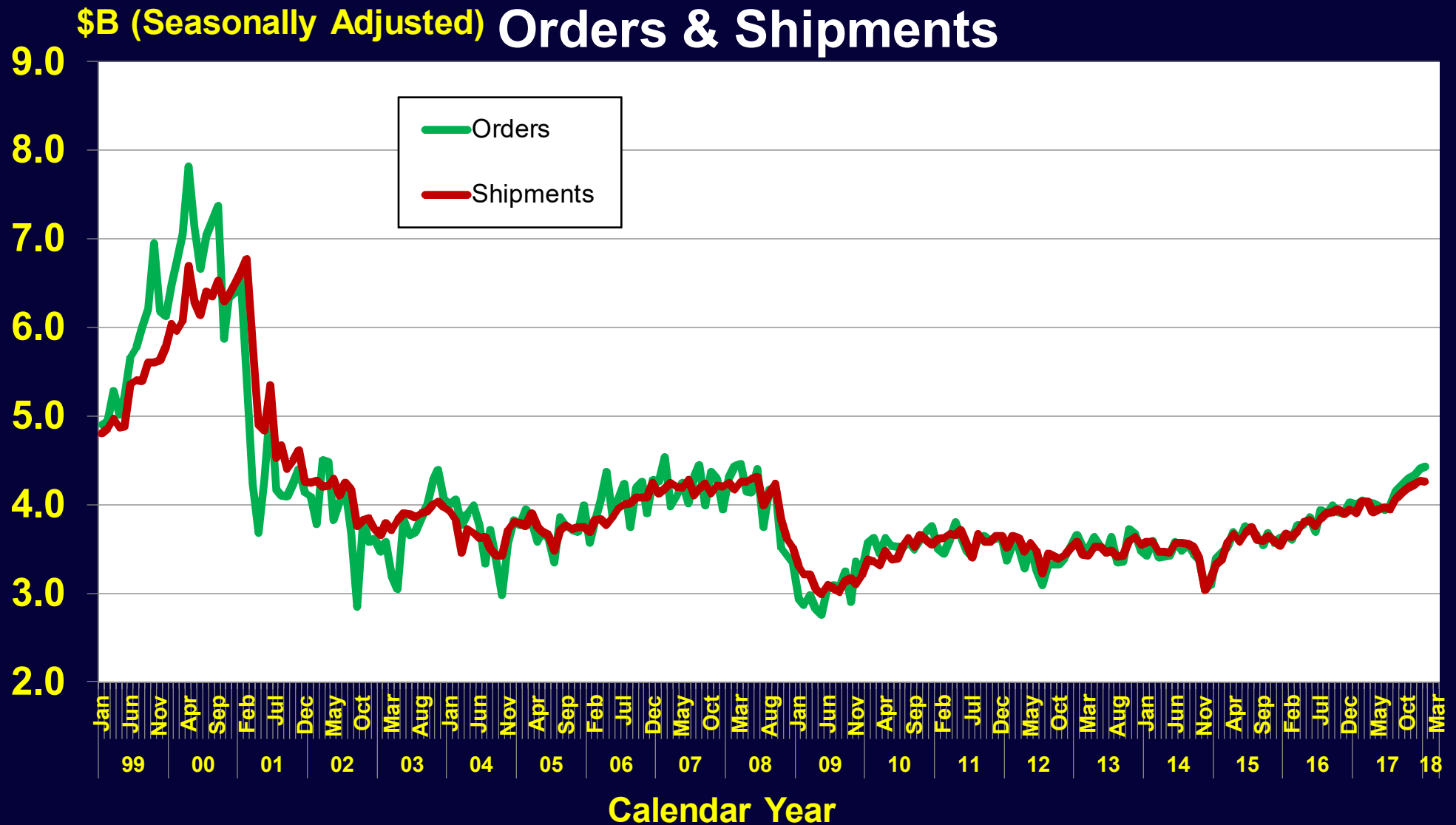


Chart 19

U.S. Production: "Other" Electronic Components (excludes semiconductors)



Present Growth Rates (%)

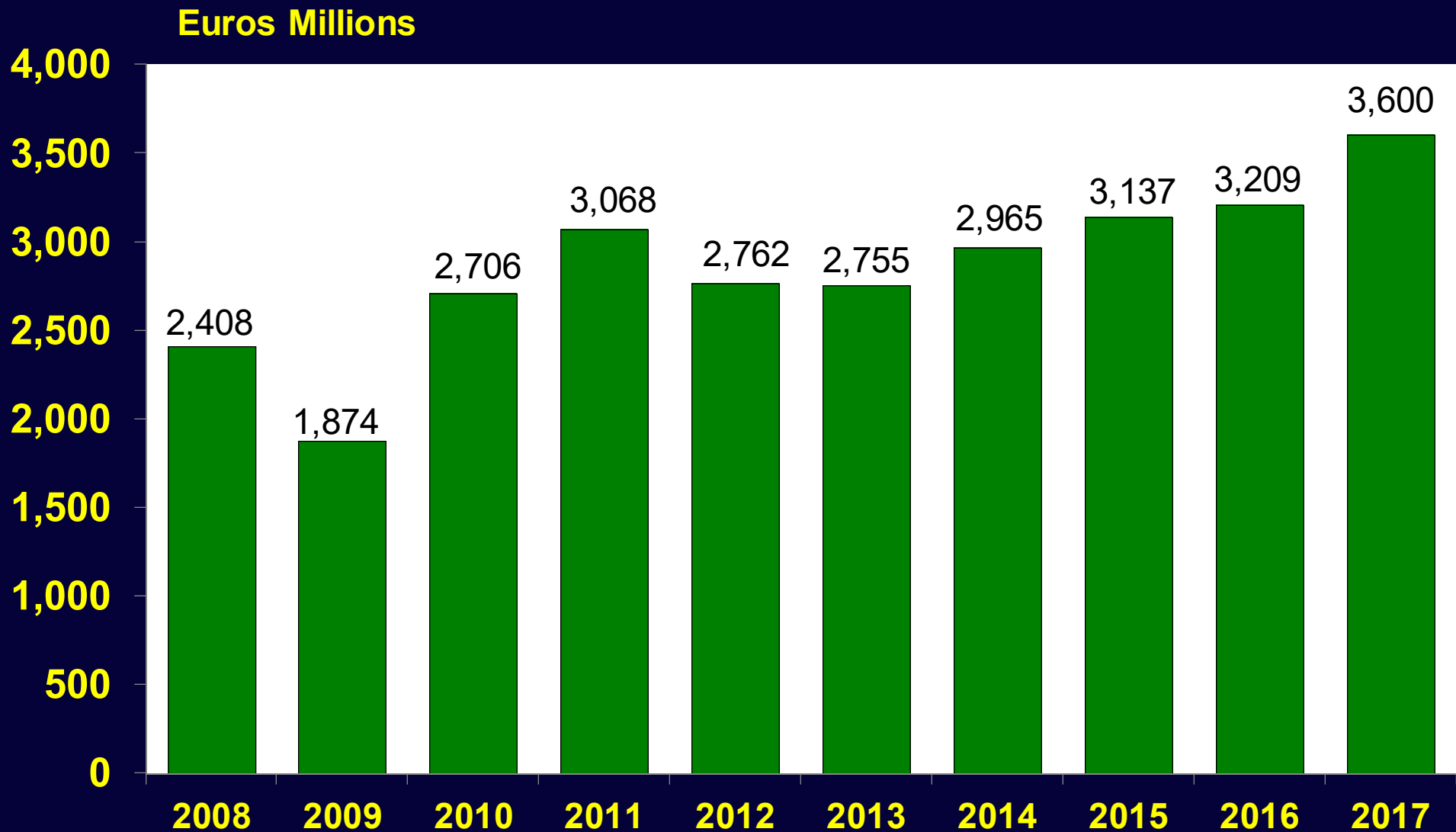
U.S. Economy & Electronics Industry

	Latest Month	Annualized Growth Rate	3-Month Growth Rate
Electronic Component \$			
Rigid & Flex PCB Orders (N Amer)	1/18	10.4	25.3
Rigid & Flex PCB Shipments (N Amer)	1/18	-0.8	5.7
Electronic Component Orders	1/18	7.4	10.2
Electronic Component Shipments	1/18	6.4	8.7
Semiconductor Shipments to N America	1/18	36.7	40.6
U.S. Electronic Equipment Orders \$			
Computer & Related	1/18	-0.1	-5.3
Communication	1/18	4.3	4.7
Medical, Measurement & Control	1/18	6.1	12.1
Search & Navigation	1/18	2.5	2.4
Defense Capital Goods	1/18	4.1	-5.4
Military Electronics	1/18	-0.4	1.8
Total Electronic Equipment	1/18	4.2	6.7
U.S. Industrial Production	1/18	2.3	3.6

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

Also called 3/12 growth

Electronic Components Market Germany (FBDi e.V.) in Million Euro



Electronic Components Market Germany

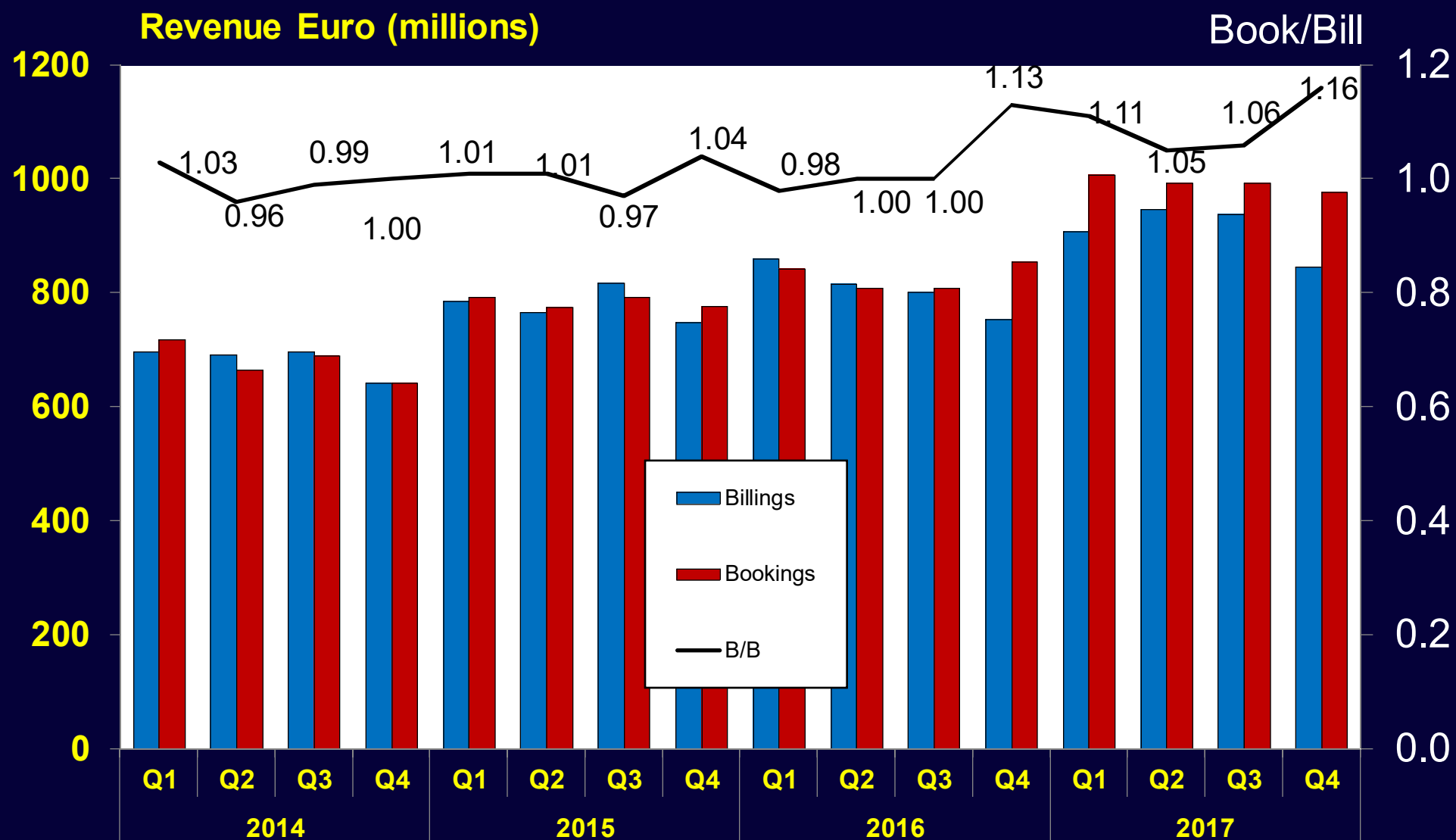
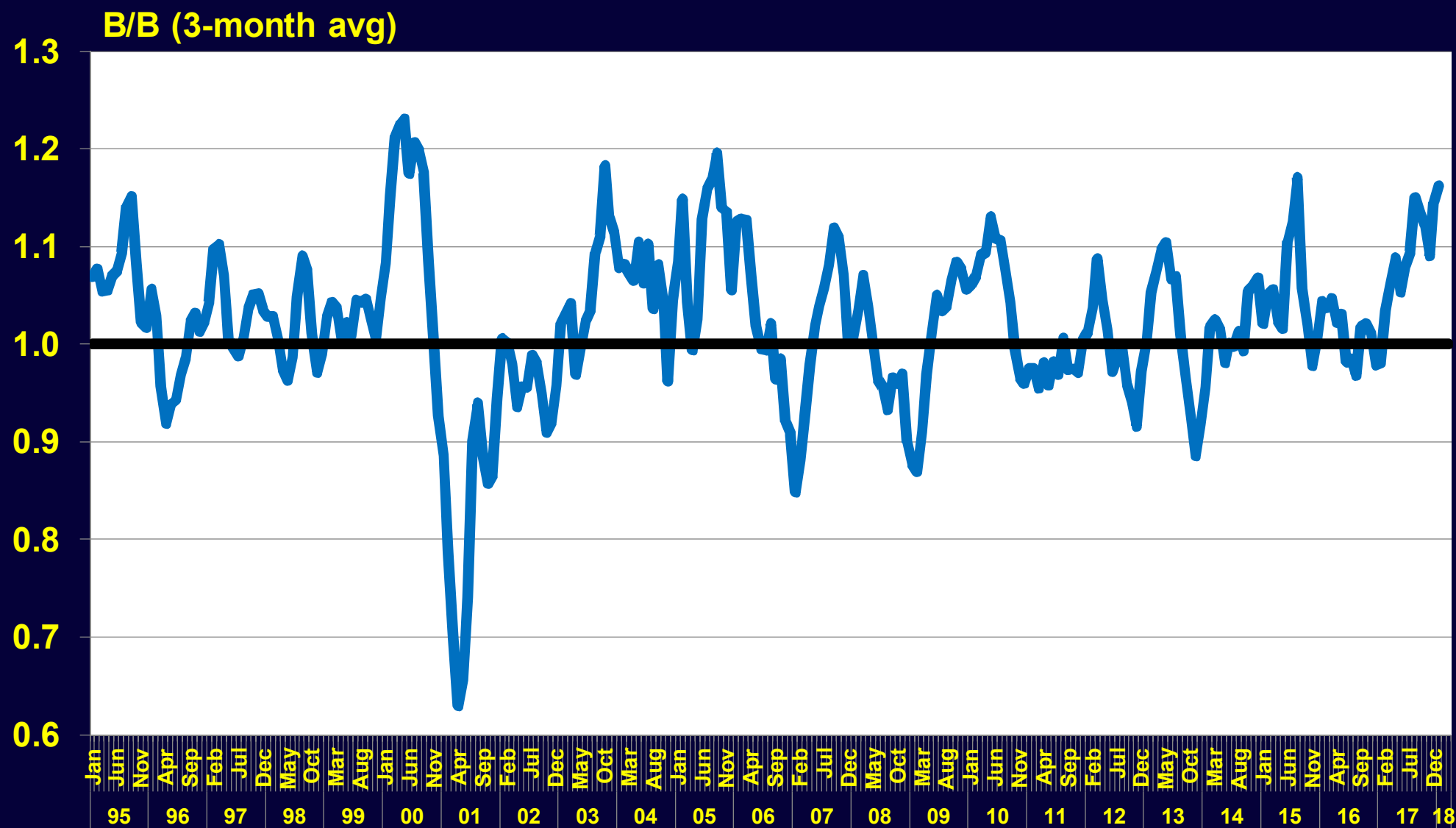


Chart 23

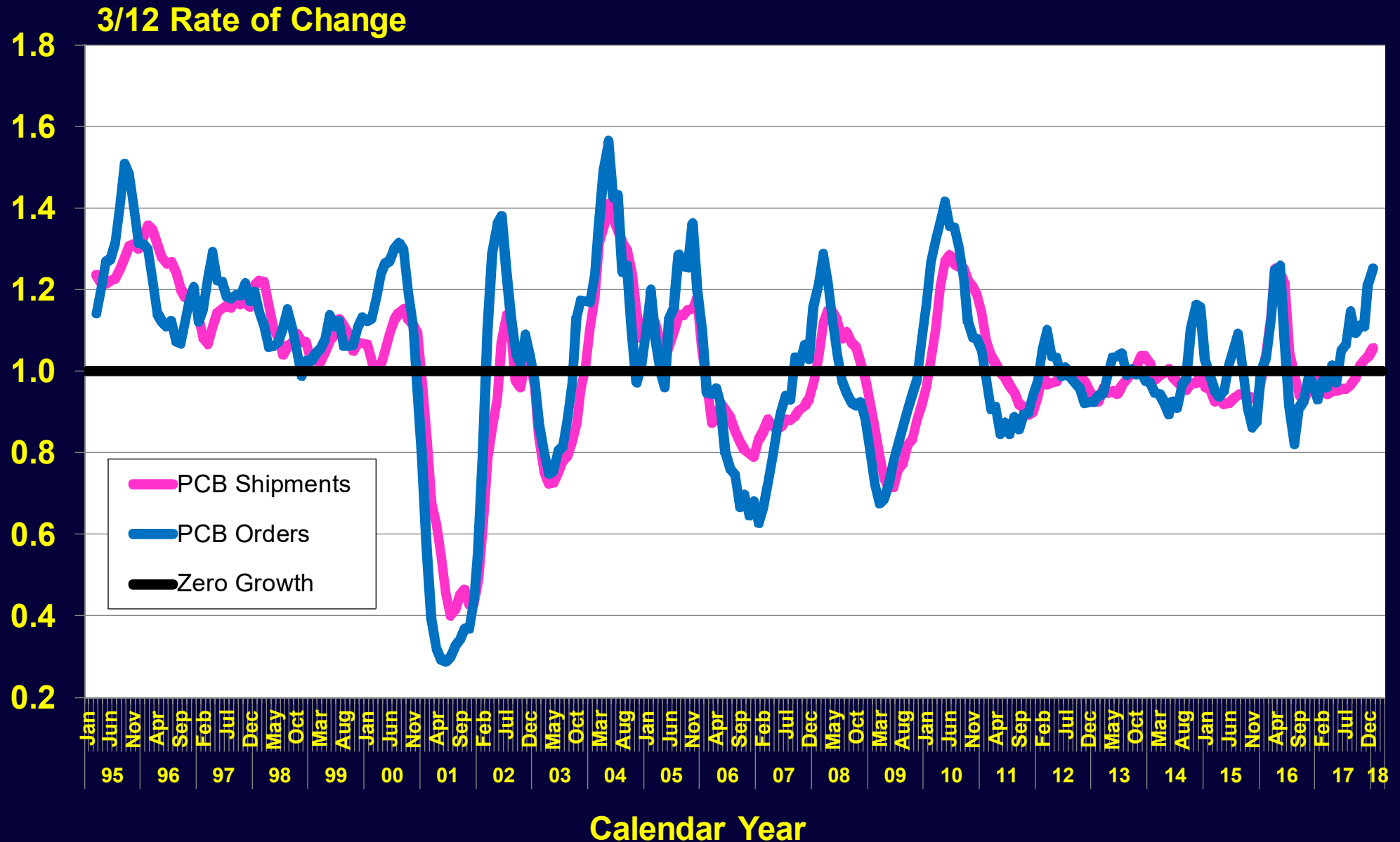
Rigid & Flexible PCB Book/Bill N. America



IPC

N. America Rigid & Flexible PCB Orders & Shipments

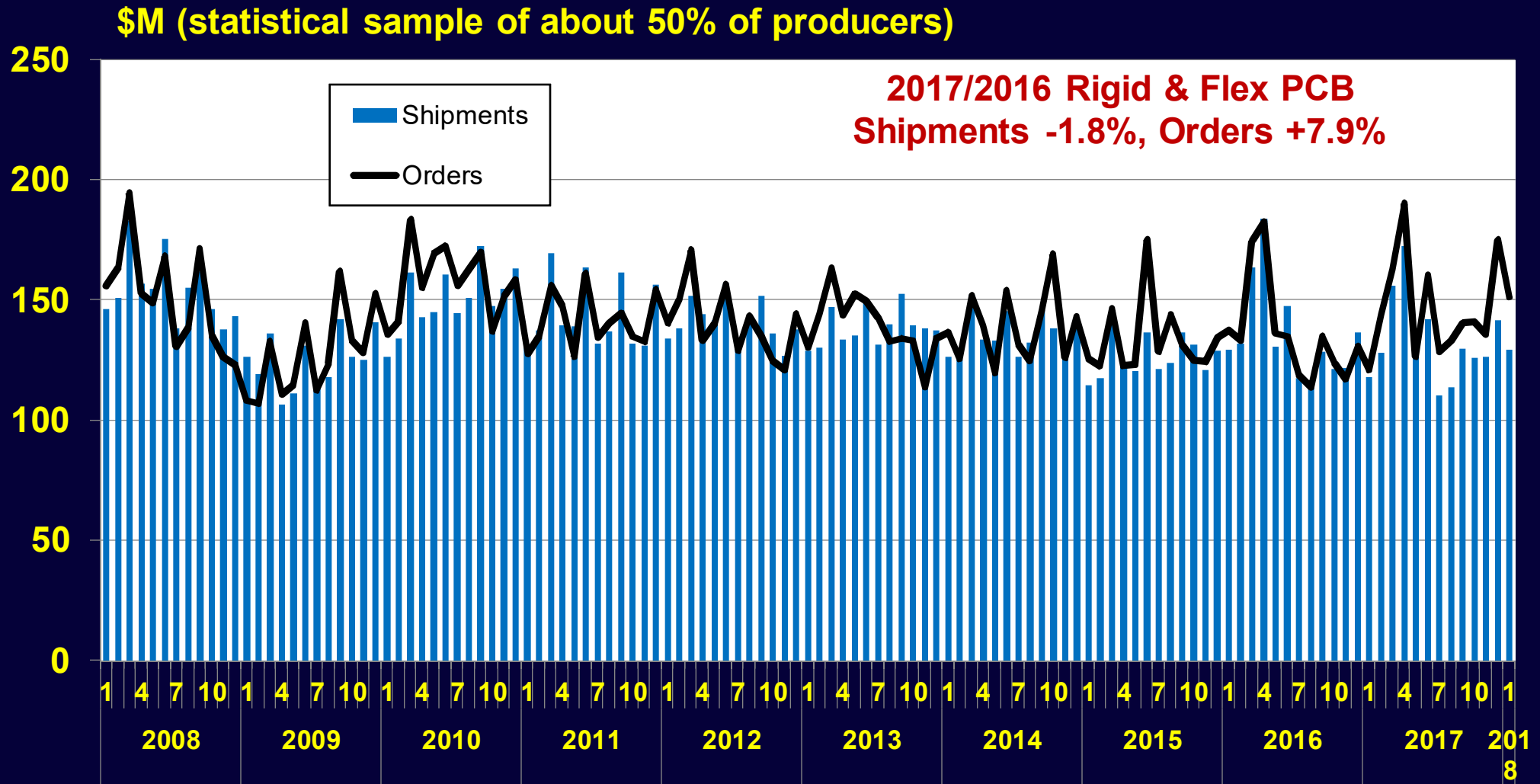
Chart 24



Data: IPC T/MRC & <http://www.census.gov/indicator/www/m3/>

Chart 25

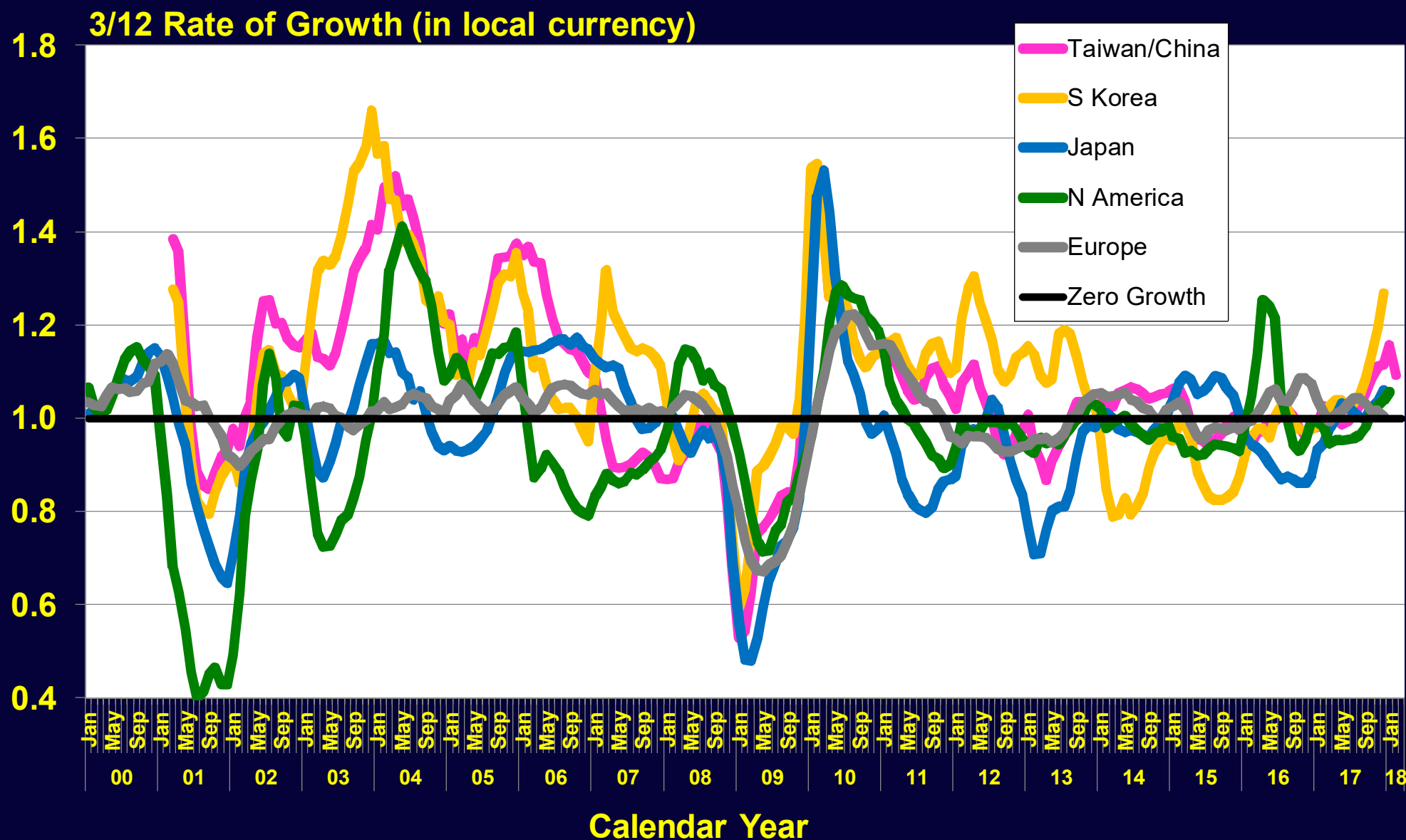
N American Rigid & Flexible PCB Shipments & Orders



Note: IPC survey captures "market" not domestic production. About 15% of the above represents imported boards resold by N American PCB producers in survey.

Chart 26

Regional PCB Shipment Growth

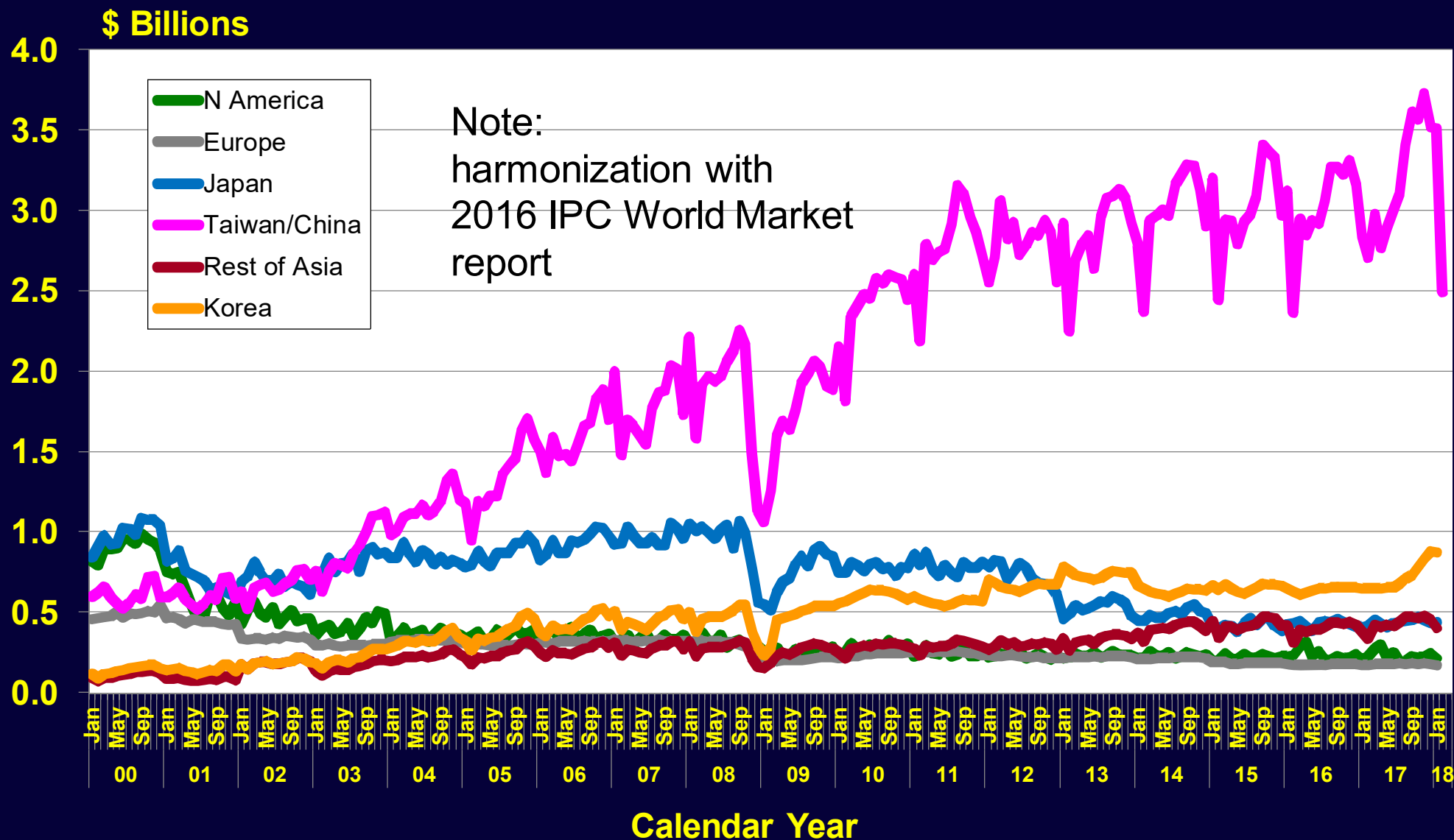


Sources: IPC, JPCA, Taiwan/China composite; Eurostat "wiring devices" for Europe

Chart 27

World PCB Monthly Shipments

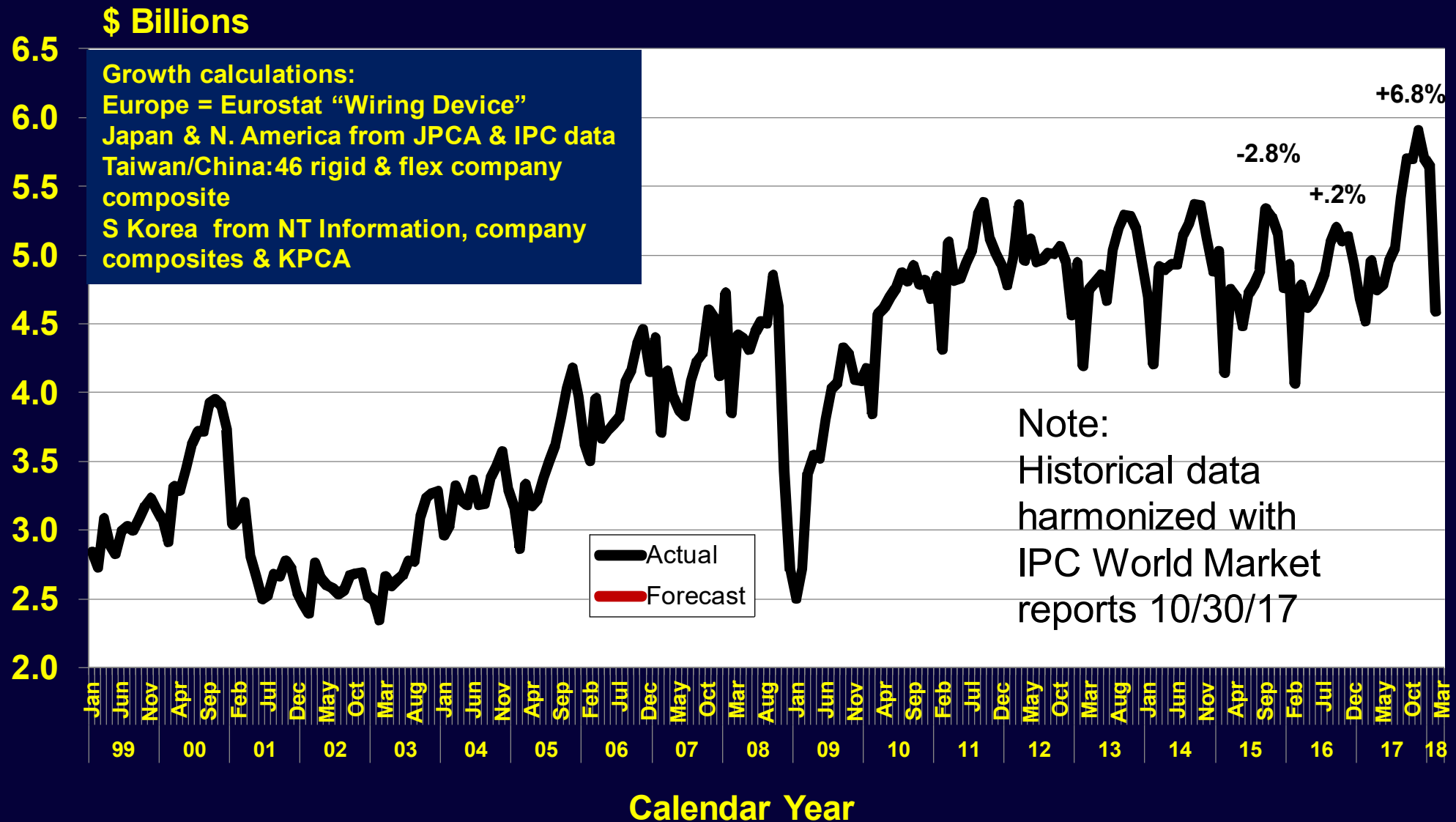
Converted @ Fluctuating Exchange Rates



Source: Custer Consulting Group

Chart 28 **World PCB Shipments (with forecast)**

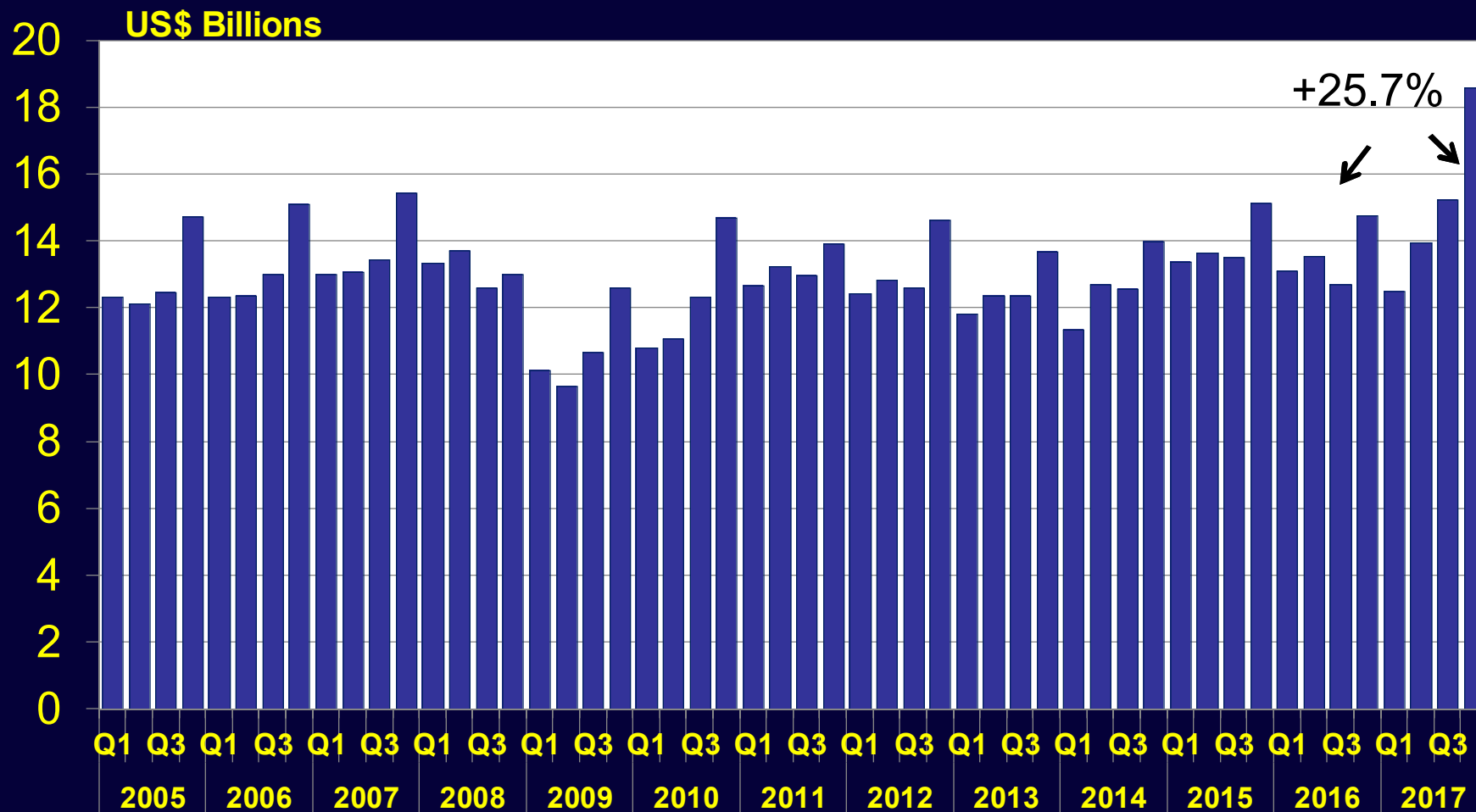
Converted @ Fluctuating Exchange Rates



Source: Custer Consulting Group - 2010 base year expanded by monthly growth of N. American, European, Japanese, Korean & Taiwan/China monthly PCB shipments

World Server Shipment Revenue

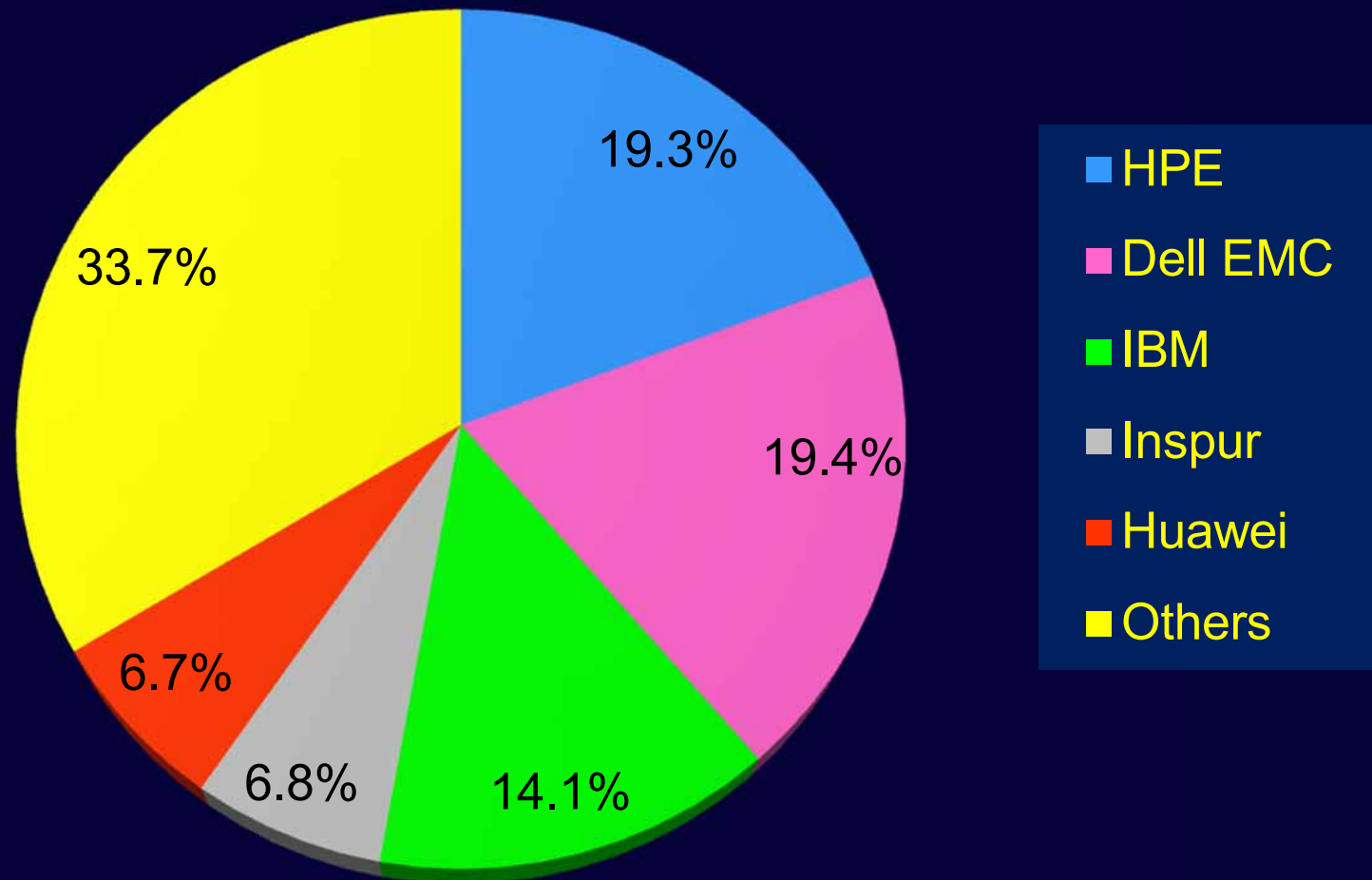
Chart 29



Gartner 3/18 & prior reports

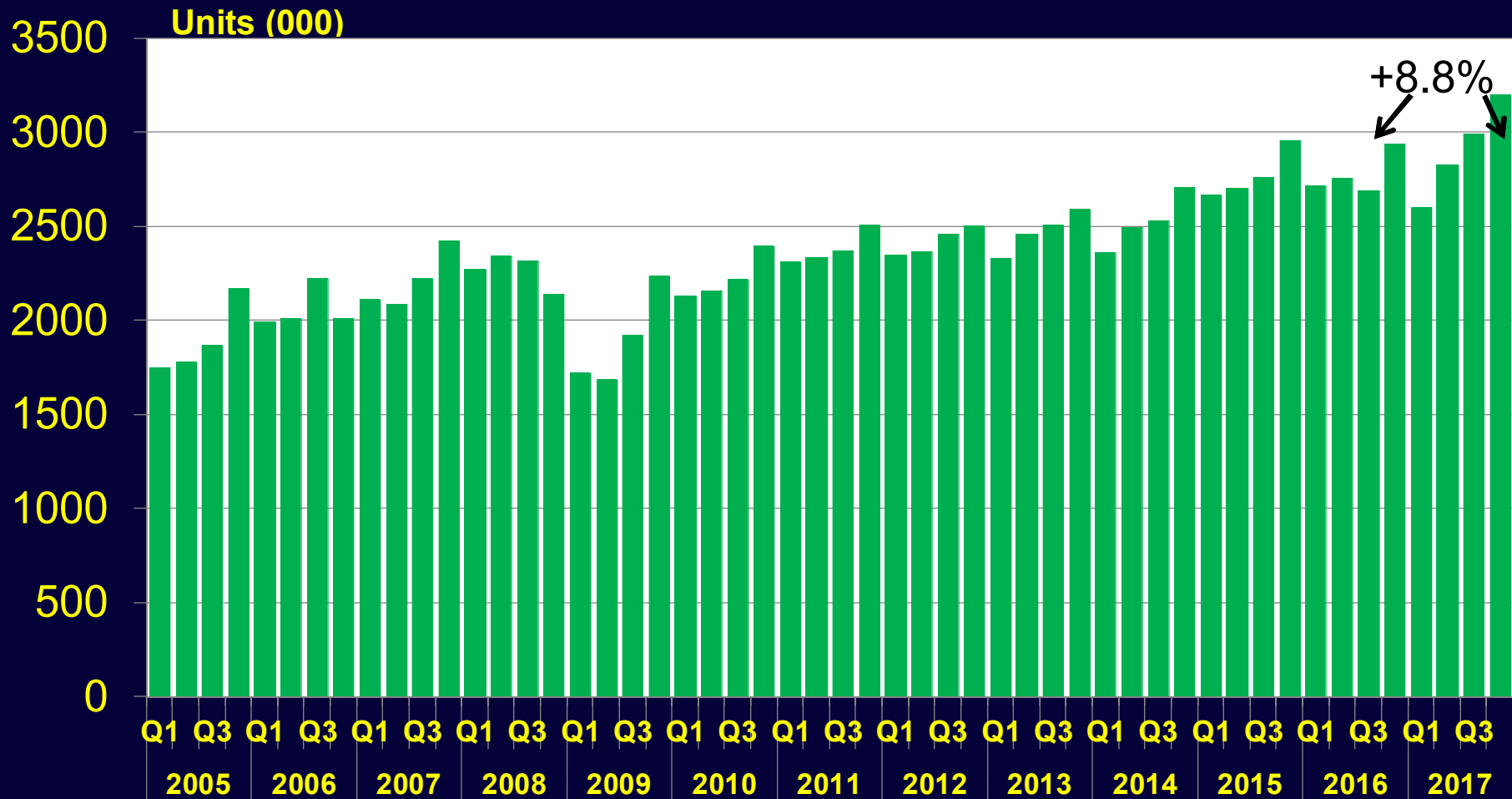
World Server Shipments 4Q'17

Chart 30



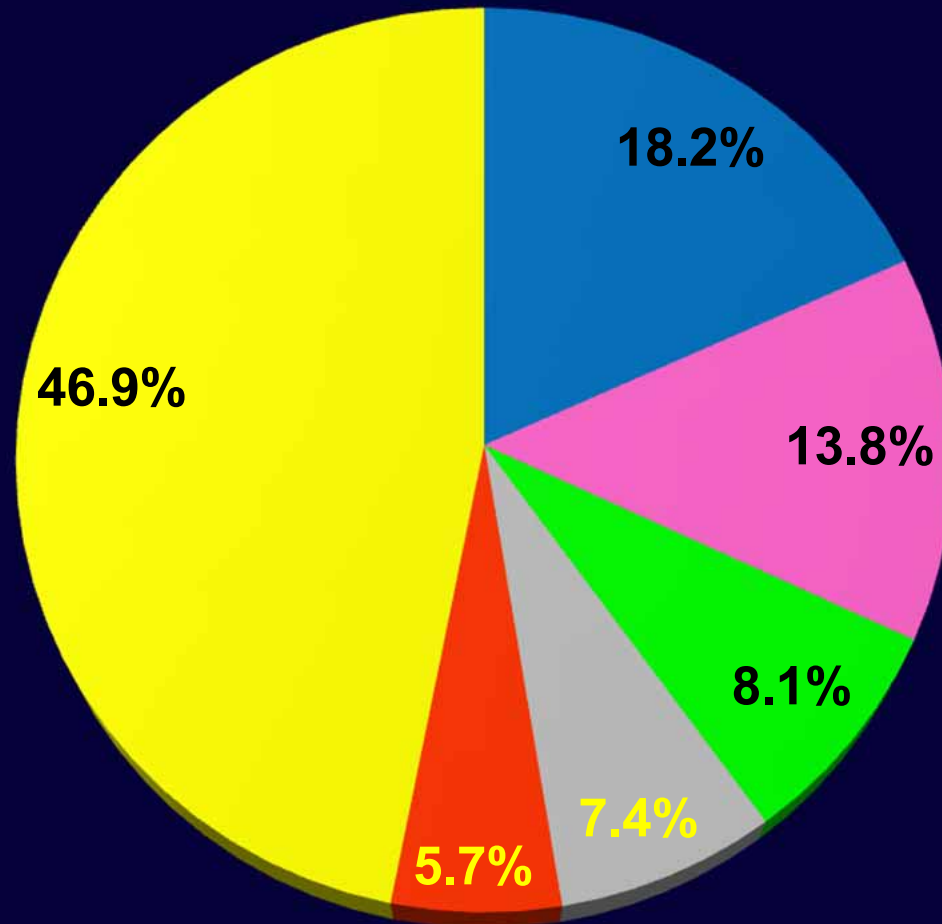
TOTAL: \$18.6 Billion

World Server Shipment Units



World Server Shipments 4Q'17

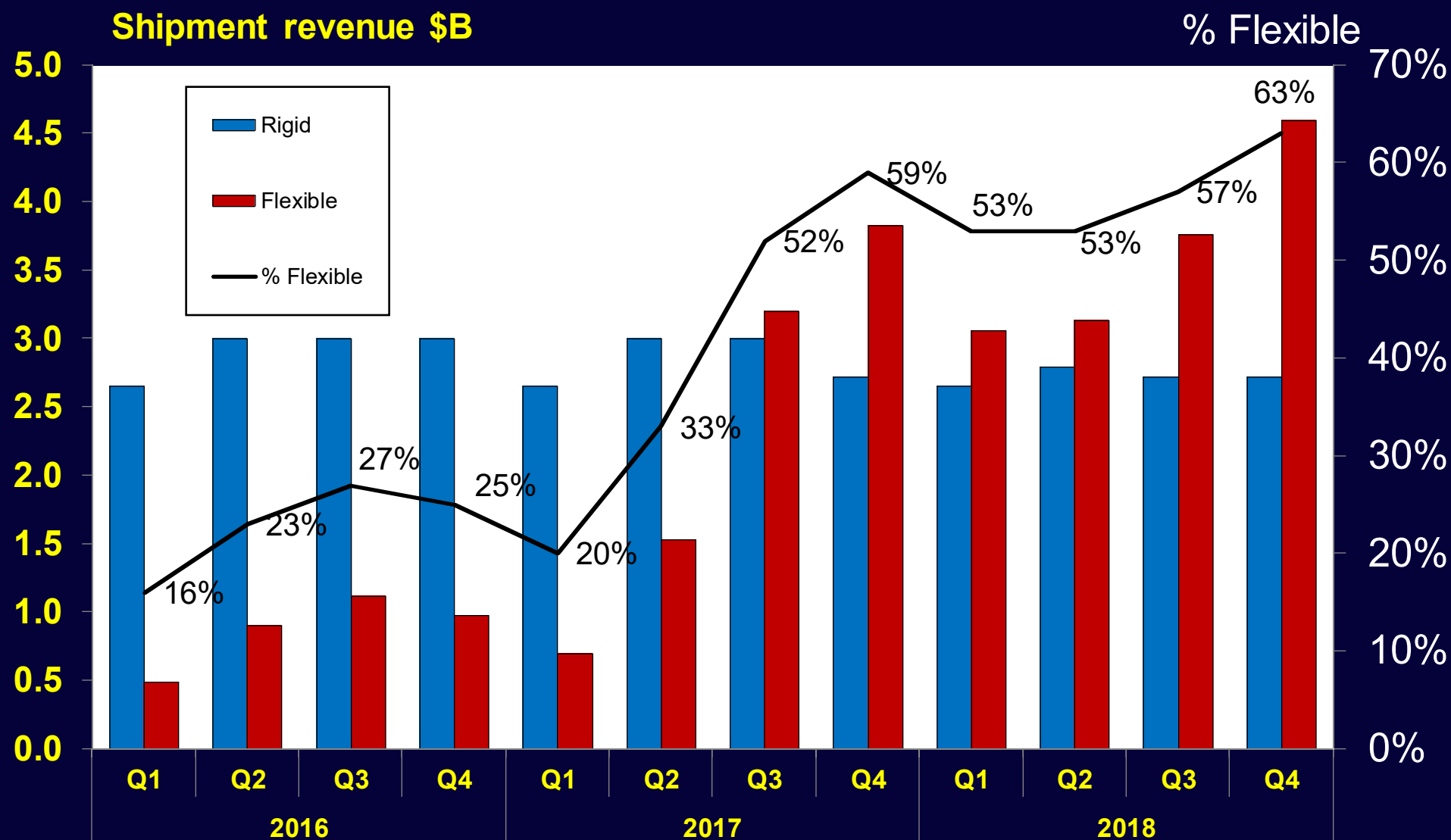
Chart 32



TOTAL: 3.197 Million Units

Chart 33

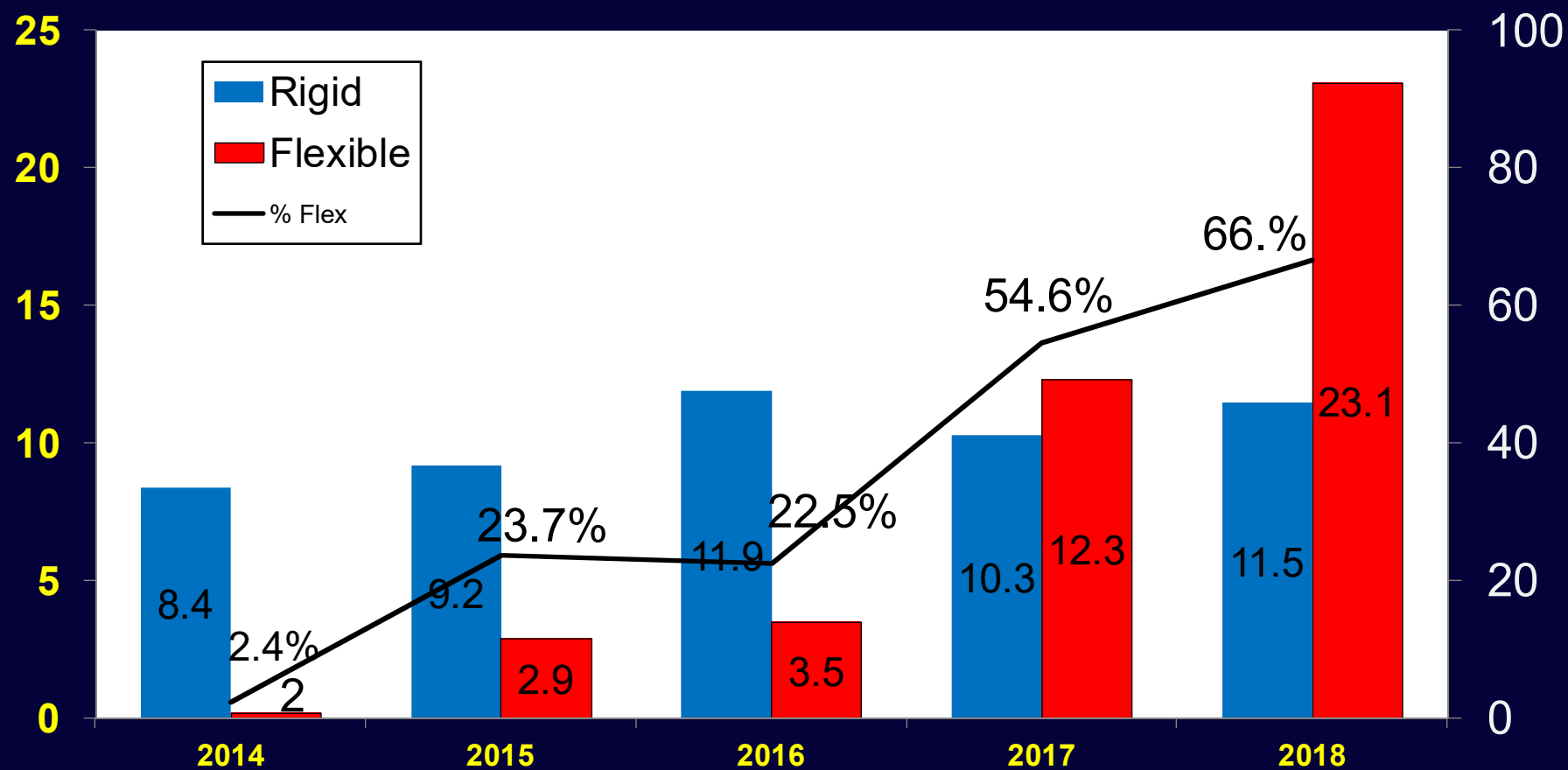
AMOLED Shipment Revenue Forecast



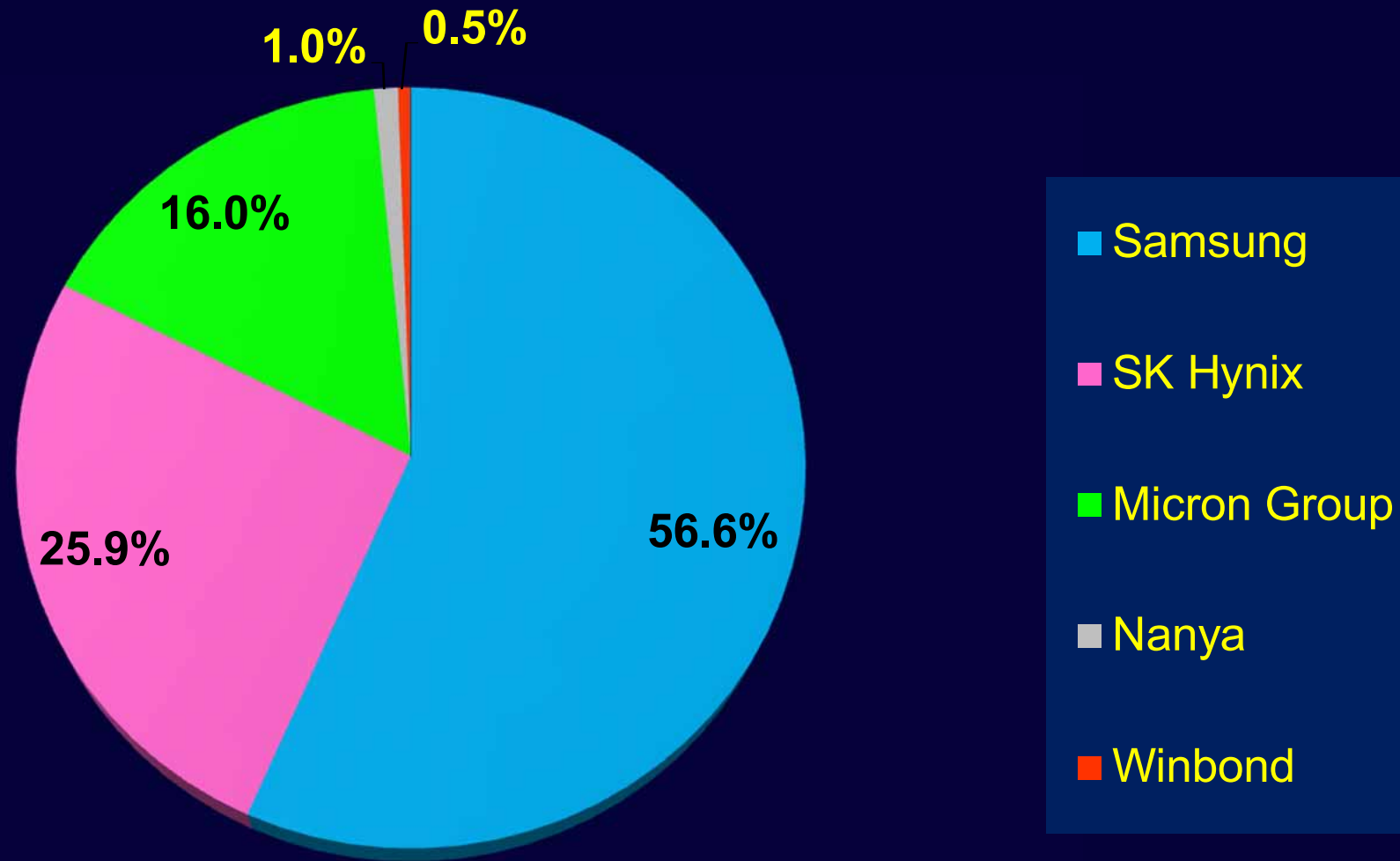
AMOLED Panel Shipment Revenue Forecast

Revenue \$B

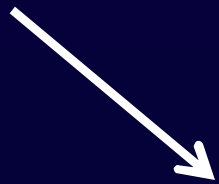
% Flexible



Mobile DRAM Revenues 4Q'17



\$6.48 B
3Q'17

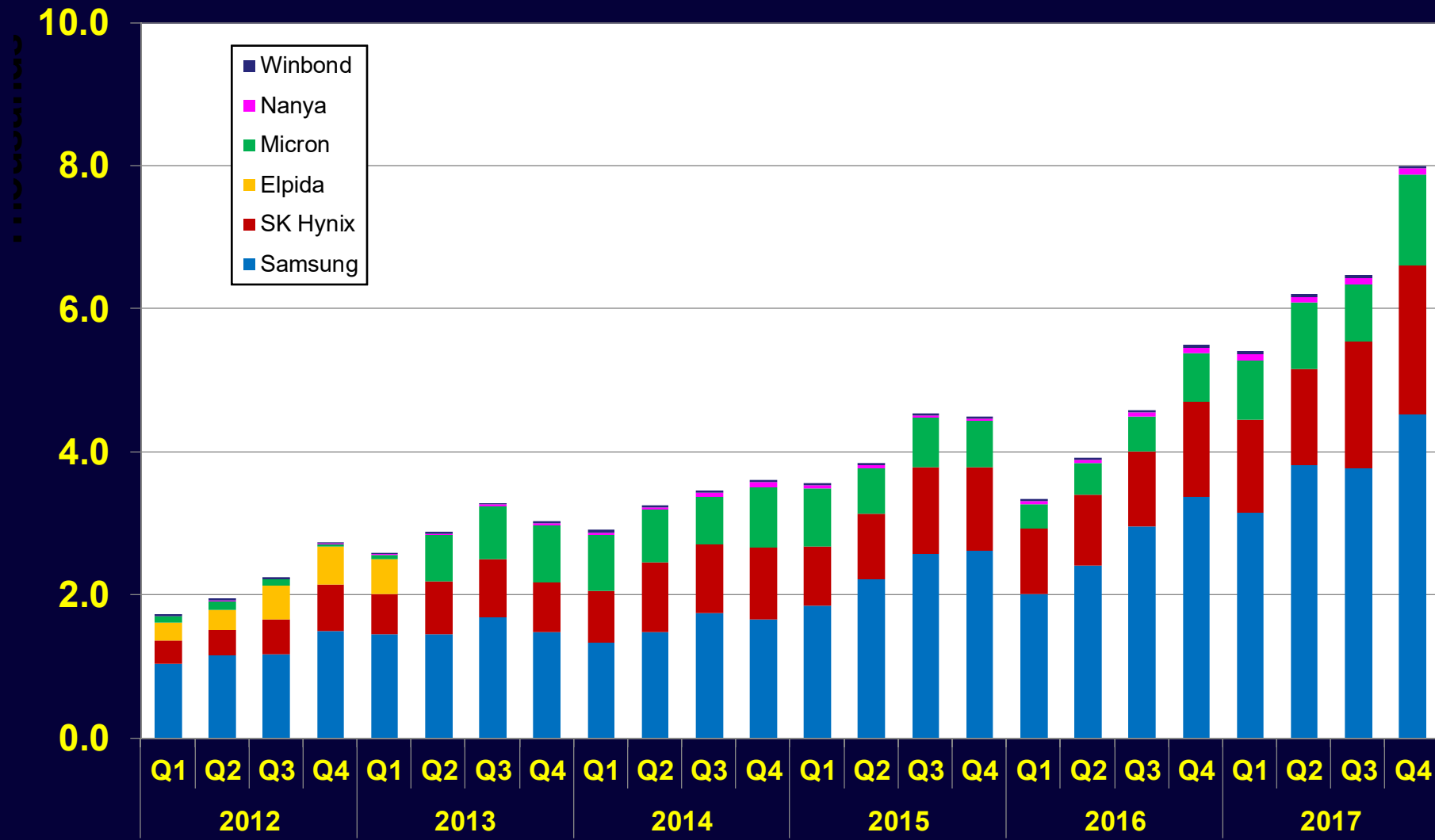


4Q'17 Total: US\$8.01 Billion

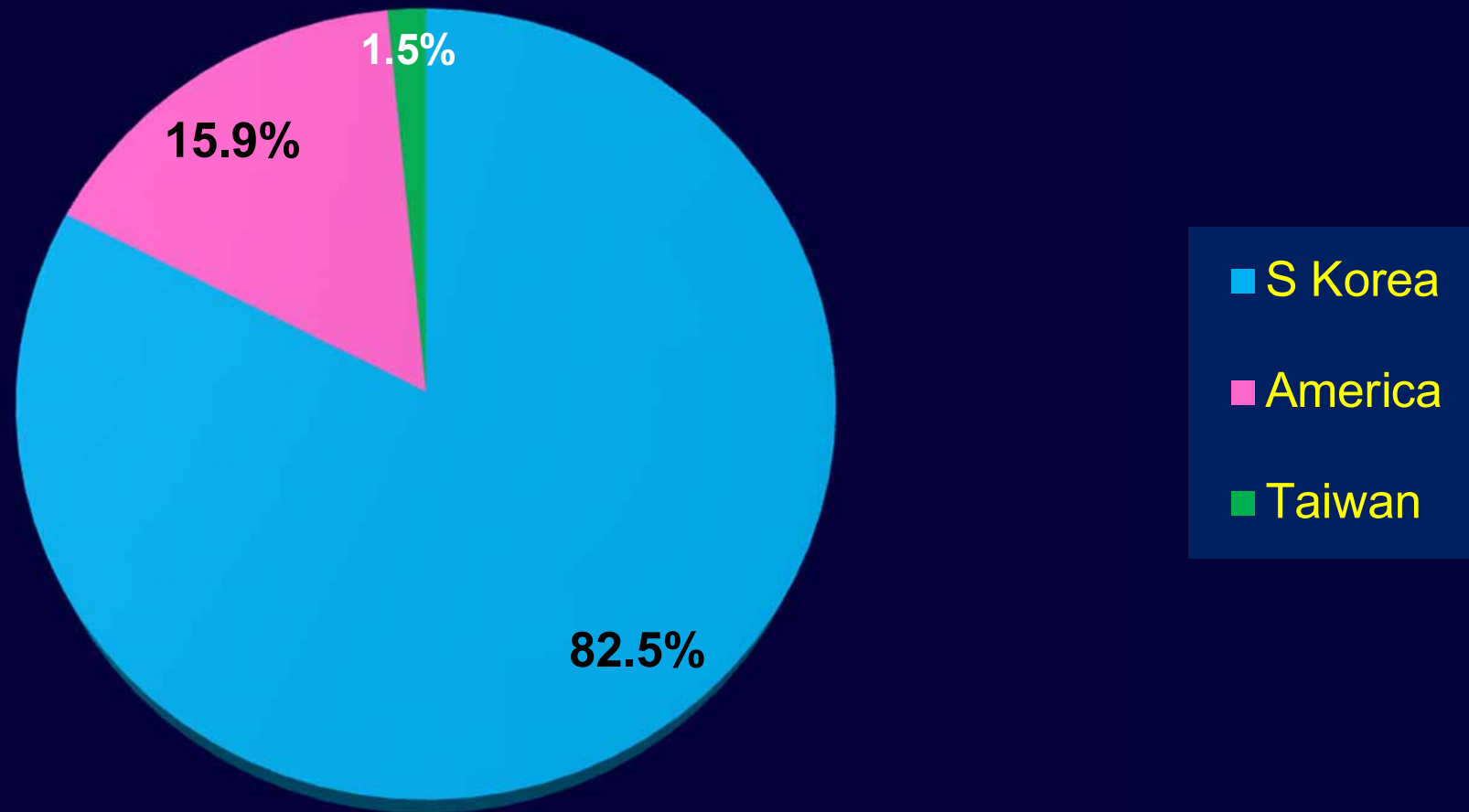
Chart 36

Mobile DRAM Revenue

US\$ (Billions)



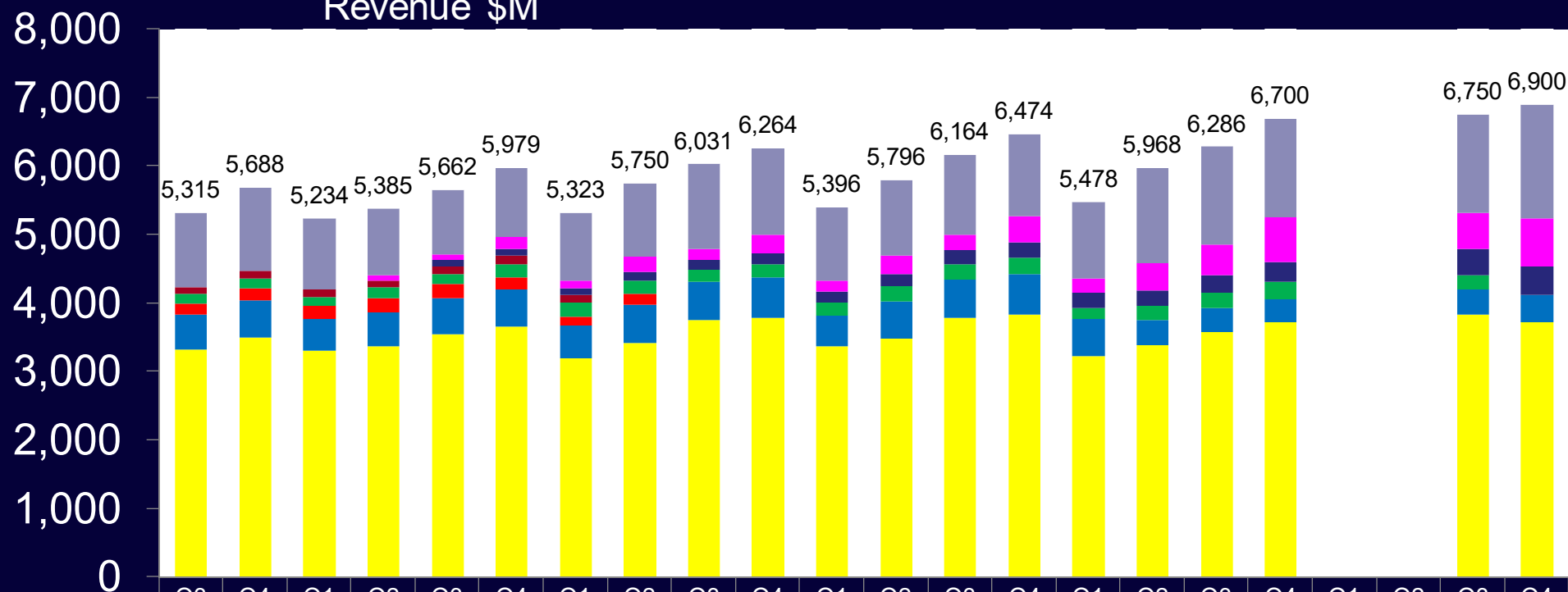
Mobile DRAM Market Share by Region 4Q'17



Ethernet Switch (Layer 2/3) Revenues by Vendor

Chart 38

Revenue \$M



	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	2012		2013				2014				2015				2016				2017			
■ Total	5315	5688	5234	5385	5662	5979	5323	5750	6031	6264	5396	5796	6164	6474	5478	5968	6286	6700			6750	6900
■ Others	1081	1210	1024	983	954	1015	993	1072	1231	1260	1073	1101	1156	1198	1117	1385	1426	1440			1438	1656
■ Huawei				73	79	172	108	223	173	283	159	271	237	394	212	390	453	661			520	711
■ Arista					87	99	101	122	140	159	160	174	193	217	212	236	254	289			378	407
■ Dell	97	122	124	96	111	121	113															
■ Juniper	143	144	130	161	151	201	200	203	165	185	187	216	231	244	174	207	222	251			216	
■ Alcatel-Lucent	167	173	185	199	204	163	137	147														
■ HP Enterprise	498	533	460	508	532	552	481	569	559	587	450	553	555	593	532	360	345	337			371	407
■ Cisco	3329	3507	3310	3365	3544	3655	3191	3415	3762	3791	3366	3481	3792	3828	3231	3390	3586	3722			3827	3719

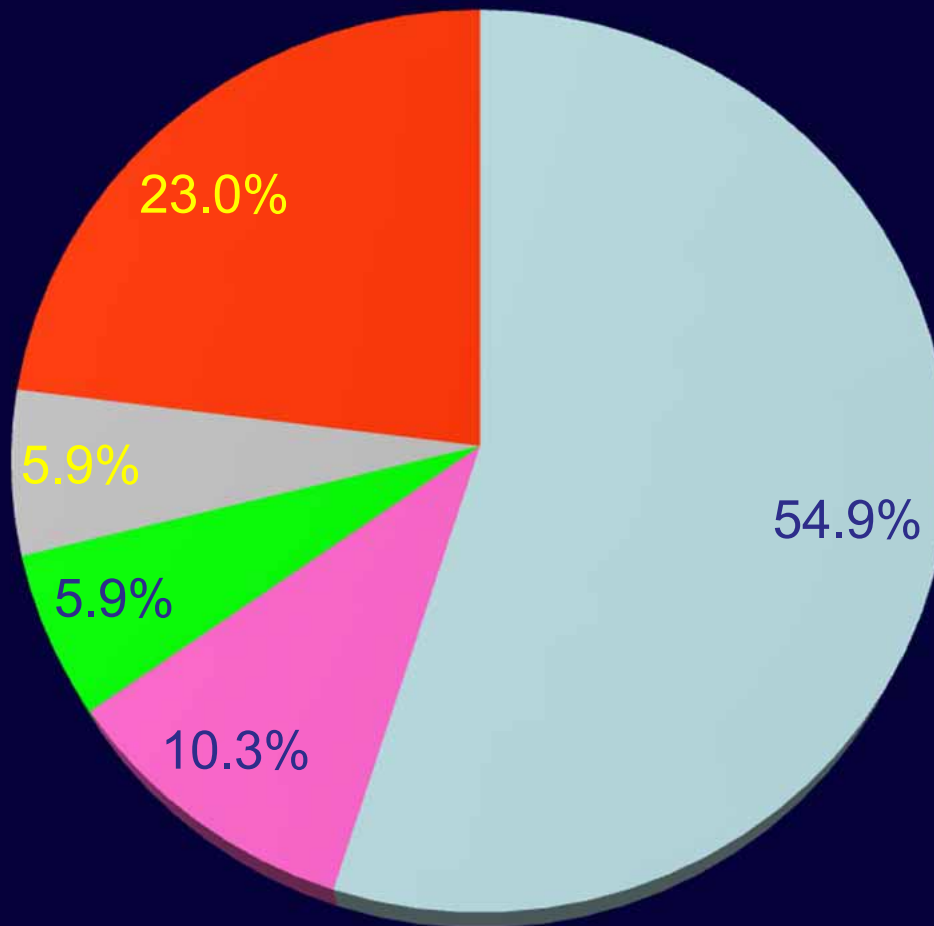
IDC 3/18 & prior

Layer 2/3 Ethernet Switch Vendors

4Q'17

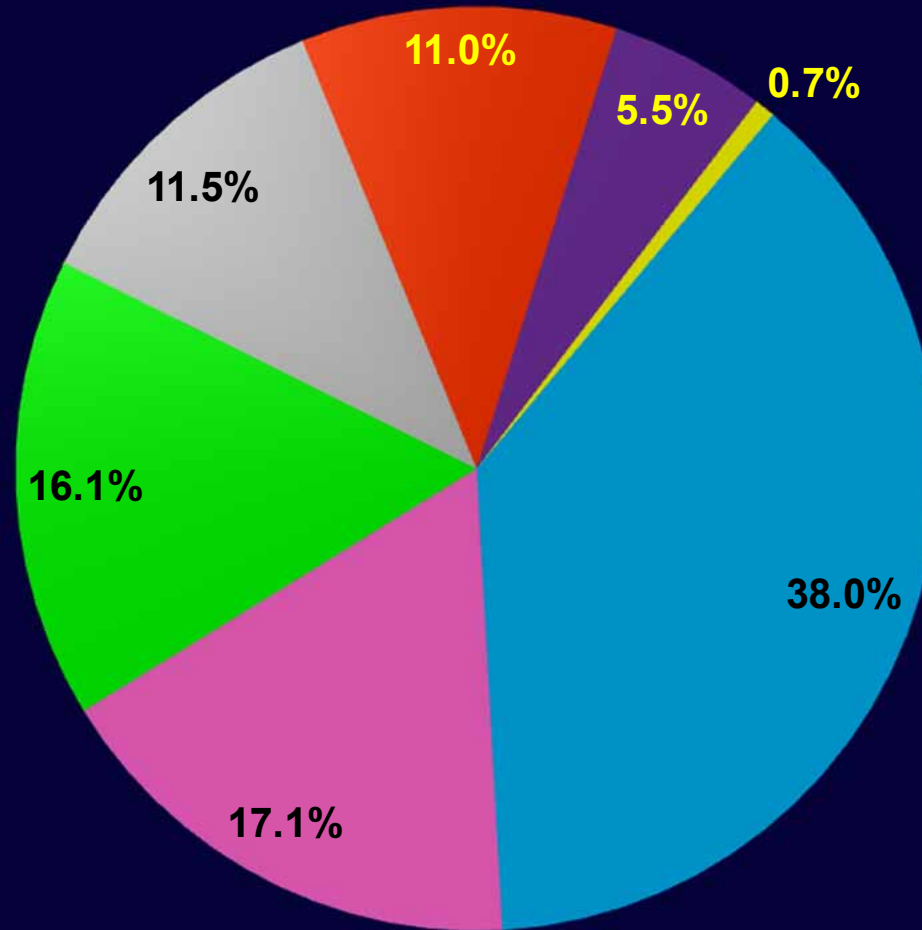
Chart 39

\$



4Q'17 World Total US\$ 6.9 Billion

NAND Flash Market 4Q'17



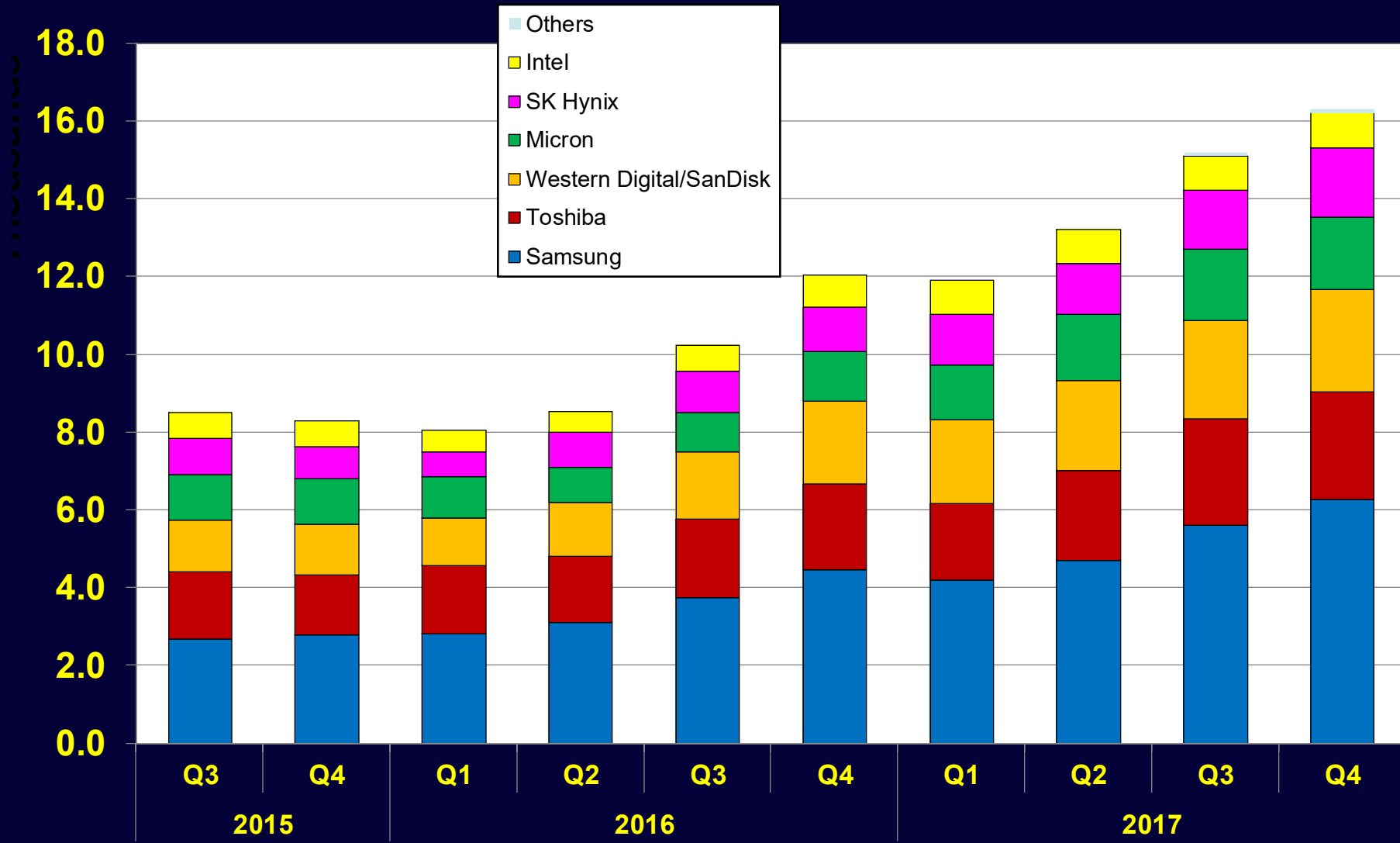
- Samsung
- Toshiba
- Western Digital
- Micron
- SK Hynix
- Intel
- Others

4Q'17 Total 16,235 US\$ (million)

Chart 41

Branded NAND Flash Suppliers

US\$ (Billions)



TrendForce 3/18 & earlier reports