



World Electronic Circuits Council

WECC Global PCB Production Report For 2011

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A Product of the Partnership among the WECC Member Associations
on Behalf of their Members in the Electronic Circuits Industry Worldwide



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About the WECC Global PCB Statistical Program

Development Team

The World Electronic Circuits Council (WECC) is a strategic partnership formed in 1998 by the major industry associations serving member companies in the global electronic circuits industry. Its purpose is to increase the global influence and effectiveness of its member organizations for the benefit and improvement of the industry. The member associations cooperate on standards, market research, marketing, resource development, environmental issues, world trade and economic/political affairs.

The member organizations of WECC formed a working group in 2005 to pool their statistical resources and produce a global statistical report on printed circuit board (PCB) production for the benefit of their members. This group is now the WECC Statistics and Market Committee.

The following individuals represent their respective associations on the WECC Statistics and Market Committee:

- ◆ CPCA – Kevin Yan, Vice President, China Printed Circuit Association, kevin_yyh@cPCA.org.cn
- ◆ EIPC – Kirsten Smit-Westenberg, Executive Director, European Institute of Printed Circuits, KWestenberg@eipc.org
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- ◆ IPC – Sharon Starr, Director of Market Research, IPC, sharonstarr@ipc.org, (committee chair)
- ◆ IPCA – P.S. Sudhakar, Vice President, Indian Printed Circuit Association, ipca@ipcaIndia.org
- ◆ JPCA – Noriaki Wakakuri, Manager, Japan Electronics Packaging and Circuits Association, wakakuri@jPCA.org
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- ◆ KPCA – Kyoung-Hee Lee, Deputy Secretary General, Korea Printed Circuit Association, khlee@kPCA.or.kr
- ◆ TPCA – Michelle Hung, Deputy Secretary General, Taiwan Printed Circuit Association, michelle@tpca.org.tw

Please contact the representative at your association with any questions about the report or suggestions for improving this program.

Availability

The *WECC Global PCB Production Reports* are available only from these participating associations to their members. The reports are not available for sale.

Methodology

The *WECC Global PCB Production Report* includes estimates of PCB production by country or region based on the data collected by the WECC organizations from their member PCB companies. The estimates in these reports may differ from estimates published by other sources due to differences in methodology. There is no hard data on worldwide PCB production, only estimates based on data collected from representative samples of the companies in the industry.

WECC has published its Global PCB Production Reports since 2005. The reports are published annually. The data are collected by the associations and reported here in local currencies so that real growth rates can be shown. For the sake of comparability, all of the estimates are also reported in U.S. dollars. These nominal values are not adjusted for inflation or for fluctuations in exchange rates. Year-on-year growth rates have been adjusted for currency fluctuations, due to the weakening of the U.S. dollar in recent years. A table of average exchange rates for the period is included as an appendix to this report.

Confidentiality Policy

It is the WECC organizations' policy never to share any company-specific information with other associations (including the other WECC members) or with their member companies. Only aggregate data are shared for the compilation of this report. In this way, WECC maintains complete confidentiality for all member companies.

Definitions

PCB production attributed to a country or region reflects the value of the PCBs produced there, regardless of where the companies are headquartered, and should not be confused with the PCB market (i.e., where PCBs are sold).

Many flexible circuit producers also offer assembly and other value-added services. Because these producers sell assembled or partially assembled boards, it can be difficult for them to separate the value of the bare circuits from total sales. The estimates for flexible circuit production in this report, therefore, may include some assembly revenue.

Estimates of 2011 PCB Production Value

The member associations collected production data from companies producing PCBs in their countries or regions. Every effort was made to eliminate duplication between the associations' survey samples. The countries and regions included in this analysis produce approximately 99 percent of the world's PCBs, based on value.

Estimates of Total 2011 PCB Production in the World's Major Producing Areas

In millions of local currency

Countries/Regions Where PCBs Were Produced	Rigid 1-2 Sided	Standard Multilayer	HDI/ Microvia /Build-Up	IC Substrate	Flexible Circuits	Rigid Flex	Others	Total Estimated Production Value	Currency
China	14,033	84,927	24,188	2,580	25,207	1,161	2	152,097	RMB
Hong Kong	38	575	51	405	0	0	8	1,077	HKD
India	14,220	8,840	110	0	1,450	0	0	24,620	INR
Japan	114,940	182,250	89,370	277,190	100,120	16,700	27,540	808,110	JPY
Korea	741,421	2,160,177	1,314,891	2,563,484	383,462	143,202	0	7,306,637	KRW
Taiwan	23,400	58,300	37,000	84,200	33,500	5,600	0	242,000	TWD
Western Europe	606	1,034	212	17	152	129	30	2,182	EUR
North America	292	2,441	180	20	135	79	0	3,147	USD

Note: Other Asia and Central and South America are not shown in this table because the data were collected in many different currencies that could not be aggregated.

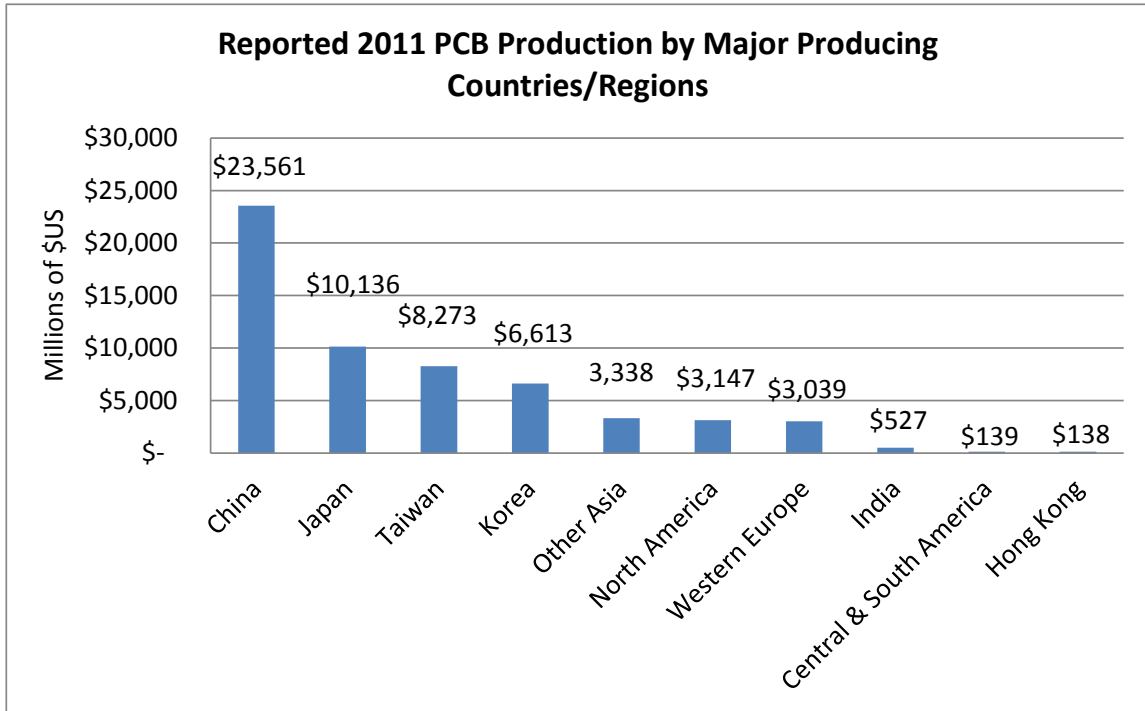
In millions of U.S. dollars

Countries/Regions Where PCBs Were Produced	Rigid 1-2 Sided	Standard Multilayer	HDI/ Microvia /Build-Up	IC Substrate	Flexible Circuits	Rigid Flex	Others	Total Estimated Production Value
China	2,174	13,156	3,747	400	3,905	180	0	23,561
Hong Kong	5	74	7	52	0	0	1	138
India	304	189	2	0	31	0	0	527
Japan	1,442	2,286	1,121	3,477	1,256	209	345	10,136
Korea	671	1,955	1,190	2,320	347	130	0	6,613
Taiwan	800	1,993	1,265	2,879	1,145	191	0	8,273
Other Asia*	540	361	272	523	1,630	0	11	3,338
Western Europe	845	1,441	295	24	212	180	42	3,039
North America	292	2,441	180	20	135	79	0	3,147
Central and South America	80	56	2	0	1	0	0	139
Total Production of Major PCB-Producing Countries	7,153	23,952	8,081	9,694	8,662	970	400	58,911

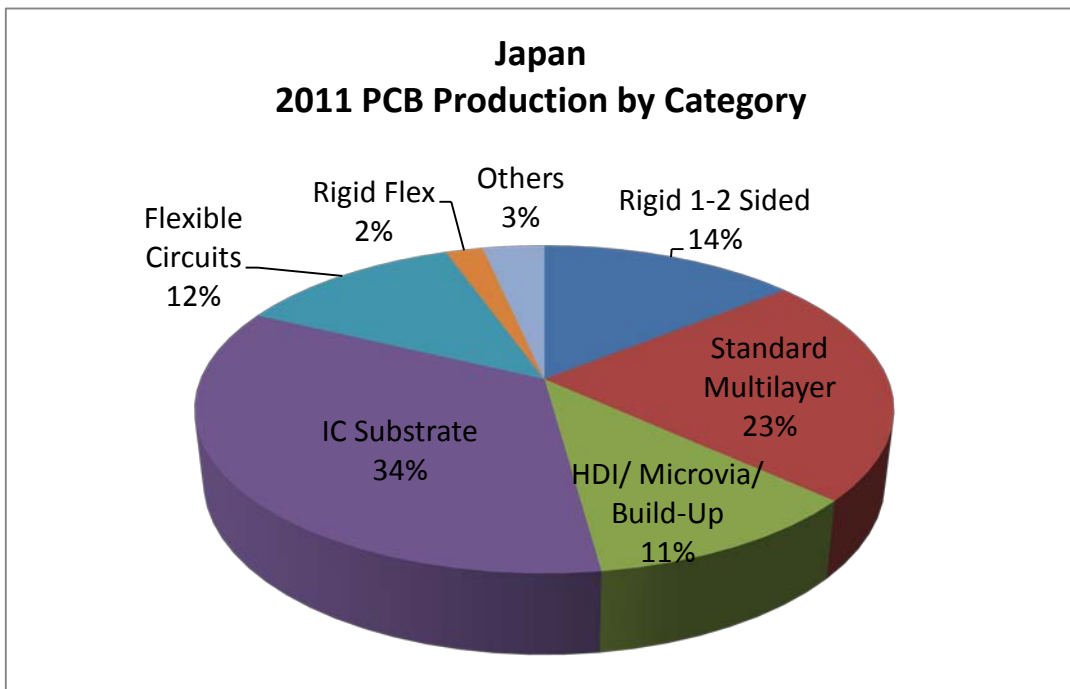
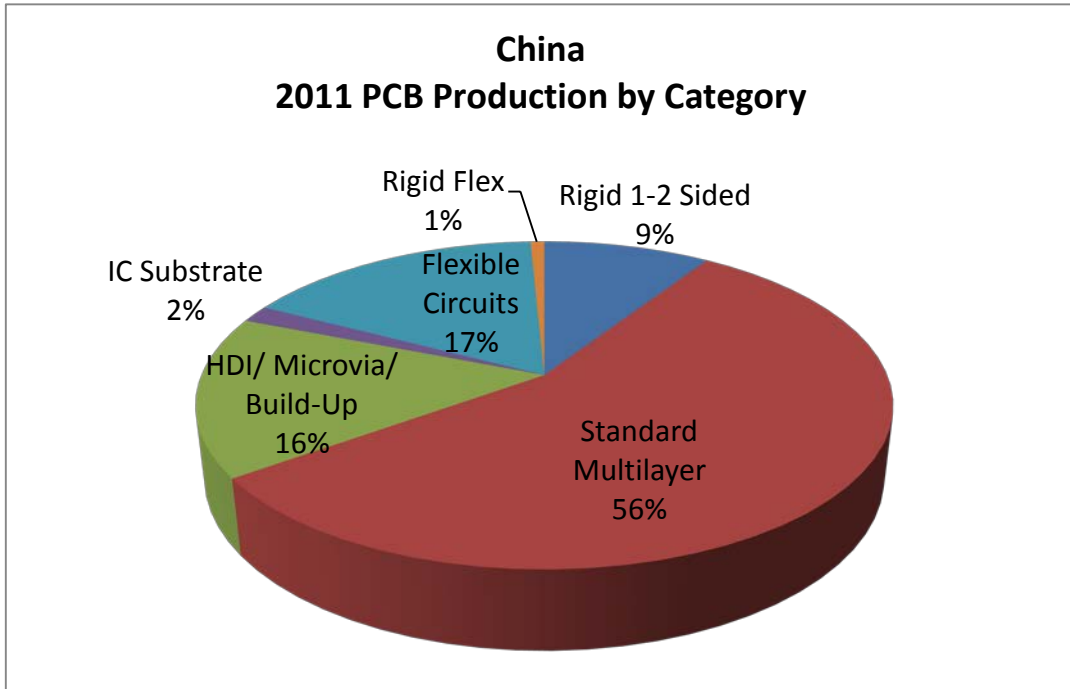
* Other Asia includes Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam.

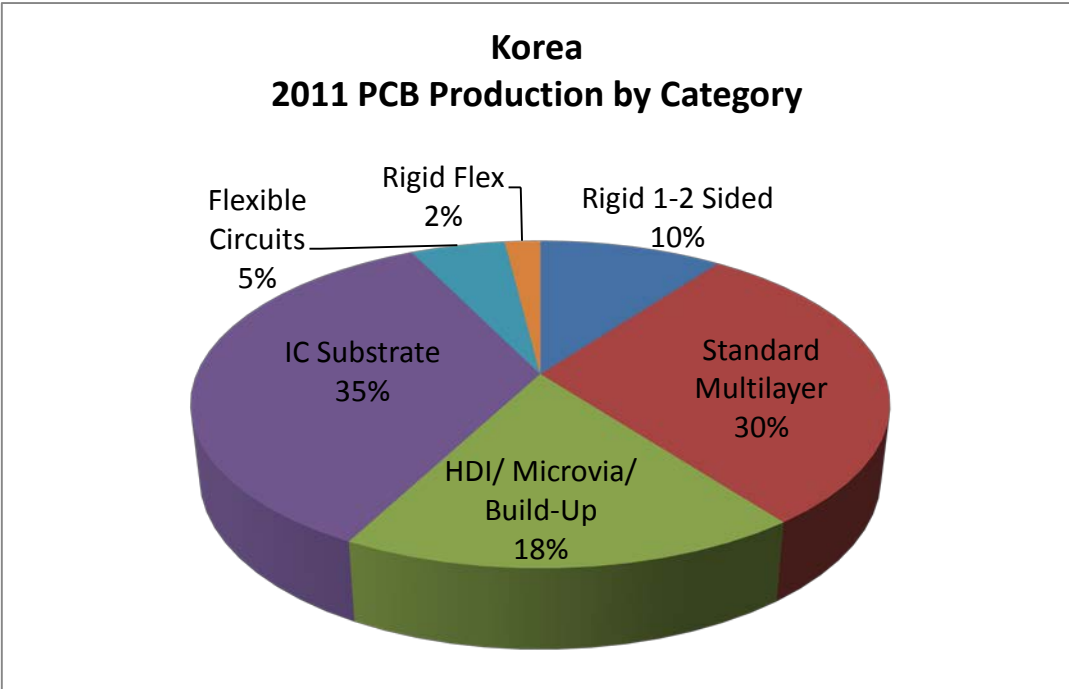
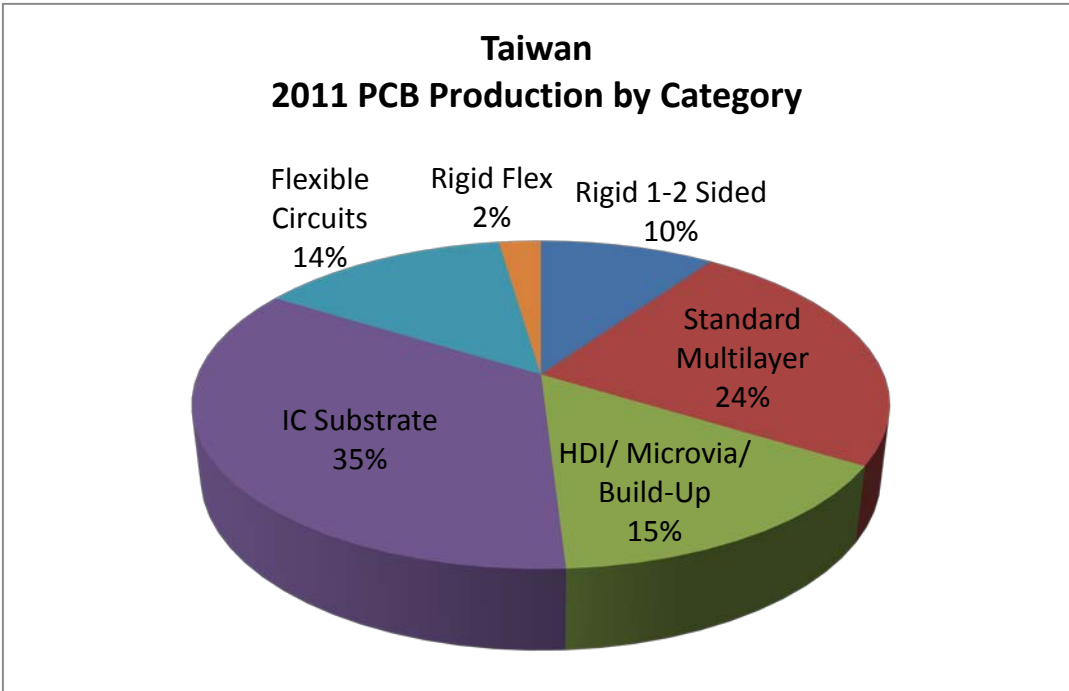
Notes:

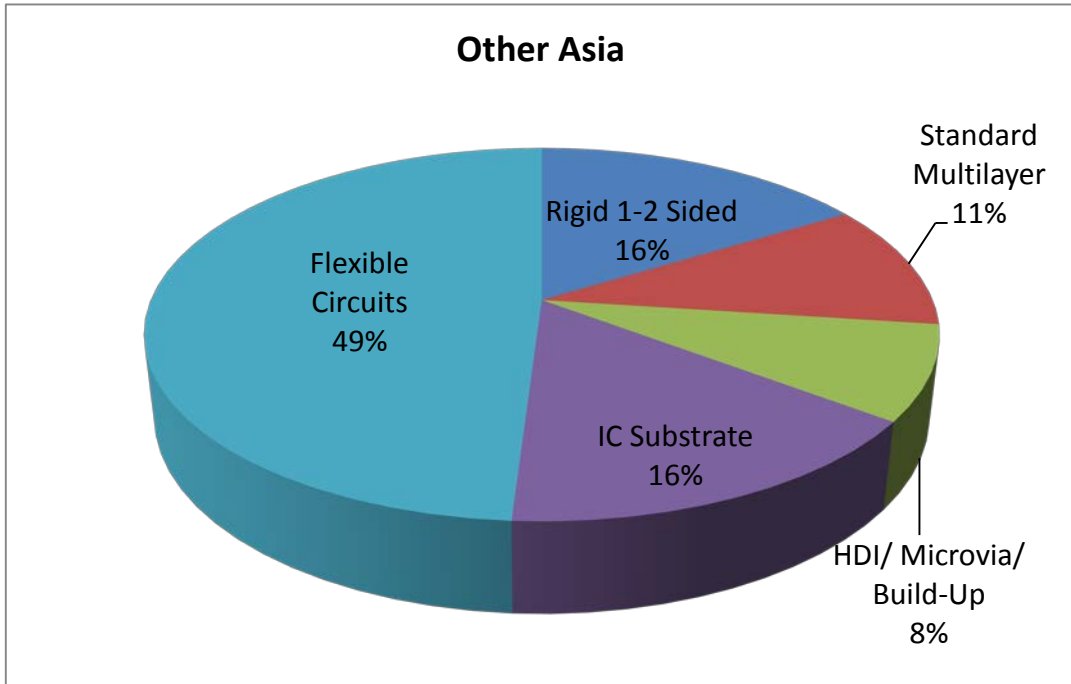
1. Flexible circuit and rigid flex estimates may include some assembly revenue.
2. The revenue estimates in this report are nominal and have not been adjusted for inflation.
3. The estimates reported in U.S. dollars have not been adjusted for exchange rate fluctuations. Please see the appendix on exchange rates to determine the impact on amounts in specific currencies.
4. Totals may vary slightly from the sums of the numbers in the table due to rounding.



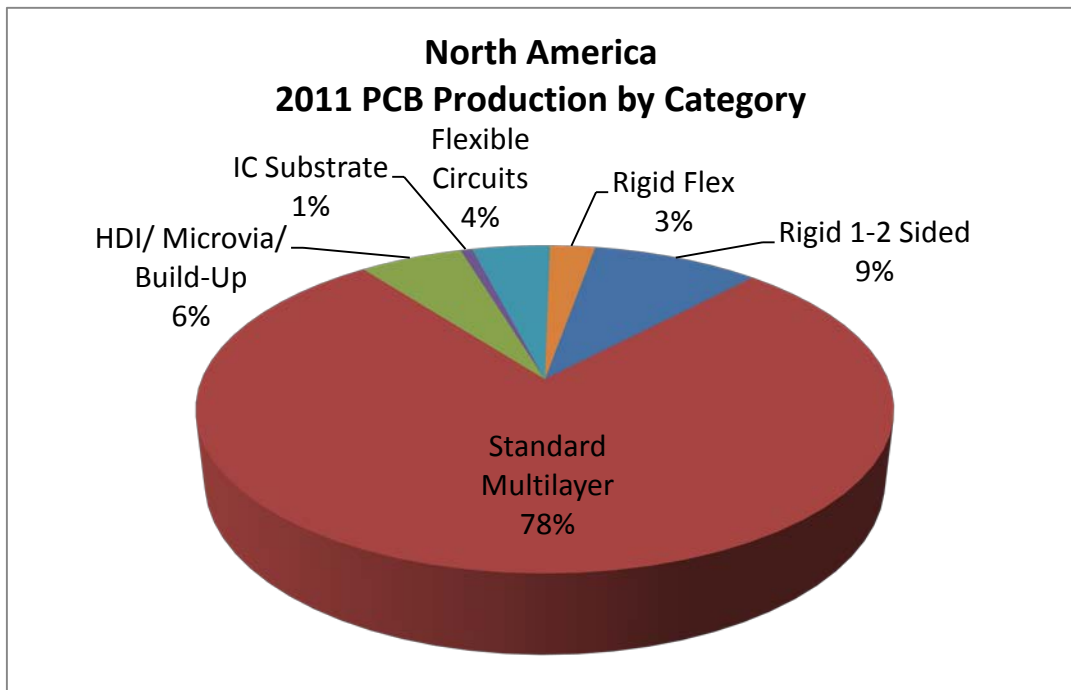
Product Profiles of Major PCB Producing Countries/Regions

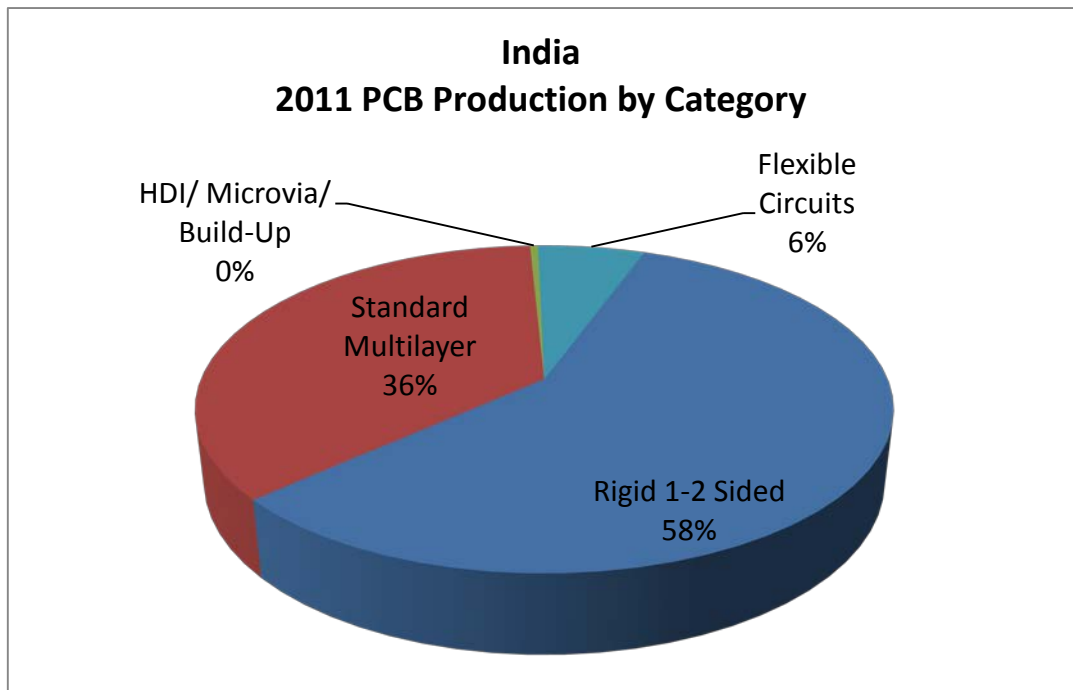
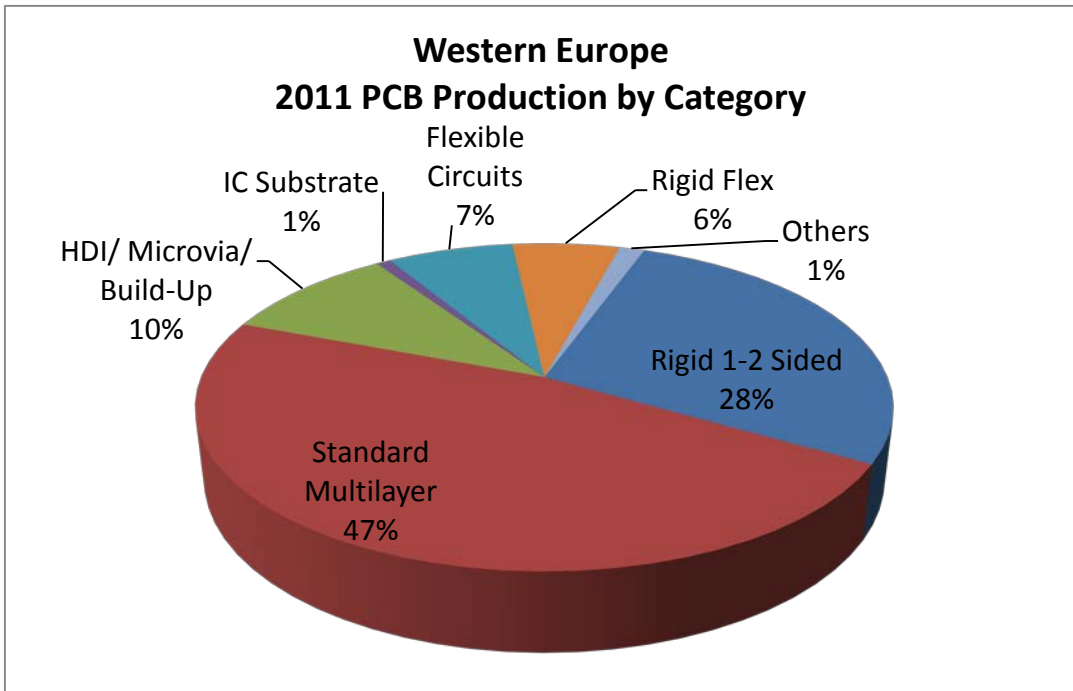


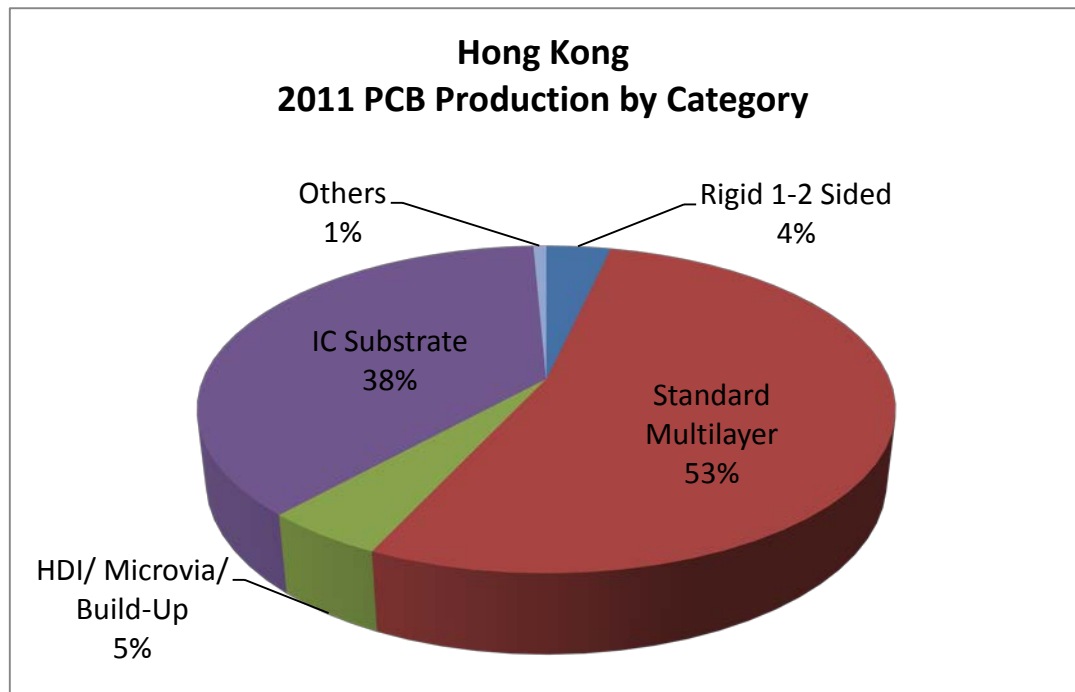
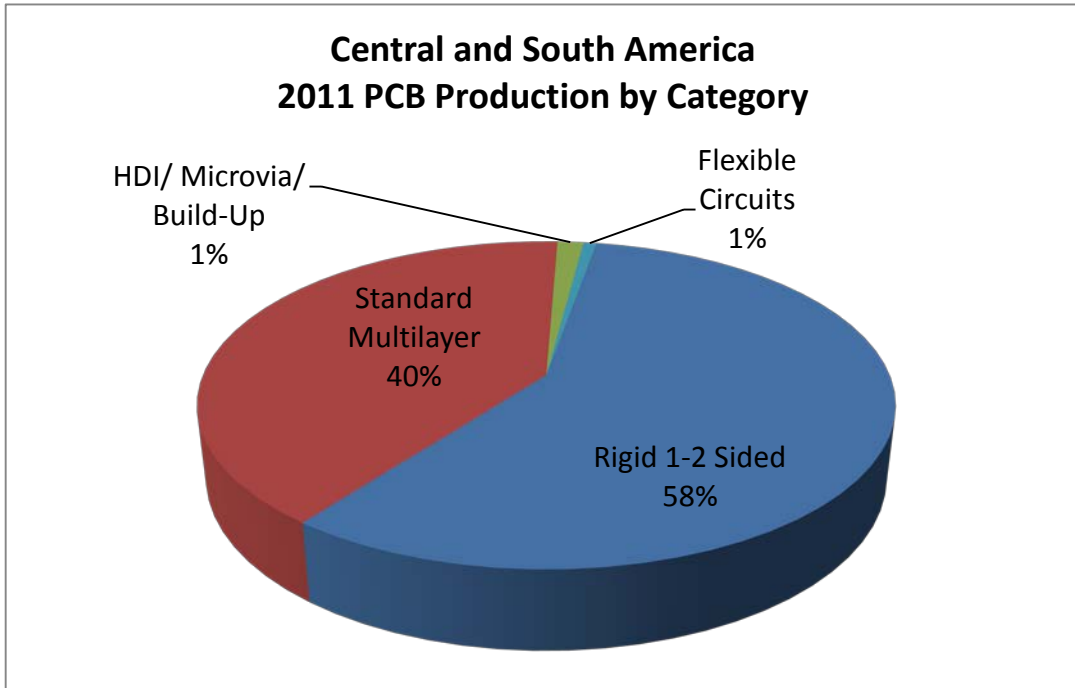




Note: Other Asia includes Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam.

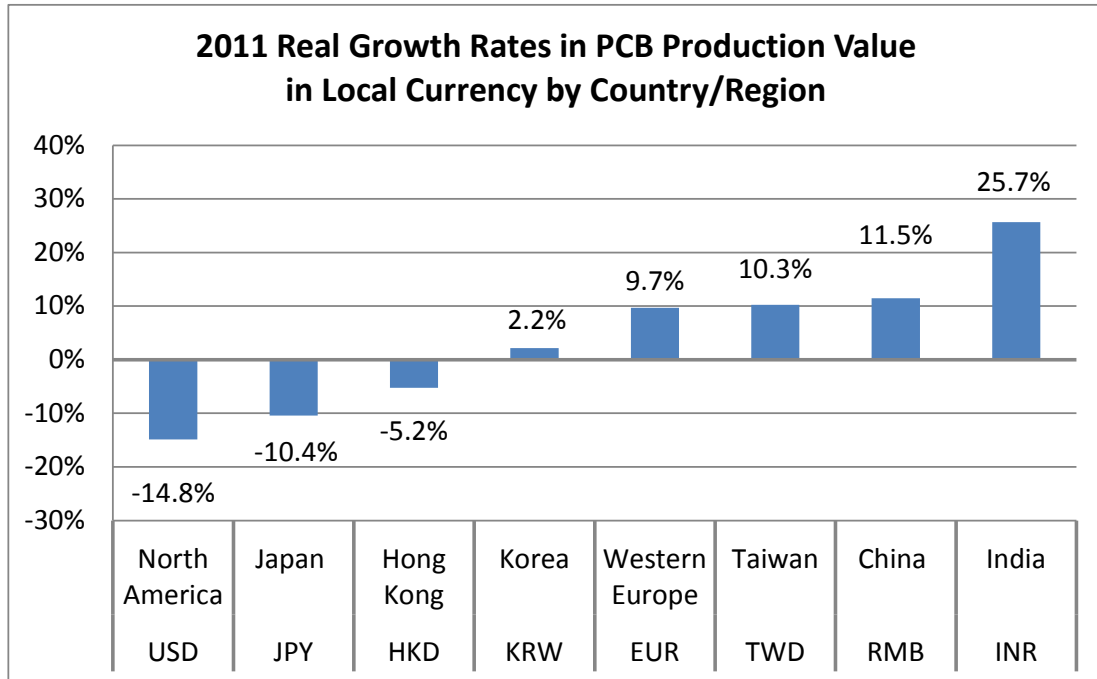




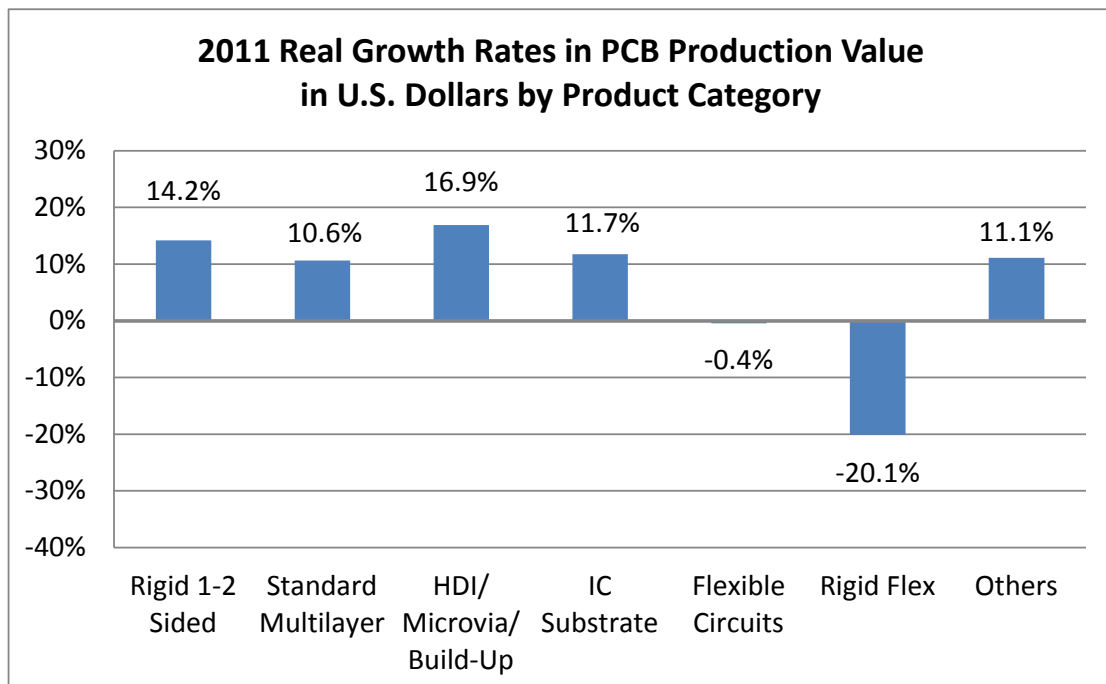


Industry Growth

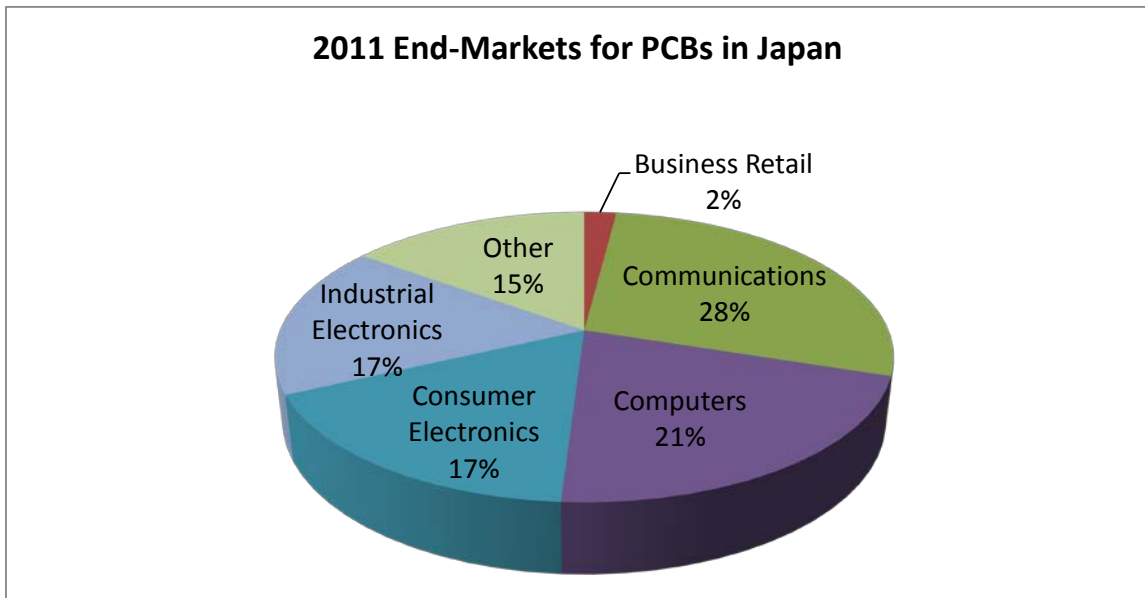
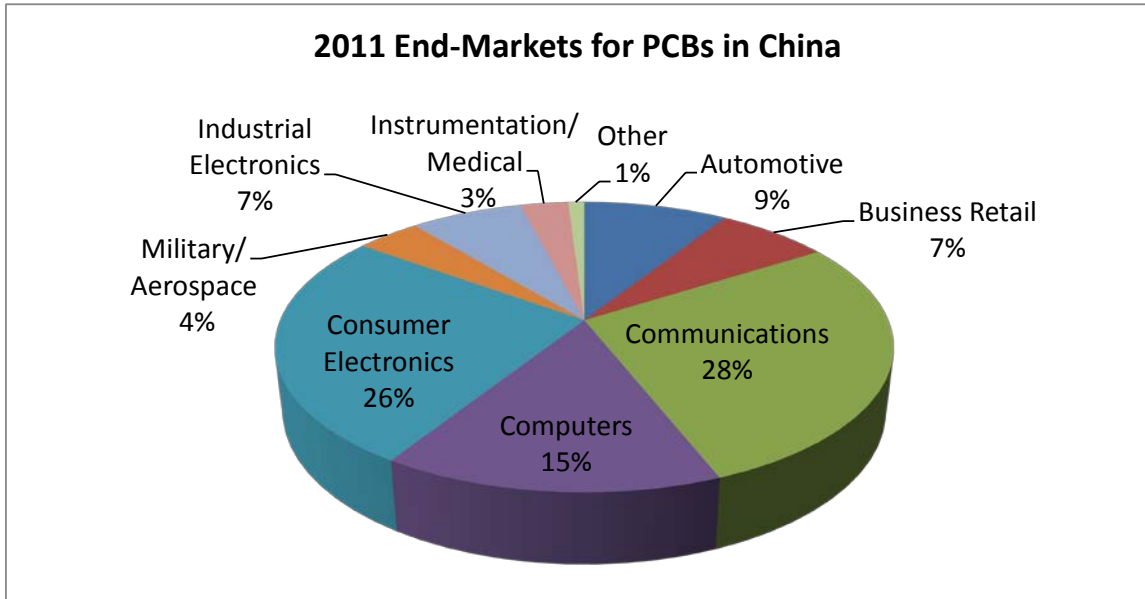
Based on a comparison of the 2010 and 2011 estimates from the WECC PCB production surveys in local currencies, worldwide PCB production increased 9.8 percent from 2010 to 2011. India had the highest growth in PCB production in 2011.



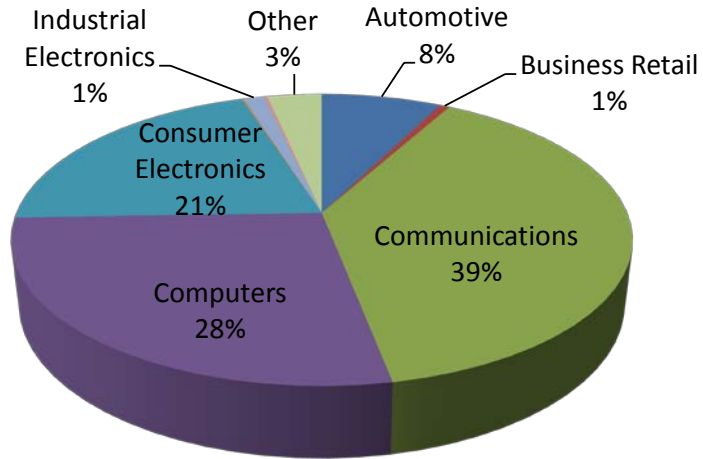
Real growth rates in 2011 production were highest for HDI/microvia/build-up boards and rigid 1- and 2-sided boards. Rigid flex was the only category that experienced a significant decline.



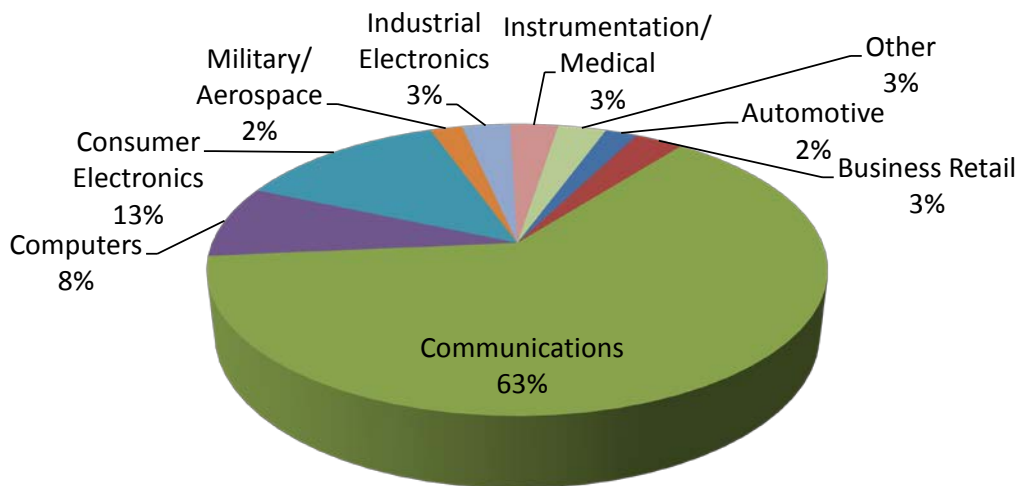
End-Markets for PCBs by Country/Region



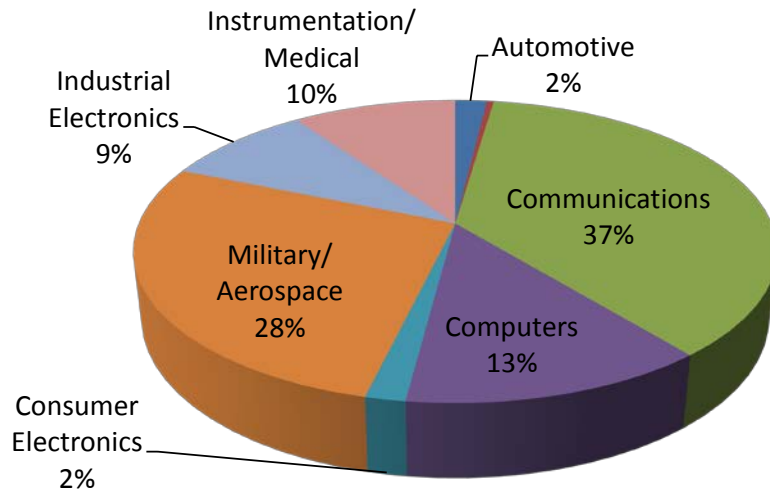
2011 End-Markets for PCBs in Taiwan



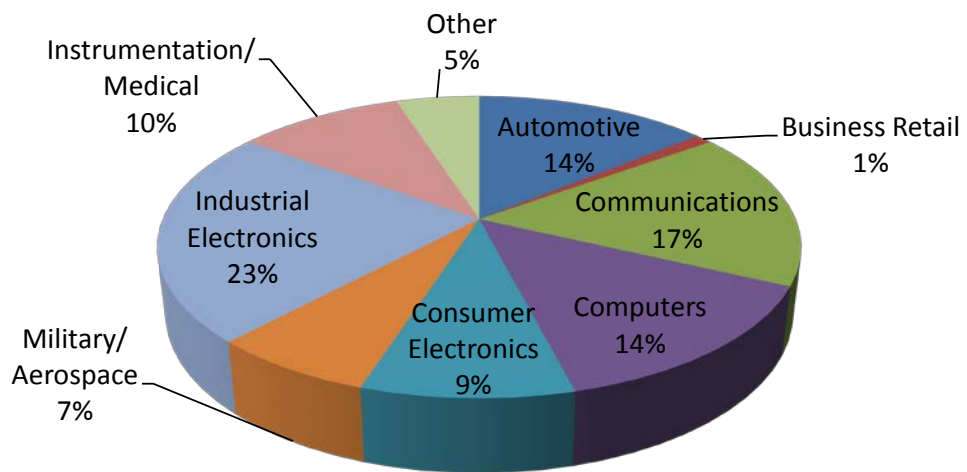
2011 End-Markets for PCBs in Korea



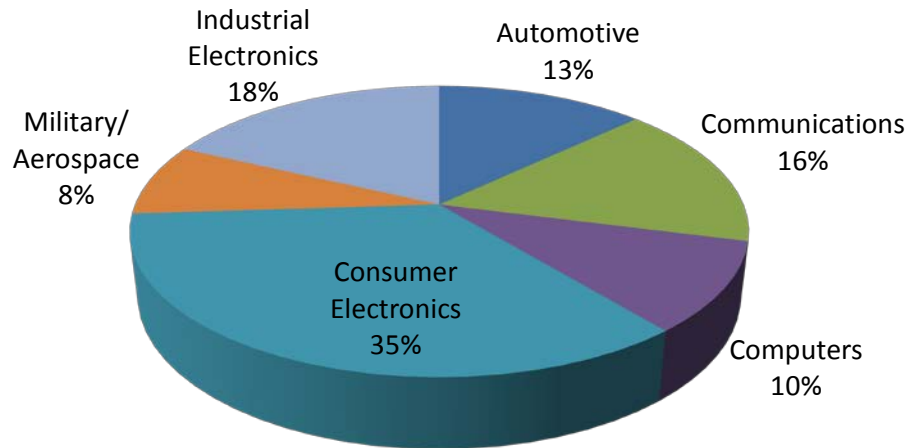
2011 End-Markets for PCBs in North America



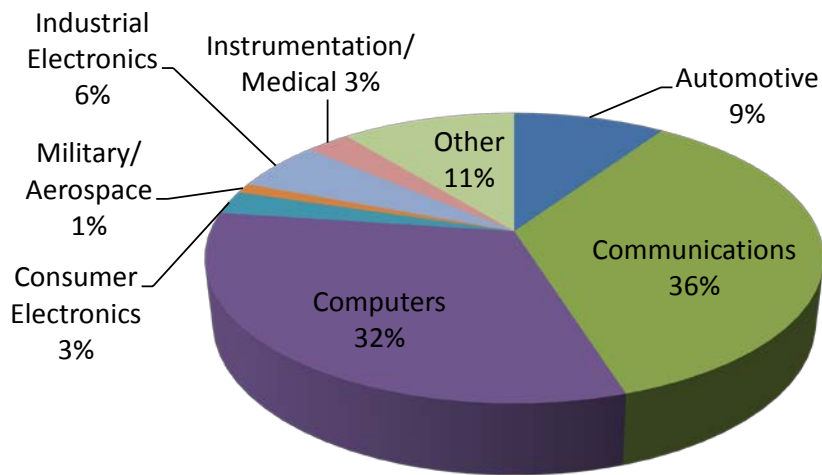
2011 End-Markets for PCBs in Western Europe



2011 End-Markets for PCBs in India



2011 End-Markets for PCBs in Hong Kong



Appendix: Average Exchange Rates for 2010 and 2011

		Currency (ISO Code)	2010 Average Exchange Rate (=1.00 USD)	2011 Average Exchange Rate (=1.00 USD)	% Change
ASIA/PACIFIC	Australia	AUD	1.09	0.97	-11.1%
	China	CNY	6.76	6.46	-4.5%
	Hong Kong	HKD	7.77	7.78	0.2%
	India	INR	45.71	46.74	2.2%
	Indonesia	IDR	9055.33	8717.94	-3.7%
	Japan	JPY	87.75	79.73	-9.1%
	Malaysia	MYR	3.21	3.05	-5.0%
	New Zealand	NZD	1.39	1.26	-8.9%
	North Korea	KPW	135.00	135.00	0.0%
	Pakistan	PKR	84.43	85.61	1.4%
	Philippines	PHP	44.94	43.17	-3.9%
	Singapore	SGD	1.36	1.26	-7.8%
	South Korea	KRW	1153.15	1104.95	-4.2%
	Taiwan	TWD	31.51	29.25	-7.2%
	Thailand	THB	31.50	30.28	-3.9%
Vietnam	VND	18924.20	20452.00	8.1%	
EUROPE	Austria	EUR	0.75	0.72	-4.9%
	Belgium	EUR	0.75	0.72	-4.9%
	Czech Republic	CZK	19.07	17.62	-7.6%
	Denmark	DKK	5.62	5.35	-4.9%
	Finland	EUR	0.75	0.72	-4.9%
	France	EUR	0.75	0.72	-4.9%
	Germany	EUR	0.75	0.72	-4.9%
	Hungary	HUF	207.76	200.04	-3.7%
	Ireland	EUR	0.75	0.72	-4.9%
	Italy	EUR	0.75	0.72	-4.9%
	Netherlands	EUR	0.75	0.72	-4.9%
	Norway	NOK	6.04	5.59	-7.4%
	Poland	PLN	3.01	2.95	-2.0%
	Portugal	EUR	0.75	0.72	-4.9%
	Russia	RUB	30.31	29.29	-3.4%
	Slovakia	EUR	0.75	0.72	-4.9%
	Spain	EUR	0.75	0.72	-4.9%
	Sweden	SEK	7.20	6.48	-10.0%
	Switzerland	CHF	1.04	0.89	-15.1%
	Turkey	TRY	1.51	1.67	11.2%
United Kingdom	GBP	0.65	0.62	-3.8%	
MIDDLE EAST & AFRICA	Egypt	EGP	5.59	5.92	5.9%
	Iran	IRR	9922.67	10494.20	5.8%
	Israel	ILS	3.73	3.57	-4.3%
	South Africa	ZAR	7.31	7.23	-1.1%
	Tunisia	TND	1.42	1.40	-1.3%
THE AMERICAS	Canada	CAD	1.03	0.99	-4.0%
	Mexico	MXN	12.62	12.39	-1.8%
	USA	USD	1.00	1.00	0.0%
	Argentina	ARS	3.90	4.12	5.6%
	Brazil	BRL	1.75	1.67	-4.9%
	Chile	CLP	501.04	481.03	-4.0%
	Venezuela	VEB	4210.73	4289.69	1.9%

Source: www.oanda.com/convert/fxhistory



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