

# **Yearbook of World Electronics Data 1994**

**Vol. 2: America, Japan & Asia Pacific**

**MARKET PROSPECTS TO 1996**



**ELSEVIER  
ADVANCED  
TECHNOLOGY**

# **YEARBOOK OF WORLD ELECTRONICS DATA 1994**

## **VOLUME 2 — AMERICA, JAPAN & ASIA PACIFIC**

**(Formerly the Mackintosh Yearbook of International Electronics Data)**

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## **PREFACE**

This volume of the Yearbook is the eleventh edition covering America, Japan and Asia Pacific, and is prepared as the world is slowly emerging from recession. Our analysis of the very latest available data gives us an unique insight into recent trends in the electronics industry and enables a realistic assessment of future prospects to be made.

Summaries have again been given in US dollars using constant exchange rates for all except one year of historical data to enable international comparison to be made. In spite of the widely fluctuating nature of the dollar, it is the international currency and appears to be the most useful for comparisons, however, any views from subscribers on alternative methods would be welcomed.

Research for the Yearbook now covers 48 countries with the results published in four volumes. By covering most of the industrialised world we are able to make country comparisons, thus aiding estimation in those areas where data is unavailable or verification of statistics is unreliable. As we mentioned in Volume 1, published in November 1993, 1992 was the last year that full trade figures for intra-EC trade were collected, in future this will be done on a sampling basis. Inevitably this will complicate and delay statistical analysis for all researchers, and an overall 'world look' becomes even more valuable. The full effects of these changes will be felt in 1994 when we compile our next edition of the West European volume. However, subscribers can be assured that we will continue to produce the Yearbook and make it as up-to-date and as comparable with past data as possible.

Later in 1994 the third edition of the 'Emerging Countries' volume will be published. Included in its coverage of ten countries will be China which is becoming increasingly important on the world electronics industry stage. Also included will be Greece and Portugal to complete the coverage of the EC countries.

Kenneth F. Wilson  
Research Consultant  
March 1994

## 1 INTRODUCTION

The Yearbook series presents a review of the world electronics industries and markets with detailed estimates and forecasts of the size of the production and markets for electronic equipment and components in each country.

The major 30 countries of the world are surveyed annually and this is supplemented by a biannual survey of ten 'emerging countries' and by a biannual survey of the East European countries.

The 30 major nations are:

Western Europe — Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, UK.

America, Japan & Asia Pacific — Australia, Brazil, Canada, Hong Kong, India, Indonesia, Israel, Japan, Malaysia, Philippines, Singapore, South Africa, South Korea, Taiwan, Thailand, USA.

This volume of the Yearbook covers the countries of America, Japan & Asia Pacific in detail.

### GENERAL YEARBOOK METHODOLOGY

The overall methodology employed in the compilation of the Yearbooks is to analyse trade and production statistics in each of the countries. The aim is to cover all electronic products, and electronic components used in those products, and these are grouped into ten major categories which are common across all countries. The degree of detail within each category varies for each country, depending upon the importance of the country and the availability of statistical sources.

Trade statistics are analysed in detail, over 350 separate categories being employed. Production statistics are collected from Government and Manufacturer's Association sources where these are available. Extensive use is also made of research reports, company reports, news items and work by other consultants to supplement and cross-check the official and semi-official sources.

From this work the 'base year' estimates are built up, this being 1992 for the 1994 edition of the Yearbook.

Production is then forecast for the next two years and markets for the next five years. These forecasts are made in **real terms using constant exchange rates and excluding inflation**. Forecasts are based on historical performance of each product (of which we have extensive knowledge), the general economic outlook and the major growth influencing factors. Greater details of this aspect of the methodology are given in the 'Guide to the Interpretation of the Statistics' in Appendix 4.2.

Each new edition of the Yearbook is **fully revised and updated** with all sources being reanalysed and therefore it must be emphasised that the constantly changing electronics industry requires a continuing programme of revisions to the market and production data. This methodology does not, therefore, facilitate year-on-year comparisons of products

between different editions, but historical figures on a comparable basis are available on PC Diskette and through the Subscriber Enquiry Service referred to at the end of Appendix 4.2.

## **DESCRIPTION OF CONTENT**

Following this introduction, **Section 2** covers summary data with an economic overview, electronic market overview and quick-reference European Summary Tables of Import-Export, Production and Market Totals for the major electronics sectors and products in US dollars.

**Section 3** is the detailed country data. The format of the Yearbooks is standardised with this volume containing 16 Country Data sections. Each Country Data entry includes the following information for each of the 16 countries:

- **Basic Statistics and Economic Indicators** — including area, population, employment, GDP per capita, living standards with forecasts of growth of GDP and industrial production; commentary on growth and policy.
- **Electronics Industry** — commentary on structure and developments.
- **List of Sources**
- **Electronic Production Data** — estimates and forecasts for 1991 to 1994 in local currency and US dollars detailed for each of the following sectors: Electronic Data Processing (EDP), Office Equipment, Control & Instrumentation, Medical & Industrial, Communications & Radar, Telecommunications, Consumer Video, Consumer Audio, Consumer Personal, Active Components, Passive Components, Other Components.
- **Trade Balance** in graphical form.
- **Electronic Market Data** — estimates and forecasts for 1991 to 1997 in local currency and US dollars detailed for each of the sectors as above.

**The Appendices** contain:

- A complete listing of the exchange rates used for each country for the US Dollar conversions.
- A Guide to the Interpretation of the Statistics.
- A Comparative Guide to Statistical Trade Classifications.
- A complete detailed guide to the Definitions of the Electronic Product Headings.
- A translation of product headings into French, German and Italian.

## **2 SUMMARY DATA**

### **2.1 ECONOMIC OVERVIEW**

Growth in the major economies of the world, as represented by the OECD, was only 0.9% in 1991, 1.6% in 1992 and remained very low in 1993 at 0.9%. Growth will accelerate only slowly to 1.6% in 1994 and 2.5% in 1995, held back by weak economic activity in Japan and Europe. The annual average during 1994-98 will be 2.5%. Growth will be dampened by widespread and deep-seated structural impediments, including job insecurity, high indebtedness, large government deficits and weak real estate markets. High real interest rates currently remain a major obstacle to recovery in Europe.

The recovery in the US, which began as long ago as early 1991, remains sluggish and patchy. It gathered pace late in 1992 but slowed again during the first half of 1993 and only achieved a slightly stronger performance in the second half of the year. In annual average terms, GDP expanded by 2.6% in 1992 and similar growth rates look likely for 1993 to 1995. The continued sluggish expansion is the net result of several conflicting forces on the key sector of the economy which is consumer demand. The main positive stimulus comes from the low level of interest rates. Consumer spending is, however, being held back by a lack of confidence, which may reflect concern about the still high level of consumer debt, but also reflects fear about job security and employment prospects. However, over the five year period 1994-98 the US will outperform both Japan and Western Europe with GDP growth averaging 2.6% per annum.

Japan's economy is suffering from a full fledged recession, real GDP growth for 1993 was around zero, compared with 1.1% in 1992 and 4.1% in 1991. Three recent fiscal stimulation packages totalling ¥30 trillion, the prospect of income tax cuts and a record low discount rate have failed, so far, to revive a private sector which is suffering poor corporate profits, a strong yen, weak personal income growth, rising job insecurity and high indebtedness. Growth in 1994 is forecast to again be around zero and to grow by 2.5% in 1995.

Rising unemployment, weak consumer and business confidence, high real interest rates, weak export markets and large government deficits are widespread problems throughout Europe. Spain, Italy, the UK and Ireland have benefited from currency devaluation. Weakness is primarily centred in manufacturing, although in France at least the recession is increasingly spreading to the service sector. With EC unemployment set to continue rising from the current level of 17.5 million towards 20 million in 1994, recovery will develop only slowly. EC GDP growth has fallen steadily since 1990, being 1.3% in 1991 and 1.1% in 1992. In 1993 it will fall 0.7%, followed by a modest 1% growth in 1994. Over the medium term, EC GDP growth will be limited to an average of 2.1% per annum during 1994-98, below the US and Japan.

Most of the Asia-Pacific countries continue to grow strongly in the face of the poor performance of the major countries and depressed world trade. Excluding Japan, growth in the Asia-Pacific region was 6.3% in 1992, 6.9% in 1993 and is forecast to fall only slightly in 1994 and 1995. Malaysia is particularly strong, closely followed by Thailand with only Philippines being relatively depressed.

Inflation will remain subdued in OECD countries reflecting wage moderation amid job insecurity, increased global competition and weak oil prices. OECD consumer prices are forecast to rise by only 3% in 1994 and 3.4% in 1995.

## **2.2 ELECTRONICS MARKET OVERVIEW**

The market for electronics equipment and components in the 30 major countries of the world in West Europe, America, Japan and Asia Pacific was US\$683 billion in 1992. This was an increase of 0.1% in current dollar terms. However, if exchange rate variations and inflation are excluded the market decreased by 5.4%.

In 1993 the electronics market started to recover, although, with the recession still evident in some countries, the overall real growth was only 0.2%. It will be 1994 before any significant world growth is apparent, forecast as 2.3% for the year. The rate of growth will increase, to 3% in 1995 and 3.3% in 1996, but in 1997 many countries will experience a slowing with growth forecast at 3%. These rates of growth, low by comparison to those seen in the nineteen eighties, are due to depressed military expenditure, the effects of low cost production in countries such as China, Vietnam, North Korea and Russia and low rates of economic growth in many countries. It should be noted that throughout the Yearbook series all figures, with the exception of 1991, are expressed in 1992 constant exchange rate and values and therefore growth rates are real, excluding inflation. It should also be noted that production and market estimates and forecasts are based on factory sales.

Following a real decline of 5% in 1991, the US electronics market grew by 1.5% in 1992 compared with a forecast growth of 1.2% made in the 1993 Yearbook. The main growth areas were electronic data processing at 5.8%, consumer products at 4.4%, active components at 7% and telecommunications at 6.5%. The communications and radar sector, which includes military communications, declined by 5%, with radio communications including mobile telephones growing by 3.6%. In 1993 real growth is estimated to have been 4% with integrated circuits growing by 17%. Growth in 1994 is forecast to be similar in most sectors except integrated circuits, which will only increase by 7%, due to stabilising of prices. In 1995 growth is forecast to slow to only 1.9% and then to grow at a subdued level or around 2.5% per annum for the next two years.

The Japanese market was disastrous in 1992 with a staggering real fall of 17.6%. The worst sector was consumer, with a fall of over 21%, colour television factory sales declining from 8.7 million units to 7.1 million units. Most sectors exhibited similar reductions except for medical and office equipment. Further large declines occurred in 1993, notably in electronic data processing 13% down and consumer 15% down, the overall drop being estimated as 8.3%. The recession is forecast to continue in 1994 with a further fall in the market of 2.2%. The stimulating measures taken by the government will eventually have an effect and in 1995 growth will resume. In 1996 and 1997 Japan is expected to have the highest growth for electronic products in the industrialised world approaching 6% p.a., although the market size in 1997 in yen terms will still only be around that of 1988.

Production in Japan declined by a real 12.7% in 1992 and by an estimated 6.1% in 1993, less than the drop in the domestic market. However, in the longer term the move to overseas production continues with the number of foreign plants increasing. It is likely that growth in Japanese production in the mid to late nineties will be at the world level for industrialised countries of 3-4%, lower than growth in the domestic market.

The West Europe market fell by 7.2% in 1992 and by a further 1.1% in 1993. However, there were large differences between the countries with Germany declining by 11.5% in 1992 and 2.3% in 1993 whilst in the UK the decline was only 1.4% in 1992 with growth of

2.7% in 1993. In 1994 all countries of West Europe should return to growth, although the level will be a modest 2% in total. In 1995 and 1996 it is forecast that growth will exceed 3% but in 1997 there will be a slowing to around 2%. Over this period growth in Germany is forecast to increase to 4.5% in 1996 while the UK will remain at around 2.7% p.a. from 1992 to 1996, reducing to 1.7% in 1997.

Growth is resuming in the Brazilian economy and with it the electronics market. Following a decline of 2.4% in 1992 growth for electronics products is forecast as 5.5% in 1993, increasing to 7.2% in 1994. After this the growth rate is expected to fall slightly but to be a still buoyant 4.6% in 1997. Relaxation of trade tariffs are expected to increase exports with the result that production of electronic goods is forecast to increase by 8% in 1993 and 11% in 1994.

The Asia Pacific region, excluding Japan, remains buoyant with growth in production exceeding 6% per annum in 1992 to 1994. The countries with the highest growths are Indonesia, Malaysia and Thailand with an average growth of 17.5% p.a. South Korea, however, has followed the pattern of the industrialised world with a market decline of 6.3% in 1992 and only minimal production growth of 1.2%. By 1994 growth in both its domestic market and its production should return to a level of around 4% p.a. Hong Kong continues its progression to a service centre for Chinese production with high market growth and low production growth.

**Real Market Growth — %**

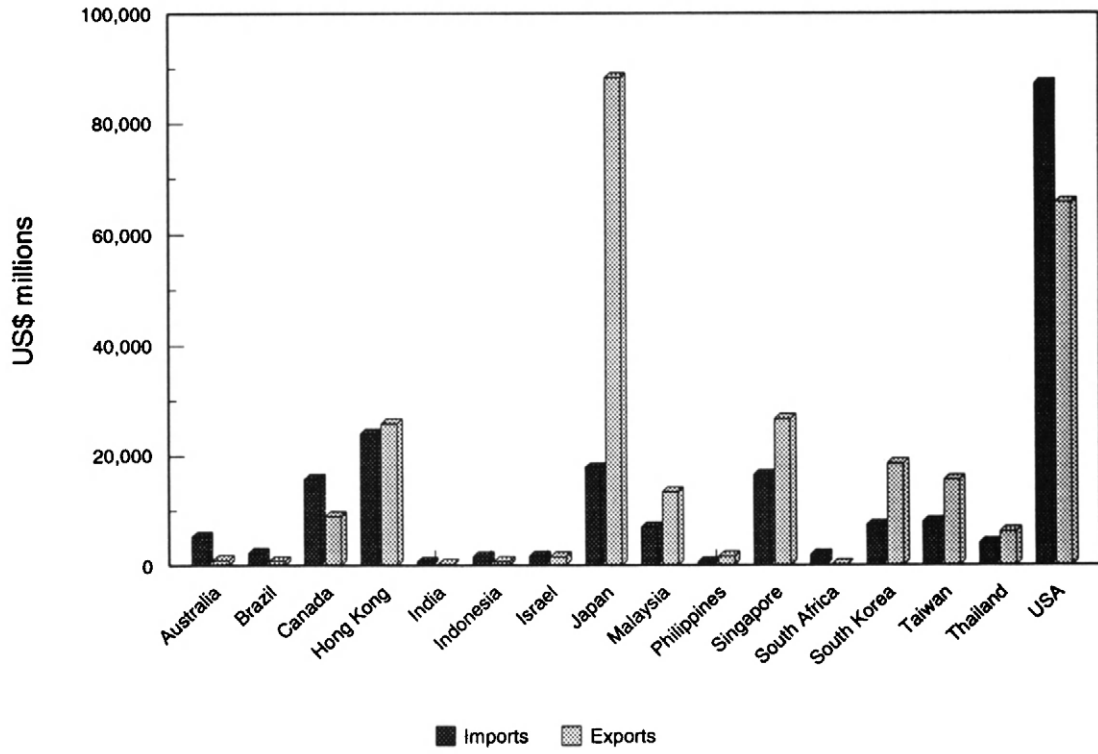
	<b>1991/92</b>	<b>1992/93</b>	<b>1993/94</b>	<b>1994/95</b>	<b>1995/96</b>	<b>1996/97</b>
Australia	7.5	3.8	4.8	3.6	3.2	2.0
Brazil	-2.4	5.5	7.2	6.8	5.9	4.6
Canada	0.2	3.5	3.8	3.3	3.0	2.0
Hong Kong	5.3	4.0	5.8	4.1	2.7	1.8
India	6.5	6.8	8.2	7.1	6.6	5.9
Indonesia	9.6	9.4	8.8	7.2	5.9	4.5
Israel	12.5	10.3	9.3	8.4	7.1	5.1
Japan	-17.6	-8.3	-2.2	3.3	5.6	5.6
Malaysia	6.4	12.4	10.1	9.0	8.5	7.0
Philippines	-4.1	4.5	6.9	8.4	7.0	6.3
Singapore	5.0	4.6	4.9	5.1	3.7	2.6
South Africa	-10.2	1.6	3.7	3.9	4.1	3.1
South Korea	-6.3	1.6	3.5	4.3	3.2	2.7
Taiwan	4.6	3.9	4.0	3.4	3.4	2.6
Thailand	18.6	14.9	13.7	11.4	9.6	7.2
USA	1.5	4.0	3.2	1.9	2.4	2.3
US Japan Asia Pacific	-4.4	0.9	2.5	3.1	3.7	3.4
Asia Pacific	2.8	5.5	6.0	5.7	4.7	3.7
Rest of World	0.9	4.8	5.7	5.2	4.6	3.5
<b>EUROPE</b>	<b>-7.2</b>	<b>-1.1</b>	<b>2.0</b>	<b>3.0</b>	<b>3.3</b>	<b>2.3</b>
<b>WORLD</b>	<b>-5.4</b>	<b>0.2</b>	<b>2.3</b>	<b>3.0</b>	<b>3.6</b>	<b>3.1</b>



**Real Production Growth — %**

	<b>1991/92</b>	<b>1992/93</b>	<b>1993/94</b>
Australia	5.7	3.6	3.8
Brazil	-2.7	8.1	11.6
Canada	0.0	5.1	4.7
Hong Kong	-3.5	0.7	2.4
India	6.6	8.0	9.9
Indonesia	25.8	20.4	19.1
Israel	12.8	8.4	7.7
Japan	-12.7	-6.1	0.1
Malaysia	19.9	16.6	13.4
Philippines	-4.1	5.2	9.1
Singapore	10.9	6.0	6.5
South Africa	-10.5	-2.8	1.9
South Korea	1.2	3.1	4.1
Taiwan	1.7	3.4	3.9
Thailand	18.7	18.2	19.8
USA	-0.9	2.6	3.0
US Japan Asia Pacific	-4.4	0.3	3.2
Asia Pacific	6.3	6.7	7.4
Rest of World	0.6	6.5	8.2
<b>EUROPE</b>	<b>-8.5</b>	<b>-0.5</b>	<b>2.1</b>
<b>TOTAL</b>	<b>-5.5</b>	<b>0.1</b>	<b>2.9</b>

### 1992 Trade



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**SUMMARY OF IMPORTS 1991**

Table 2.3

Values in millions of current US dollars

Country	EDP	Office	Control	Medical &	Comms &	Telecom—	Consumer	Active	Passive	Other	TOTAL
		Equipment	& Instr	Industrial	Radar	munication		Components			
<b>Australia</b>	2230	160	569	160	332	258	718	249	202	211	<b>5090</b>
<b>Brazil</b>	378	35	365	132	136	53	151	393	201	266	<b>2110</b>
<b>Canada</b>	5111	322	1224	317	674	698	1633	2804	1390	585	<b>14759</b>
<b>Hong Kong</b>	2343	556	280	221	702	823	5624	3686	1532	2232	<b>17999</b>
<b>India</b>	172	12	110	74	24	35	1	178	51	35	<b>691</b>
<b>Indonesia</b>	147	29	199	73	216	182	35	170	113	101	<b>1265</b>
<b>Israel</b>	358	24	173	38	81	104	169	246	139	82	<b>1414</b>
<b>Japan</b>	5104	170	2141	489	911	644	1644	3844	1185	1089	<b>17222</b>
<b>Malaysia</b>	937	40	396	55	317	216	296	2155	796	1095	<b>6304</b>
<b>Philippines</b>	132	9	36	3	84	132	28	86	70	70	<b>650</b>
<b>Singapore</b>	4336	215	801	61	301	456	2645	1716	1381	2538	<b>14450</b>
<b>South Africa</b>	665	140	258	79	70	120	179	143	81	104	<b>1841</b>
<b>South Korea</b>	1624	70	1440	219	317	187	169	2384	664	595	<b>7669</b>
<b>Taiwan</b>	1649	70	763	97	202	388	573	1588	829	444	<b>6603</b>
<b>Thailand</b>	694	39	284	73	168	169	214	677	310	559	<b>3188</b>
<b>USA</b>	25059	1893	3246	3076	2396	4538	15005	12260	4516	4291	<b>76280</b>
<b>TOTAL</b>	<b>50939</b>	<b>3784</b>	<b>12285</b>	<b>5168</b>	<b>6932</b>	<b>9004</b>	<b>29084</b>	<b>32579</b>	<b>13461</b>	<b>14298</b>	<b>177535</b>

**SUMMARY OF IMPORTS 1992**

Values in millions of current US dollars

Country	EDP	Office	Control	Medical &	Comms &	Telecom—	Consumer	Active	Passive	Other	TOTAL
		Equipment	& Instr	Industrial	Radar	munication		Components			
<b>Australia</b>	2252	176	563	176	372	313	753	293	204	222	<b>5326</b>
<b>Brazil</b>	582	32	385	128	177	103	134	342	196	186	<b>2265</b>
<b>Canada</b>	5603	354	1257	344	760	926	1616	3296	1010	552	<b>15717</b>
<b>Hong Kong</b>	3511	654	513	354	1528	864	7241	5372	1678	2281	<b>23996</b>
<b>India</b>	168	13	119	76	23	31	3	181	56	33	<b>702</b>
<b>Indonesia</b>	132	19	232	94	303	263	40	184	157	158	<b>1582</b>
<b>Israel</b>	512	34	193	48	89	114	202	292	158	85	<b>1727</b>
<b>Japan</b>	5787	142	1945	512	811	567	1835	3906	1071	1189	<b>17764</b>
<b>Malaysia</b>	1100	46	432	70	331	195	333	2481	938	976	<b>6903</b>
<b>Philippines</b>	140	10	38	3	85	125	34	104	65	68	<b>672</b>
<b>Singapore</b>	5195	218	867	83	392	537	2392	2537	1531	2710	<b>16464</b>
<b>South Africa</b>	710	95	288	69	82	162	166	168	89	107	<b>1935</b>
<b>South Korea</b>	1408	51	1436	189	362	180	179	2246	645	635	<b>7331</b>
<b>Taiwan</b>	1811	95	846	125	290	393	721	2214	901	463	<b>7858</b>
<b>Thailand</b>	894	49	277	75	190	213	279	950	381	664	<b>3972</b>
<b>USA</b>	30576	2192	3712	3314	2710	5109	16441	14361	4168	4523	<b>87106</b>
<b>TOTAL</b>	<b>60383</b>	<b>4179</b>	<b>13103</b>	<b>5661</b>	<b>8506</b>	<b>10094</b>	<b>32369</b>	<b>38927</b>	<b>13247</b>	<b>14852</b>	<b>201320</b>

Notes: Malaysia & Philippines for 1992 are estimated.

India includes exports from Export Processing Zones.

Exports include re-exports. It should also be noted that re-exports are very high for Hong Kong & Singapore.

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**SUMMARY OF EXPORTS 1991**

Table 2.4

Values in millions of current US dollars

Country	EDP	Office Equipment	Control & Instr	Medical & Industrial	Comms & Radar	Telecom— munication	Consumer	Active Passive Other			TOTAL
								C o m p o n e n t s			
<b>Australia</b>	450	14	116	41	67	122	32	13	38	36	<b>928</b>
<b>Brazil</b>	171	11	58	4	10	35	307	67	72	14	<b>749</b>
<b>Canada</b>	2832	19	516	104	459	932	84	1639	1066	117	<b>7769</b>
<b>Hong Kong</b>	3396	802	267	238	926	963	7659	2626	1082	2406	<b>20364</b>
<b>India</b>	107	2	11	1	3	2	42	32	14	24	<b>238</b>
<b>Indonesia</b>	23	4	1	0	27	32	105	40	2	69	<b>303</b>
<b>Israel</b>	90	0	119	143	184	254	151	237	69	39	<b>1286</b>
<b>Japan</b>	20504	3548	3548	2141	3756	4185	22378	12881	5126	5867	<b>83933</b>
<b>Malaysia</b>	1236	83	65	44	410	432	2732	4395	386	795	<b>10578</b>
<b>Philippines</b>	110	0	2	0	177	44	49	1254	37	23	<b>1696</b>
<b>Singapore</b>	9731	349	478	51	400	317	3994	4204	846	2012	<b>22382</b>
<b>South Africa</b>	14	5	24	9	7	18	3	2	8	5	<b>96</b>
<b>South Korea</b>	2648	104	158	59	368	564	4585	6467	483	1870	<b>17306</b>
<b>Taiwan</b>	6663	225	173	122	526	748	1426	1081	1390	1227	<b>13580</b>
<b>Thailand</b>	1816	112	29	2	55	307	906	1106	151	419	<b>4903</b>
<b>USA</b>	26458	564	7459	3510	3146	2769	1861	8368	3249	3277	<b>60661</b>
<b>TOTAL</b>	<b>76249</b>	<b>5842</b>	<b>13024</b>	<b>6468</b>	<b>10520</b>	<b>11724</b>	<b>46313</b>	<b>44413</b>	<b>14020</b>	<b>18199</b>	<b>246772</b>

**SUMMARY OF EXPORTS 1992**

Values in millions of current US dollars

Country	EDP	Office Equipment	Control & Instr	Medical & Industrial	Comms & Radar	Telecom— munication	Consumer	Active Passive Other			TOTAL
								C o m p o n e n t s			
<b>Australia</b>	488	9	137	56	38	146	24	18	53	35	<b>1003</b>
<b>Brazil</b>	196	10	63	9	7	35	318	78	128	14	<b>858</b>
<b>Canada</b>	3573	21	581	139	518	1197	94	1973	634	129	<b>8859</b>
<b>Hong Kong</b>	4434	875	449	379	1791	940	9111	4156	1267	2409	<b>25813</b>
<b>India</b>	90	11	7	9	5	2	53	27	17	26	<b>247</b>
<b>Indonesia</b>	105	12	1	0	30	55	327	61	15	157	<b>763</b>
<b>Israel</b>	182	2	130	172	199	311	105	329	72	83	<b>1585</b>
<b>Japan</b>	23787	3457	3724	1976	4079	4551	20039	15189	5425	6008	<b>88236</b>
<b>Malaysia</b>	2183	102	80	50	467	482	3357	5257	454	896	<b>13328</b>
<b>Philippines</b>	100	0	1	0	175	35	52	1280	35	23	<b>1701</b>
<b>Singapore</b>	12445	373	488	63	554	385	4155	5217	901	2058	<b>26639</b>
<b>South Africa</b>	48	5	39	7	11	30	7	3	11	8	<b>168</b>
<b>South Korea</b>	2808	108	229	64	442	542	4367	7519	545	1918	<b>18542</b>
<b>Taiwan</b>	8622	203	178	139	537	783	1231	1032	1538	1266	<b>15529</b>
<b>Thailand</b>	2180	146	36	4	46	370	1171	1335	322	494	<b>6105</b>
<b>USA</b>	28038	537	7736	3857	3501	3537	2156	9535	3083	3626	<b>65606</b>
<b>TOTAL</b>	<b>89280</b>	<b>5871</b>	<b>13879</b>	<b>6924</b>	<b>12400</b>	<b>13401</b>	<b>46568</b>	<b>53009</b>	<b>14499</b>	<b>19151</b>	<b>274982</b>

Notes: Malaysia & Philippines for 1992 are estimated.

India includes exports from Export Processing Zones.

Exports include re-exports. It should also be noted that re-exports are very high for Hong Kong & Singapore.

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CONSOLIDATED SUMMARY OF PRODUCTION 1991

Table 2.5

Country	\$M EDP	\$M Office Equipment	\$M Control & Instr	\$M Medical & Industrial	\$M Comms & Radar	\$M Telecomm- unications	\$M Consumer	\$M Components	\$M TOTAL
Australia	688	28	234	91	493	820	135	261	2752
Brazil	4843	318	620	225	740	1280	2270	2433	12729
Canada	2868	119	917	434	1090	2234	339	624	8626
Hong Kong	2145	306	109	96	403	512	2743	2026	8340
India	455	90	261	59	519	544	1115	735	3778
Indonesia	165	37	50	42	176	224	647	312	1653
Israel	330	7	170	330	523	380	170	448	2358
Japan	59563	5400	7519	5452	10778	15519	36519	66652	207400
Malaysia	771	89	97	65	441	665	2814	4147	9091
Philippines	135	12	30	19	210	132	156	1445	2139
Singapore	7977	302	261	71	373	242	2038	5445	16710
South Africa	192	7	45	56	170	518	215	98	1301
South Korea	3499	253	202	186	766	1884	6697	11959	25446
Taiwan	5938	239	83	217	708	1368	1713	5513	15779
Thailand	1908	119	57	31	184	365	1149	1590	5403
USA	47965	5282	26673	9588	50562	16259	6060	44024	206413
<b>TOTAL</b>	<b>139442</b>	<b>12608</b>	<b>37328</b>	<b>16962</b>	<b>68137</b>	<b>42946</b>	<b>64780</b>	<b>147713</b>	<b>529918</b>

CONSOLIDATED SUMMARY OF PRODUCTION 1992

Table 2.6

Country	\$M EDP	\$M Office Equipment	\$M Control & Instr	\$M Medical & Industrial	\$M Comms & Radar	\$M Telecomm- unications	\$M Consumer	\$M Components	\$M TOTAL
Australia	746	22	272	94	464	779	142	258	2778
Brazil	4614	329	630	238	760	1200	2331	2607	12709
Canada	2835	100	950	459	1140	2066	350	520	8420
Hong Kong	2261	287	89	121	517	459	2613	1973	8320
India	453	89	232	65	501	610	1098	782	3830
Indonesia	275	49	55	44	167	220	904	449	2163
Israel	422	7	200	359	575	447	122	596	2728
Japan	56598	5559	6898	5543	11142	14976	31638	63614	195969
Malaysia	1686	108	121	78	568	778	3451	5339	12128
Philippines	125	12	29	20	200	120	159	1440	2105
Singapore	10123	332	290	79	485	264	2484	6196	20252
South Africa	207	7	53	59	175	500	216	91	1308
South Korea	3647	258	211	192	883	1798	6363	13065	26417
Taiwan	7865	203	88	242	732	1249	1542	6080	18001
Thailand	2313	153	87	45	239	429	1456	1984	6705
USA	47942	5117	26711	9960	49391	18089	6254	46304	209768
<b>TOTAL</b>	<b>142112</b>	<b>12632</b>	<b>36915</b>	<b>17597</b>	<b>67939</b>	<b>43985</b>	<b>61122</b>	<b>151298</b>	<b>533600</b>

Notes: — 1991 & 1992 are current figures at current exchange rates  
— 1993 & 1994 are forecasts at 1992 constant values & exchange rates (ie. inflation is not included)  
—the components total includes the value of wafers shipped to far East countries for assembly of semiconductors and represents double counting of these goods. An estimate of this is US\$5100m in 1991 and US\$5400m in 1992.

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**CONSOLIDATED SUMMARY OF PRODUCTION 1993**

Table 2.7

Country	\$M EDP	\$M Office Equipment	\$M Control & Instr	\$M Medical & Industrial	\$M Comms & Radar	\$M Telecomm— unications	\$M Consumer	\$M Components	\$M TOTAL
<b>Australia</b>	799	23	291	104	473	772	142	274	<b>2877</b>
<b>Brazil</b>	5075	345	662	262	874	1236	2448	2842	<b>13744</b>
<b>Canada</b>	2976	103	1007	511	1255	2087	370	544	<b>8853</b>
<b>Hong Kong</b>	2306	273	92	126	568	468	2586	1958	<b>8377</b>
<b>India</b>	476	93	220	71	531	671	1193	879	<b>4134</b>
<b>Indonesia</b>	371	54	58	48	184	231	1055	604	<b>2604</b>
<b>Israel</b>	464	7	220	381	604	492	110	680	<b>2958</b>
<b>Japan</b>	50939	5003	7036	5556	11365	14078	26734	63213	<b>183923</b>
<b>Malaysia</b>	2360	117	130	84	653	817	3826	6151	<b>14138</b>
<b>Philippines</b>	135	13	31	23	210	122	167	1514	<b>2214</b>
<b>Singapore</b>	10933	339	301	83	533	267	2487	6516	<b>21458</b>
<b>South Africa</b>	211	7	59	60	173	460	216	84	<b>1271</b>
<b>South Korea</b>	3756	263	215	202	971	1762	6203	13855	<b>27228</b>
<b>Taiwan</b>	8258	193	90	247	754	1299	1272	6508	<b>18621</b>
<b>Thailand</b>	2659	176	113	57	298	471	1714	2434	<b>7922</b>
<b>USA</b>	49380	5219	27245	10417	48403	18451	6384	49628	<b>215128</b>
<b>TOTAL</b>	<b>141099</b>	<b>12227</b>	<b>37769</b>	<b>18233</b>	<b>67850</b>	<b>43683</b>	<b>56907</b>	<b>157682</b>	<b>535450</b>

**CONSOLIDATED SUMMARY OF PRODUCTION 1994**

Table 2.8

Country	\$M EDP	\$M Office Equipment	\$M Control & Instr	\$M Medical & Industrial	\$M Comms & Radar	\$M Telecomm— unications	\$M Consumer	\$M Components	\$M TOTAL
<b>Australia</b>	846	24	314	112	492	764	146	288	<b>2987</b>
<b>Brazil</b>	5837	373	728	298	1005	1298	2621	3185	<b>15344</b>
<b>Canada</b>	3096	106	1058	562	1380	2108	391	566	<b>9265</b>
<b>Hong Kong</b>	2375	267	96	131	625	477	2579	2025	<b>8577</b>
<b>India</b>	523	96	209	79	574	738	1315	1010	<b>4545</b>
<b>Indonesia</b>	483	57	61	52	211	247	1220	772	<b>3102</b>
<b>Israel</b>	501	8	242	406	640	531	104	753	<b>3185</b>
<b>Japan</b>	48392	4753	7458	5823	12046	13937	25848	65838	<b>184095</b>
<b>Malaysia</b>	3068	124	141	91	751	858	4098	6904	<b>16035</b>
<b>Philippines</b>	149	13	33	25	227	126	179	1662	<b>2415</b>
<b>Singapore</b>	12026	349	316	88	576	272	2457	6773	<b>22857</b>
<b>South Africa</b>	222	7	66	63	180	446	225	85	<b>1295</b>
<b>South Korea</b>	3907	268	222	215	1068	1780	6261	14624	<b>28345</b>
<b>Taiwan</b>	8754	183	92	254	784	1325	1092	6862	<b>19345</b>
<b>Thailand</b>	3058	202	158	71	388	542	2096	2976	<b>9491</b>
<b>USA</b>	51849	5324	28063	11084	47919	18820	6560	51866	<b>221485</b>
<b>TOTAL</b>	<b>145085</b>	<b>12154</b>	<b>39255</b>	<b>19354</b>	<b>68868</b>	<b>44269</b>	<b>57193</b>	<b>166190</b>	<b>552368</b>

Notes: — 1991 & 1992 are current figures at current exchange rates  
— 1993 & 1994 are forecasts at 1992 constant values & exchange rates (ie. inflation is not included)  
—the components total includes the value of wafers shipped to far East countries for assembly of semiconductors and represents double counting of these goods. An estimate of this is US\$5100m in 1991 and US\$5400m in 1992.

SUMMARY BY PRODUCTS (see note)

SUMMARY OF OFFICE EQUIPMENT PRODUCTION

Table 2.9

Product	\$M	\$M	\$M	\$M
	1991	1992	1993	1994
Electronic Typewriters	643	539	483	447
Electronic Calculators	1027	956	904	883
Electronic Cash Registers	907	924	863	844
Photocopiers	9999	10163	9930	9937
<b>TOTAL</b>	<b>12577</b>	<b>12581</b>	<b>12180</b>	<b>12110</b>

(Note: total excludes dictation equipment; photocopiers includes other office equipment for India)

SUMMARY OF MEDICAL & INDUSTRIAL PRODUCTION

Table 2.10

Country	Medical Equipment			
	\$M	\$M	\$M	\$M
	1991	1992	1993	1994
Australia	51	55	63	70
Brazil	110	120	138	166
Canada	256	281	323	362
Hong Kong	14	6	6	5
India	23	30	36	43
Indonesia	26	28	31	34
Israel	250	270	284	301
Japan	4096	4142	4225	4478
Malaysia	18	23	27	31
Philippines	10	11	13	15
Singapore	34	39	43	48
South Africa	18	21	25	28
South Korea	66	83	91	100
Taiwan	56	62	64	66
Thailand	16	24	31	40
USA	7595	7924	8320	8903
<b>TOTAL</b>	<b>12639</b>	<b>13120</b>	<b>13718</b>	<b>14689</b>

Country	Industrial Equipment			
	\$M	\$M	\$M	\$M
	1991	1992	1993	1994
Australia	41	39	40	42
Brazil	115	118	124	133
Canada	178	178	188	200
Hong Kong	82	114	120	126
India	36	35	35	37
Indonesia	16	16	17	18
Israel	80	89	98	106
Japan	1356	1402	1331	1345
Malaysia	47	54	57	60
Philippines	9	9	10	11
Singapore	37	39	40	41
South Africa	38	38	36	35
South Korea	120	109	111	115
Taiwan	161	180	184	187
Thailand	15	22	26	31
USA	1993	2036	2097	2181
<b>TOTAL</b>	<b>4324</b>	<b>4477</b>	<b>4514</b>	<b>4665</b>

Notes: —In some countries the above breakdowns are not available, refer to individual country tables for definitions  
 —1991 and 1992 are current figures at current exchange rates  
 —1993 to 1997 are forecasts at 1992 constant values & exchange rates (ie inflation is not included)

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SUMMARY OF CONSUMER PRODUCTION

Table 2.11

Country	Video Equipment			
	\$M 1991	\$M 1992	\$M 1993	\$M 1994
Australia	91	108	110	115
Brazil	1239	1249	1311	1416
Canada	261	264	280	297
Hong Kong	98	53	48	43
India	690	663	729	816
Indonesia	367	563	676	797
Israel	—	—	—	—
Japan	22556	18898	15496	14721
Malaysia	1121	1414	1627	1789
Philippines	69	70	74	80
Singapore	845	1265	1328	1355
South Africa	145	154	157	164
South Korea	4205	4031	3950	4029
Taiwan	655	586	528	475
Thailand	926	1234	1481	1851
USA	4612	4714	4808	4953
<b>TOTAL</b>	<b>37879</b>	<b>35266</b>	<b>32603</b>	<b>32903</b>

Country	Audio Equipment			
	\$M 1991	\$M 1992	\$M 1993	\$M 1994
Australia	31	24	23	23
Brazil	882	933	980	1038
Canada	61	66	69	73
Hong Kong	837	793	754	716
India	283	283	300	321
Indonesia	161	214	246	283
Israel	170	122	110	104
Japan	10800	9654	8399	8231
Malaysia	1693	2036	2199	2309
Philippines	57	59	62	66
Singapore	1186	1210	1149	1092
South Africa	65	59	56	57
South Korea	2041	1866	1773	1737
Taiwan	860	748	598	479
Thailand	108	91	95	100
USA	470	515	530	541
<b>TOTAL</b>	<b>19704</b>	<b>18672</b>	<b>17343</b>	<b>17169</b>

Country	Personal Consumer Equipment			
	\$M 1991	\$M 1992	\$M 1993	\$M 1994
Australia	13	10	9	9
Brazil	149	149	156	166
Canada	17	19	20	21
Hong Kong	1808	1767	1785	1820
India	143	152	165	178
Indonesia	119	127	133	140
Israel	—	—	—	—
Japan	3163	3087	2840	2896
Malaysia	0	0	0	0
Philippines	30	30	32	33
Singapore	8	9	10	10
South Africa	5	4	4	4
South Korea	451	466	480	494
Taiwan	197	208	145	138
Thailand	115	131	138	144
USA	978	1025	1046	1066
<b>TOTAL</b>	<b>7197</b>	<b>7184</b>	<b>6962</b>	<b>7121</b>

Notes: — In some countries the above breakdowns are not available, refer to individual country tables for definitions  
 — 1991 and 1992 are current figures at current exchange rates  
 — 1993 to 1997 are forecasts at 1992 constant values & exchange rates (ie inflation is not included)



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SUMMARY OF CONSUMER PRODUCTION – UNITS

Table 2.12

Country	Colour Televisions—No.x1000			
	1991	1992	1993	1994
Australia	167	177	154	136
Brazil	2550	2500	2688	2969
Canada	485	530	572	617
Hong Kong	567	150	128	109
India	880	830	954	1116
Indonesia	1500	2200	2638	3108
Israel	—	—	—	—
Japan	13438	12024	10453	10491
Malaysia	4374	5010	5651	6094
Philippines	195	200	211	231
Singapore	4389	5100	5304	5357
South Africa	407	560	578	613
South Korea	14786	12788	12429	12539
Taiwan	2459	1901	1712	1530
Thailand	3863	6830	8082	9958
USA	12865	13532	13798	14207
<b>TOTAL</b>	<b>62925</b>	<b>64332</b>	<b>65351</b>	<b>69072</b>

Country	Monochrome Televisions—No.x1000			
	1991	1992	1993	1994
Australia	—	—	—	—
Brazil	420	430	387	357
Canada	—	—	—	—
Hong Kong	182	350	322	295
India	—	—	—	—
Indonesia	220	240	250	256
Israel	—	—	—	—
Japan	—	—	—	—
Malaysia	—	—	—	—
Philippines	110	100	91	85
Singapore	83	87	77	67
South Africa	300	155	135	121
South Korea	3039	4058	2720	1893
Taiwan	61	50	38	29
Thailand	160	300	290	291
USA	—	—	—	—
<b>TOTAL</b>	<b>4575</b>	<b>5770</b>	<b>4310</b>	<b>3394</b>

Country	Video Recorders—No.x1000			
	1991	1992	1993	1994
Australia	100	90	101	114
Brazil	420	460	494	546
Canada	120	60	58	56
Hong Kong	—	—	—	—
India	120	70	72	75
Indonesia	140	690	800	911
Israel	—	—	—	—
Japan	30699	23366	19191	18198
Malaysia	2270	2900	3401	3815
Philippines	72	73	80	90
Singapore	1043	2166	2327	2429
South Africa	—	—	—	—
South Korea	10110	9439	9414	9746
Taiwan	773	801	679	572
Thailand	1729	2600	3062	3755
USA	90	80	84	89
<b>TOTAL</b>	<b>47686</b>	<b>42795</b>	<b>39765</b>	<b>40396</b>

Notes: – 1991 and 1992 are current figures  
– 1993 to 1997 are forecasts

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SUMMARY OF COMPONENTS PRODUCTION

Table 2.13

Country	Active Components			
	\$M	\$M	\$M	\$M
	1991	1992	1993	1994
Australia	48	46	51	55
Brazil	999	1047	1173	1349
Canada	168	124	130	135
Hong Kong	324	332	339	352
India	311	324	372	439
Indonesia	127	196	274	357
Israel	235	327	392	451
Japan	36570	35717	36431	38252
Malaysia	3269	4148	4770	5342
Philippines	1298	1300	1365	1502
Singapore	3802	4387	4694	4928
South Africa	18	16	17	19
South Korea	7777	8804	9508	10174
Taiwan	2084	2170	2495	2745
Thailand	1250	1435	1723	2033
USA	23058	24817	27795	29463
<b>TOTAL</b>	<b>81338</b>	<b>85189</b>	<b>91529</b>	<b>97595</b>

(See note concerning semiconductors on table 2.14)

Country	Passive Components			
	\$M	\$M	\$M	\$M
	1991	1992	1993	1994
Australia	109	114	123	132
Brazil	788	847	906	997
Canada	266	207	218	227
Hong Kong	607	670	697	732
India	262	293	328	374
Indonesia	45	57	75	97
Israel	165	174	183	192
Japan	17800	16378	15723	16195
Malaysia	489	710	852	980
Philippines	96	90	95	102
Singapore	725	816	849	891
South Africa	60	56	50	49
South Korea	1709	1706	1740	1792
Taiwan	2030	2378	2449	2522
Thailand	175	359	502	703
USA	13015	13128	13391	13792
<b>TOTAL</b>	<b>38341</b>	<b>37983</b>	<b>38180</b>	<b>39776</b>

Country	Other Components			
	\$M	\$M	\$M	\$M
	1991	1992	1993	1994
Australia	105	98	100	102
Brazil	646	713	763	839
Canada	190	188	196	204
Hong Kong	1095	971	923	941
India	163	166	179	197
Indonesia	140	196	255	319
Israel	48	95	105	110
Japan	12281	11520	11059	11391
Malaysia	389	481	529	582
Philippines	51	50	54	58
Singapore	918	993	973	954
South Africa	20	19	17	17
South Korea	2473	2555	2606	2658
Taiwan	1399	1533	1564	1595
Thailand	165	190	209	241
USA	7951	8359	8443	8611
<b>TOTAL</b>	<b>28034</b>	<b>28127</b>	<b>27973</b>	<b>28818</b>

Note:— In some countries the above breakdowns are not available, refer to individual country tables for definitions

—1991 and 1992 are current figures at current exchange rates

—1993 to 1997 are forecasts at 1992 constant values & exchange rates (ie inflation is not included)

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**SUMMARY OF ACTIVE COMPONENTS PRODUCTION**

Table 2.14

Product	\$M	\$M	\$M	\$M
	1991	1992	1993	1994
Television Tubes	6802	6425	6445	6398
Other Valves & Tubes	4958	5447	5616	5812
Diodes	2427	2366	2298	2203
Transistors	4493	4567	4639	4701
Other Discrete Semiconductors	6526	7437	8335	9446
Integrated Circuits	56131	58947	64196	69034
<b>TOTAL</b>	<b>81338</b>	<b>85189</b>	<b>91529</b>	<b>97595</b>

Note: — the total includes the value of wafers shipped to far East countries for assembly of semiconductors and represents double counting of these goods. An estimate of this is US\$5100m in 1991 and US\$5400m in 1992.

**SUMMARY OF PASSIVE COMPONENTS PRODUCTION**

Table 2.15

Product	\$M	\$M	\$M	\$M
	1991	1992	1993	1994
Capacitors	6933	6861	6798	7029
Resistors	3621	3398	3272	3290
Connectors	6260	6099	6166	6411
Chokes, Coils & Other Inductors	4521	4371	4146	4095
Relays	2272	2269	2224	2275
Switches	1374	1429	1399	1405
Printed Circuit Boards	13360	13556	14175	15272
<b>TOTAL</b>	<b>38341</b>	<b>37983</b>	<b>38180</b>	<b>39776</b>

**SUMMARY OF OTHER COMPONENTS PRODUCTION**

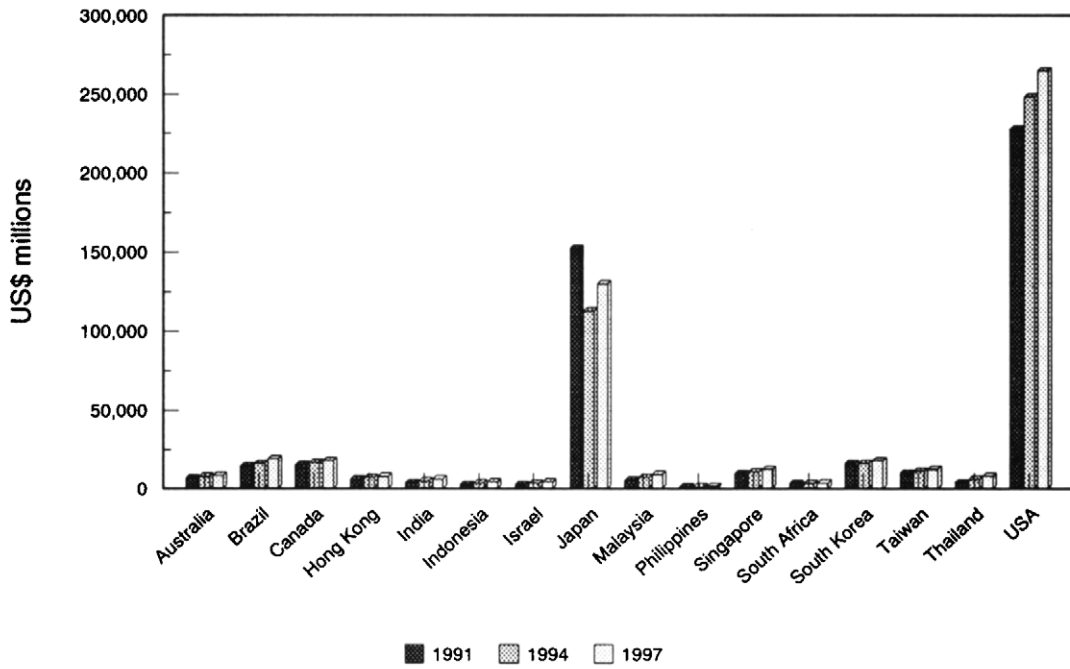
Table 2.16

Product	\$M	\$M	\$M	\$M
	1991	1992	1993	1994
Microphones	248	254	257	270
Loudspeakers	3667	3796	3832	3995
Amplifiers	1276	1220	1186	1209
Aerials	1983	1957	1999	2083
Unrecorded Media	9908	10012	9769	9927
Access. & Parts for Consumer Equip.	10953	10887	10931	11336
<b>TOTAL</b>	<b>28034</b>	<b>28127</b>	<b>27973</b>	<b>28818</b>

Notes: — In some countries the above breakdowns are not available, refer to individual country tables for definitions  
 — 1991 and 1992 are current figures at current exchange rates  
 — 1993 to 1997 are forecasts at 1992 constant values & exchange rates (ie inflation is not included)

America, Japan & Asia Pacific

Electronics Markets



America, Japan & Asia Pacific

Electronics Production

