

**ASIA'S MICROELECTRONICS MARKET: CHINA, HONG KONG, INDIA, INDONESIA, JAPAN,  
KOREA, MALAYSIA, SINGAPORE, AND TAIWAN**

**Table of Contents**

<b>Chapter 1</b>	<b>Introduction</b>	<b>1-1</b>
1.1	Asian Economic Trends	1-2
<b>Chapter 2</b>	<b>People's Republic of China</b>	<b>2-1</b>
2.1	Macroeconomic Assessment	2-2
2.2	Policy Developments	2-4
2.3	Outlook	2-5
2.4	Microelectronics Industry	2-7
2.4.1	Introduction	2-7
2.4.2	Electronics Industry	2-9
2.5	IC Industry	2-13
2.5.1	Driving Forces	2-13
2.5.2	Fab Capabilities	2-19
2.5.3	Foundries	2-26
2.5.4	IC Assembly Operations	2-30
2.5.5	IC Design	2-31
<b>Chapter 3</b>	<b>Hong Kong, China</b>	<b>3-1</b>
3.1	Macroeconomic Assessment	3-2
3.2	Policy Developments	3-3
3.3	Outlook	3-5
3.4	Information Technology Equipment Industry	3-7
3.4.1	Introduction	3-7
3.4.2	Sales Channels	3-11
3.4.3	Industry Trends	3-11
3.4.4	Trade Measures Affecting Exports of Electronics	3-11

3.4.5	China's WTO Accession	3-12
3.4.6	Product Trends	3-13
3.5	Electronic Components	3-13
3.5.1	Introduction	3-13
3.5.2	Sales Channels	3-17
3.5.3	Industry Trends	3-18
3.5.4	Factors Affecting Exports of Electronics	3-18
3.5.5	Product Trends	3-19
3.6	Telecommunications Equipment Industry	3-19
3.6.1	Introduction	3-19
3.6.2	Sales Channels	3-25
3.6.3	Industry Trends	3-25
3.6.4	Factors Affecting Exports of Telecom Equipment	3-26
3.6.5	Product Trends	3-27
<b>Chapter 4</b>	<b>India</b>	<b>4-1</b>
4.1	Macroeconomic Assessment	4-2
4.2	Policy Developments	4-4
4.3	Outlook	4-6
4.4	Microelectronics Industry	4-7
4.4.1	Introduction	4-7
4.4.2	Semiconductor Production	4-7
4.4.3	Industry Performance	4-10
4.5	Electronic Production	4-14
4.6	India Venture Capital	4-18
4.7	Special Investment Programs	4-19
4.7.1	Introduction	4-19
4.7.2	Electronics Hardware Technology Park Scheme (EHTP)	4-20
4.7.3	Software Technology Park (STP) Scheme	4-21
4.7.4	Software Technology Parks of India	4-21
4.7.5	Export Processing Zones/ 100% Export Oriented Units Scheme	4-22
4.7.6	Process Of Approval	4-24
4.7.7	Government Approval	4-25

<b>Chapter 5</b>	<b>Indonesia</b>	<b>5-1</b>
5.1	Macroeconomic Assessment	5-2
5.2	Policy Developments	5-4
5.3	Decentralization in Indonesia	5-5
5.4	Outlook	5-5
5.5	Indonesia Information Technology Infrastructure	5-7
5.5.1	Introduction	5-7
5.5.2	Electronics	5-8
5.6	Investor Nightmare	5-9
<b>Chapter 6</b>	<b>Japan</b>	<b>6-1</b>
6.1	Macroeconomic Assessment	6-2
6.2	IT Industry	6-3
6.2.1	Mobile Market	6-3
6.2.2	Internet Use	6-5
6.2.3	Consumer Electronics Industry	6-6
6.3	Japanese IC Industry	6-8
6.3.1	Battered Industry	6-8
6.3.2	Foundry Plans	6-12
6.3.3	Withdrawal from DRAM	6-12
6.3.4	Trend in Partnerships	6-16
6.3.5	Lower Cost Structure – Minifabs	6-17
<b>Chapter 7</b>	<b>Republic of Korea</b>	<b>7-1</b>
7.1	Macroeconomic Assessment	7-2
7.2	Policy Developments	7-3
7.3	Outlook	7-5
7.4	IT Industry	7-7
7.4.1	Introduction	7-7
7.4.2	Telecom	7-8
7.4.3	Internet	7-9
7.5	Semiconductor Industry	7-12

7.5.1	Introduction	7-12
7.5.2	DRAM Industry	7-14
7.5.3	Flash Memory Industry	7-15
7.5.4	Semiconductor Facilities	7-16
7.5.5	Semiconductor Supply Industry	7-18
7.6	Packaging Industry	7-20
<b>Chapter 8</b>	<b>Malaysia</b>	<b>8-1</b>
8.1	Macroeconomic Assessment	8-2
8.2	Policy Developments	8-4
8.3	Outlook	8-4
8.4	Technology Infrastructure	8-6
8.4.1	Introduction	8-6
8.4.2	Malaysia's ICT Industry	8-10
8.4.3	Display Devices	8-15
8.4.4	Electronics Telecommunications Equipment	8-15
8.4.5	Electronics Contract Manufacturing	8-16
8.5	Semiconductor Infrastructure	8-16
8.5.1	Semiconductor Industry	8-16
8.5.2	Semiconductor Manufacturers	8-21
<b>Chapter 9</b>	<b>Singapore</b>	<b>9-1</b>
9.1	Macroeconomic Assessment	9-2
9.2	Policy Developments	9-4
9.3	Outlook	9-5
9.4	Electronics Infrastructure	9-7
9.4.1	Introduction	9-7
9.4.2	EDB Industry Clusters – Electronics	9-17
9.5	Semiconductor Industry	9-21
9.5.1	Introduction	9-21
9.5.2	Semiconductor Fabs	9-21
9.5.3	Semiconductor Equipment & Materials Industry	9-28
9.5.4	Research and Development	9-29

<b>Chapter 10</b>	<b>Taiwan</b>	<b>10-1</b>
10.1	Macroeconomic Assessment	10-2
10.2	Policy Developments	10-4
10.3	Outlook	10-5
10.4	Semiconductor Industry	10-6
10.4.1	Introduction	10-6
10.4.2	Semiconductor Equipment and Materials	10-17
10.4.3	IC Packaging & Testing	10-20
10.4.4	Semiconductor Fabs	10-24
10.5	Taiwan's IT industry	10-37
<b>List of Figures</b>		
2.1	GDP Growth - China	2-3
2.2	China IC Demand Versus Supply 1995-2018	2-14
2.3	China's Memory Demand	2-16
2.4	China's IC Applications	2-17
2.5	Silicon Wafer Technology Levels In China	2-21
2.6	China Silicon Wafer Output Forecast	2-22
2.7	Growth Of China's IC Design Houses	2-32
2.8	China's Design Capabilities By Linewidth	2-34
2.9	China Design Houses By Location	2-36
3.1	Contributions To Growth (Supply) – Hong Kong	3-4
4.1	GDP Annual Growth	4-3
4.2	Electronics Production Profile	4-15
5.1	GDP Growth - Indonesia	5-3
5.2	Foreign Investment To Indonesia	5-11
6.1	Semiconductor Sales by World Region	6-11
6.2	Operating Income Of Japanese IC Companies	6-13
6.3	HALCA Project Objectives	6-19
6.4	Fab Tool Overcapacity	6-22
6.5	Comparison Of Electric Consumption	6-23
7.1	GDP Growth - Korea	7-4

7.2	South Korea Internet Speed	7-10
7.3	Number Of Internet Users	7-11
8.1	GDP Growth - Malaysia	8-3
8.2	Malaysia's Industrial Production	8-8
8.3	Exports of Semiconductors and Electronic Equipment	8-19
8.4	X-Fab Roadmap	8-22
8.5	Siltera Malaysia Roadmap	8-23
9.1	Singapore GDP Growth	9-3
9.2	Capacity Of Major Foundries	9-23
9.3	SSMC's Technology Roadmap	9-27
10.1	Taiwan's Electronic Production	10-3
10.2	World Foundry Capacity Breakdown By Country	10-15
10.3	300mm Installed Capacity	10-16
10.4	Packaging Materials Forecast By Region	10-23
10.5	Market Share Of IC Foundries	10-25
10.6	Production Value Of Taiwan's Photonics Industry	10-41
10.8	Evolution Of Taiwan's Photonics Industry	10-43

### List of Tables

1.1	GDP Growth Developing Asia 2007-Present	1-4
2.1	Major Economic Indicators - China	2-6
2.2	China's Electronics Industry	2-12
2.3	China's IC Production	2-15
2.4	China's 8- And 12-Inch Fabs and Foundries	2-23
2.5	Worldwide Foundry Capacity	2-27
3.1	Major Economic Indicators - Hong Kong	3-6
3.2	Performance Of Hong Kong's Exports Of IT Equipment	3-8
3.3	Total IT Equipment Exports By Products	3-9
3.4	Total IT Equipment Exports By Major Markets	3-10
3.5	Performance Of Hong Kong's Exports Of Electronics	3-14
3.6	Total Electronics Components Exports By Major Markets	3-15
3.7	Total Electronics Components Exports By Products	3-16
3.8	Performance Of Hong Kong's Exports Of Telecommunications	
	Equipment	3-21

3.9	Total Telecommunications Exports By Categories	3-22
3.10	Total Telecommunications Exports By Major Markets	3-23
4.1	Major Economic Indicators - India	4-5
4.2	Market Share Of Semiconductor Applications	4-9
4.3	Electronics Production In India	4-13
5.1	Major Economic Indicators - Indonesia	5-6
6.1	Japan's Mobile Subscriber Market	6-4
6.2	Japanese IC Sales Leaders	6-10
6.3	DRAM Market Leaders	6-14
7.1	Major Economic Indicators	7-6
7.2	Competitiveness Of Semiconductor Equipment Industry By Country	7-20
8.1	Major Economic Indicators	8-5
8.2	Malaysia's IT Industry Billings	8-11
8.3	Malaysia's Statistics For PCs and Internet	8-14
8.4	Share Of Total Malaysia Semiconductor Sales	8-18
9.1	Major Economic Indicators Singapore	9-6
9.2	Economic Contribution By Electronics Industry	9-12
9.3	Domestic Exports Of Electronics	9-13
9.4	Electronics Trade Singapore	9-14
9.5	Share Of Output	9-16
10.1	Taiwan's Electronic Production	10-7
10.2	Major Indices for Taiwan IC Industry	10-8
10.3	Top 10 Fabless companies in Taiwan	10-10
10.4	Major Indices of Taiwan IC Fabrication Business	10-11
10.5	Top 10 Fabrication Companies in Taiwan	10-13
10.6	Top 10 Import/Export Regions of Taiwan IC Market	10-14
10.7	Equipment Forecast By Region	10-18
10.8	Semiconductor Materials Consumption by Region	10-19
10.9	Major Indices Of Taiwan Packaging And Testing Industry	10-21
10.10	Top 10 IC Packaging And Testing Companies	10-22
10.11	TSMC's Capacity And Utilization Rates	10-26
10.12	TSMC's Silicon Foundry Fabs	10-27
10.13	UMC'S Fabs	10-29
10.14	Powerchip Semiconductor's Fabs	10-32

10.15	Production Value Of Taiwan's ICT Industry	10-39
-------	-------------------------------------------	-------