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Pure-Play Foundries Boosting Their Presence in China

With fabless companies in China on the rise, the country is expected to account for 13% share of pure-play foundry sales in 2017.

IC Insights recently released its *September Update to The McClean Report*. The 32-page *Update* included a detailed look at the pure-play foundry market. Shown below is an excerpt from the *Update*.

With the rise of fabless IC companies in China, demand for foundry services in that country has also increased. Figure 1 shows IC Insights' listing of the top pure-play foundries and their sales to China in 2016 and a forecast for 2017. In total, pure-play foundry sales in China are expected to jump by 16% this year to about \$7.0 billion, more than double the rate of increase for the total pure-play foundry market. As shown, only about 10% of TSMC's sales are forecast to go into China in 2017, yet the company is expected to hold the largest share of the China foundry market this year with a 46% share, up two percentage points from 2016.

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Major Pure-Play Foundries' China Sales

Company	2015 (\$M)	Share of Company's Sales	Share of China Foundry Market	2016 (\$M)	Share of Company's Sales	Share of China Foundry Market	2017F (\$M)	Share of Company's Sales	Share of China Foundry Market
TSMC	2,115	8%	44%	2,655	9%	44%	3,170	10%	46%
SMIC	1,075	48%	22%	1,485	51%	25%	1,455	47%	21%
UMC	450	10%	9%	490	11%	8%	635	13%	9%
GlobalFoundries	250	5%	5%	390	7%	6%	475	8%	7%
Hua Hong Semi	360	55%	7%	375	52%	6%	455	56%	7%
Shanghai Huali	165	45%	3%	195	42%	3%	235	45%	3%
XMC	75	43%	2%	85	44%	1%	115	45%	2%
Other	315	5%	7%	335	5%	6%	410	6%	6%
Total	4,805	10%	100%	6,010	11%	100%	6,950	13%	100%

Source: Company reports, IC Insights

Figure 1

The Chinese foundry market represented 11% of the total pure-play foundry market in 2015, 12% in 2016, and is forecast to hold a 13% share this year. As a result of this growth, most pure-play foundries have made plans to locate or expand IC production in mainland China over the next few years. TSMC, GlobalFoundries, UMC, Powerchip, and, most recently, TowerJazz have announced plans to boost their China-based wafer fabrication production. Most of these new China-based foundry wafer fabs are scheduled to come online in late 2017 or in 2018. UMC began 40nm production at its 300mm joint venture China fab in November of 2016 and the company is planning to introduce 28nm technology into the fab in the second half of this year with additional expansion plans to come through the end of the decade.

It is well known that China is striving to develop an indigenous semiconductor industry but gaining access to the manufacturing technology has become increasingly difficult. As a result, many China IC companies and government entities have structured joint ventures or partnerships with foundry companies in order to access leading manufacturing technology. The partnerships give Chinese companies much needed access to production capacity using first-rate manufacturing technology and provide the foundries with an ongoing market presence and revenue stream within China.

Examples of pure-play foundries that are working to set up new manufacturing plants in China include,

- UMC is working with Fujian Jin Hua IC Company to construct a 300mm wafer fab in Fujian, China to manufacture DRAM using 32nm process technology developed by UMC.
- GlobalFoundries joined with the Chengdu Government in 1Q17 to begin building a 300mm wafer fab that will manufacture ICs using mainstream 130nm and 180nm processes. Completion is set for early 2018.
- TSMC started construction on a wholly owned \$3 billion fab in Nanjing, China that will serve as a foundry that manufactures ICs using 16nm technology. Production is scheduled to begin in 2H18.
- TowerJazz signed an agreement with Tacoma Semiconductor to construct a 200mm wafer fab, also in Nanjing, China. TowerJazz will have access to 50% of the capacity. Tacoma is responsible for the entire investment of the project.

Report Details: *The 2017 McClean Report*

Additional details on the IC foundry market and other trends within the IC industry are provided in *The McClean Report—A Complete Analysis and Forecast of the Integrated Circuit Industry* (released in January 2017). A subscription to *The McClean Report* includes **free** monthly updates from March through November (including the *Mid-Year Update*), and **free** access to subscriber-only webinars throughout the

year. An individual-user license to the 2017 edition of *The McClean Report* is priced at \$4,090 and includes an Internet access password. A multi-user worldwide corporate license is available for \$7,090.

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About IC Insights

IC Insights, Inc., based in Scottsdale, Arizona USA, is dedicated to providing high-quality, cost-effective market research for the semiconductor industry. Founded in 1997, IC Insights offers coverage of global economic trends, the semiconductor market forecast, capital spending and fab capacity trends, product market details, and technology trends, as well as complete IC company profiles and evaluations of end-use applications driving demand for ICs.

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