

**MAINLAND CHINA'S SEMICONDUCTOR AND EQUIPMENT MARKETS:
ANALYSIS AND MANUFACTURING TRENDS**

Table of Contents

Chapter 1	Introduction	1-1
1.1	Introduction	1-1
Chapter 2	Semiconductor Industry	2-1
2.1	Introduction	2-1
2.2	China's Domestic Semiconductor Market	2-9
2.3	China's Semiconductor Infrastructure	2-9
2.4	Government Goals	2-11
2.5	Semiconductor Manufacturers In China	2-16
2.5.1	Wuxi China Resources Huajing Microelectronics	2-22
2.5.2	CSMC Technologies	2-24
2.5.3	Shanghai Huahong Grace Semiconductor (HHGRACE)	2-25
2.5.4	Hangzhou Youwang Electronics	2-26
2.5.5	Huayue Microelectronics	2-27
2.5.6	Semiconductor Manufacturing Int'l (SMIC)	2-28
2.5.7	Advanced Semiconductor Manufacturing (ASMC)	2-30
2.5.8	Fairchild Semiconductor Suzhou	2-32
2.5.9	Shanghai Belling	2-32
2.5.10	SK Hynix	2-34
2.5.11	Toshiba Semiconductor (Wuxi)	2-35
2.5.12	HeJian Technology	2-36
2.5.13	TSMC	2-37
2.5.14	Ningbo BYD Semiconductor	2-37
2.5.15	SIM-BCD	2-38
2.5.16	Intel	2-39
2.5.17	Samsung	2-39

2.5.18	Datung NXP Semiconductors	2-40
2.5.19	UMC	2-41
2.5.20	XMC	2-42
2.5.21	Shanghai Huali Microelectronics Corporation	2-42
2.5.22	YMTC	2-43
2.5.23	CXMT	2-43
2.5.24	Hua Hong	2-43
2.5.25	Thatic	2-44
2.5.26	Zhaoxin	2-44
2.5.27	Semiconductor Manufacturing Electronics (Shaoxing)	2-45
2.6	Back-End Manufacturing	2-46
2.7	Printed Circuit Board (PCB) Manufacturing	2-58
2.8	IC Design	2-49
2.9	Electronics Components	2-63
2.10	Role Of Foreign Companies	2-64
2.11	IC Industry Assessment	2-69
Appx A	China Design Companies	2-71
Appx B	China IC Manufacturers	2-78
Appx C	China Packaging and Testing Companies	2-80
Chapter 3	Market Analysis	3-1
3.1	Economic Recovery In Asia	3-1
3.2	Semiconductor Market	3-3
3.2.1	IC Industry Status	3-3
3.2.2	China IC Fab Capacity	3-13
3.2.3	Global Memory Market	3-22
3.2.4	Chinese Memory Market	3-28
3.2.5	China's Leading Foundry	3-32
3.2.5.1	SMIC	3-32
3.2.5.2	Hua Hong	3-45
3.3	China Semiconductor Equipment Market	3-49
3.3.1	Overall Market	3-49

3.3.2	China Equipment Market by Segment	3-58
3.3.2	Chinese Equipment Supplier Profiles	3-62
3.3.3.1	AMEC	3-62
3.3.3.2	ACM Research	3-64
3.3.3.3	AccoTest	3-66
3.3.3.4	Naura	3-68
3.3.3.5	Anji Microelectronics	3-69
3.3.3.6	PNC	3-71
3.3.3.7	Kingsemi	3-72
3.3.3.8	Changchuan	3-72
3.3.3.9	SMEE	3-73
3.3.3.10	Hwatsing	3-74
3.3.3.11	Piotech	3-74
3.3.3.14	Raintree Scientific Instruments	3-75
Chapter 4	High-Tech Sectors	4-1
4.1	Introduction	4-1
4.2	Telecommunications	4-5
4.3	Optoelectronics	4-6
4.4	Software	4-7
4.5	Consumer Electronics	4-11
4.6	Chemicals/Materials	4-14
4.7	Environmental Industry	4-17
4.8	Display	4-20
4.8.1	TFT-LCD Technology	4-20
4.8.2	OLED Technology	4-22
Chapter 5	High Technology Industry Development Zones	5-1
5.1	Introduction	5-1
5.2	Torch Program	5-8
5.3	High Technology Industry Development Zones	5-17

5.3.1	Anhui Province	5-17
o	Hefei High And New Technology Industry Development Zone	5-17
5.3.2	Beijing	5-19
o	Beijing Experimental Zone For The Development Of New Technology Industries	5-19
o	Changping Park Of Bez	5-21
o	Fengtai Park Of Bez	5-21
5.3.3	Fujian Province	5-22
o	Fuzhou Science And Technology Park	5-22
o	Xiamen Torch High Technology Industry Development Zone	5-23
5.3.4	Gansu Province	5-25
o	Lanzhou High And New Technology Industry Development Zone	5-25
5.3.5	Guangdong Province	5-26
o	Foshan High And New Technology Industry Development Zone	5-26
o	Guangzhou Tianhe High And New Technology Industry Development Zone	5-27
o	Huizhou Zhongkai New Technology Industry Development Zone	5-29
o	Shenzhen Science And Technology Industrial Park	5-29
o	Zhongshan High & New Technology Innovation Service Center	5-30
o	Zhuhai High And New Technology Industry Development Zone	5-31
5.3.6	Guangxi Zhuang Autonomous Region	5-33
o	Guilin High And New Technology Industry Development Zone	5-33
o	Nanning New Technology Industry Development Zone	5-34
5.3.7	Guizhou Province	5-35
o	Guiyang Xintian New Technology Industry Development Zone	5-35
5.3.8	Hainan Province	5-36
o	Hainan International Industrial Park	5-36

5.3.9	Hebei Province	5-36
o	Baoding New Technology Industry Development Zone	5-36
o	Shijiazhuang High And New Technology Industry Development Zone	5-37
5.3.10	Heilongjiang Province	5-38
o	Daqing High And New Technology Industry Development Zone	5-38
o	Harbin High And New Technology Industry Development Zone	5-39
5.3.11	Henan Province	5-40
o	Luoyang High And New Technology Industry Development Zone	5-40
o	Zhengzhou High And New Technology Industry Development Zone	5-41
5.3.12	Hubei Province	5-42
o	Wuhan Donghu New Technology Development Zone	5-42
o	Xiangfan High And New Technology Industry Development Zone	5-42
5.3.13	Hunan Province	5-43
o	Changsha High And New Technology Industry Development Zone	5-43
o	Zhuzhou High And New Technology Industry Development Zone	5-44
5.3.14	Inner Mongolia Autonomous Region	5-45
o	Baotou Rare Earth High And New Technology Industry Development Zone	5-45
5.3.15	Jiangsu Province	5-46
o	Changzhou High And New Technology Industry Development Zone	5-46
o	Nanjing High And New Technology Industry Development Zone	5-47
o	Suzhou High And New Technology Industry Development Zone	5-49
o	Wuxi High And New Technology Industry Development Zone	5-51
5.3.16	Jiangxi Province	5-52

o	Nanchang High And New Technology Industry Development Zone	5-52
5.3.17	Jilin Province	5-53
o	Changchun High And New Technology Industry Development Zone	5-53
o	Jilin High And New Technology Industry Development Zone	5-54
5.3.18	Liaoning Province	5-54
o	Anshan High And New Technology Industry Development Zone	5-54
o	Dalian High And New Technology Industrial Park	5-55
o	Shenyang New-High-Tech Industrial Development Zone	5-57
5.3.19	Shaanxi Province	5-58
o	Baoji High And New Technology Industry Development Zone	5-58
o	Xi'an New Technology Industry Development Zone	5-59
5.3.20	Shandong Province	5-61
o	Ji'nan High And New Technology Industry Development Zone	5-61
o	Qingdao High-Tech Industrial Park	5-62
o	Weifang High And New Technology Industry Development Zone	5-63
o	Zibo High And New Technology Industry Development Zone	5-65
5.3.21	Shanghai	5-66
o	Incubator Center Of High-Technology Of China Textile International	5-66
o	Shanghai High And New Technology Industry Development Zone	5-67
o	Shanghai Zhangjiang Hi-Tech Park	5-68
5.3.22	Shanxi Province	5-69
o	Taoyuan High And New Technology Industry Development Zone	5-69
5.3.23	Sichuan Province	5-70
o	Chengdu High And New Technology Industry Development Zone	5-70

o	Chongqing High And New Technology Industry Development Zone	5-71
o	Mianyang High And New Technology Industry Development Zone	5-72
5.3.24	Tianjin	5-74
o	Tianjin New Technology Industrial Park	5-74
5.3.25	Xinjiang Uygur Autonomous Region	5-75
o	Urumqi High And New Technology Industry Development Zone	5-75
5.3.26	Yunnan Province	5-76
o	Kunming High And New Technology Industry Development Zone	5-76
5.3.27	Zhejiang Province	5-78
o	Hangzhou High And New Technology Industry Development Zone	5-78
5.4	Free Trade Zones	5-78
Chapter 6	Economic Statistics And Analysis	6-1
6.1	Economic Climate	6-1
6.2	GDP	6-2
6.3	Employment Sector	6-4
6.4	Inflation	6-5
6.5	Retail Sales	6-6
6.6	Foreign Trade	6-7
6.7	Consumer Spending	6-8
6.8	Investments	6-9
6.9	Economic Statistics	6-10
List of Figures		
2.1	Fab Construction By China Region	2-21
2.2	Number of Design Houses in China	2-60
3.1	China's GDP	3-2

3.2	China's Internal IC Production	3-7
3.3	China's IC Demand	3-9
3.4	China's Internal IC Production/Total Demand	3-10
3.5	IC Imports to China	3-11
3.6	China's IC Supply/Demand	3-12
3.7	China's IC Fab Capacity	3-14
3.8	IC Fab Capacity by Region	3-15
3.9	China's IC Fab Capacity by Wafer Size	3-17
3.10	China's 12" Fab Capacity By Company	3-18
3.11	China's IC Fab Capacity by Geometry	3-19
3.12	China's IC Production by Application	3-20
3.13	NAND Market By Region	3-26
3.14	DRAM Market By Region	3-27
3.15	TSMC Revenue By Process	3-40
3.16	TSMC and SMIC Revenues by Process Node	3-43
3.17	Semiconductor Equipment Forecast	3-51
3.18	Top Semiconductor Equipment Spenders	3-53
3.19	Semiconductor Equipment Revenue By Region By Quarter	3-55
3.20	Semiconductor Equipment Revenues To China By Quarter	3-56
3.21	Semiconductor Equipment Purchases By CXMT and YMTC	3-57
4.1	China's Consumer Electronics Exports	4-13
4.2	Materials Forecast By Region	4-15
5.1	Map Of Regions Of China	5-3
6.1	China's GDP Growth	6-3
List of Tables		
2.1	Chinese IC Fab Construction	2-18
2.2	Chinese Foundry Construction	2-19
2.3	Chinese Fab Capacity	2-20
2.4	China IC Packaging And Testing Firms: Wholly-Owned Int'l Firms	2-48
2.5	China IC Packaging And Testing Firms: Joint Ventures	2-50

2.6	China IC Packaging And Testing Firms: Wholly-Owned Taiwan Firms	2-51
2.7	China IC Packaging And Testing Firms: Locally-Owned Firms	2-52
2.8	China fabless IC design firms	2-62
2.9	Main Pure-Play Foundry Revenues	2-70
3.1	China's IC Market	3-8
3.2	Bit Growth Change For DRAMs By Manufacturer	3-23
3.3	Bit Growth Change For NAND By Manufacturer	3-24
3.4	DRAM Roadmap By Manufacturer	3-29
3.5	3D NAND Roadmap By Manufacturer	3-31
3.6	Top Semiconductor Foundries	3-34
3.7	SMIC Fabs	3-36
3.8	SMIC Major Customers	3-37
3.9	SMIC Revenues By Process Vs TSMC	3-39
3.10	Initial Volume Production Comparison Between TSMC and SMIC	3-42
3.11	Chip Costs Per Node	3-44
3.12	Hua Hong Fabs	3-46
4.1	China's Import Electronic ICs And Microassemblies	4-2
4.2	China's Leading Export/Import Partners For High-Tech Products	4-3
4.3	China's Export Electronic Products	4-4
4.4	Main Software Parks In China	4-10
4.5	TFT-LCD Plants In China	4-21
4.6	OLED Plants In China	4-23
5.1	National High Technology Industry Development Zones	5-2
2.1	Chinese IC Fab Construction	2-18
2.2	Chinese Foundry Construction	2-19
2.3	Chinese Fab Capacity	2-20
2.4	China IC Packaging And Testing Firms: Wholly-Owned Int'l Firms	2-48
2.5	China IC Packaging And Testing Firms: Joint Ventures	2-50
2.6	China IC Packaging And Testing Firms: Wholly-Owned Taiwan Firms	2-51

