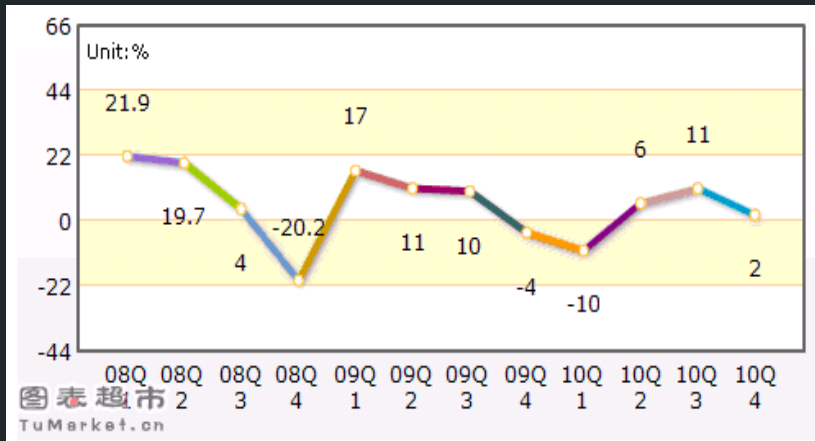


# Global and China Large-size TFT-LCD Industry Report, 2008-2009



The economic rebound in the first quarter of 2009 was mainly due to LCD TV. The economic recession of Europe and America will only make consumers reduce the consumption on such necessities in the late phase. Although Europe and America suffered economic recession, the market shares of LCD TV did not fluctuate much because of manufacturers' promotion strategies, WON depreciation and further development of LCD TV in the first quarter of 2009. With the push of China and other emerging countries, the market rebounded significantly. Japanese enterprises were panicked and reduced production greatly when economic recession arose, resulting in short supply. This strong rebound was still lack of powerful support, especially in emerging countries. In China, when the property market begins to rebound, real estate sales will promote the consumption on home appliances. In the mid and late rebound phase of the property market, consumers will wait and see, and real estate sales will decline, so that home appliances consumption will also drop. The unemployment rate is still rising in Europe and America and economic recession has not ended, so if consumers are aware of the fact, they will certainly cut expenditure.

## Quarterly Output Growth Rate of Global Large-size TFT-LCD, Q1 2008-Q4 2010E



Source: ResearchInChina

From Q1 2005 to Q4 2010, the fluctuation of TFT-LCD industry seems to be magnified, but the fact is not. The global economy has experienced the most significant recession since the Great Depression in 1929. TFT-LCD industry is the upstream of consumer electronics and IT industry, and the two industries always follow the trend of the global economy. Excluding external factors, the fluctuation of TFT-LCD industry is lessened, especially the extent of decline shrinks, which is because LCD TVs develop rapidly, IT industry is relatively stable and notebook computers develop well. Before 2000, 80% of TFT-LCDs were used in notebooks, thus on which TFT-LCD industry was highly dependent, and then TFT-LCD industry fluctuated a lot. In the future, LCD TV industry, Netbook industry and LED notebook industry will enter the mature stage, which will make TFT-LCD industry tend to fluctuate less, but on the other hand, the industry will lack growth momentum.

AUO							
	Glass Substrate	Color Filter	Polarizer	Backlight Module	Driver IC	CCFL Lamp	LED
Supported by	Same Plant	Self-made, CANDO	DAXON	Nano-OP, Forhouse	Raydium	Wellpower	LightHouse Technology
Rank	—	—	World No.5	World No.3	—	World No.2d in the World	—
Relationship	—	Share Holding	Share Holding	Share Holding	Share Holding	Share Holding	Investment
Chimei							
	Glass Substrate	Color Filter	Polarizer	Backlight Module	Driver IC	CCFL Lamp	LED
Supported by	Same Plant	Self-made	Chimei Materials	Chilin Technology	Hi max	—	Kellett
Rank	—	—	—	World No.2	World No.1	—	—
Relationship	—	—	Trans investment	Trans investment	Trans investment	—	Trans investment
BOE							
	Glass Substrate	Color Filter	Polarizer	Backlight Module	Driver IC	CCFL Lamp	LED
Relationship	Beijing Corning is responsible for back-end cutting	Some by Outsourcing	Outsourcing	Outsourcing	Outsourcing	Outsourcing	Outsourcing
Samsung							
	Glass Substrate	Color Filter	Polarizer	Backlight Module	Driver IC	CCFL Lamp	LED
Supported by	Samsung Corning	Self-made	ACE DIGITECH	Outsourcing	Self-made	—	—
Rank	World No.1	—	World No.4	—	World No.2	Outsourcing	Outsourcing
Relationship	Share Participation	—	Share Holding	—	—	—	—

TFT-LCD industry relies heavily on upstream raw materials and components. In the cost structure of TFT-LCD, upstream components account for 70-85%. Therefore, to be cost-efficient shall be supported by the strong upstream, but for Chinese enterprises, it is hard to do so. In many Chinese enterprises, including joint ventures, profit is often transferred to the upstream. In addition to glass substrates, Taiwan has nearly all of upstream industrial chains, which is the biggest driver for Taiwan's success in TFT-LCD industry. TFT-LCD industry can prompt a huge industrial chain. Japanese manufacturers occupy the top position in the industrial chain, and they usually sell their technology rather than products. Almost every Taiwanese manufacturer in the upstream industrial chain has received technical support from Japan, so do South Korea manufacturers. Taiwanese manufacturers' success lies in fast access to market through technology licensing, while Japanese manufacturers rely on supporting Taiwanese enterprises to combat South Korea rivals. Japanese manufacturers still master the upstream firmly.

Upstream components include Glass Substrate, Color Filter, Polarizer, Backlight Module, Driver IC, CCFL Lamp and LED.

As for non-key components, these companies have adequate resources, especially AUO and Chimei. Mainland China enterprises invest on the middle and downstream which brings production value fastest, but they neglect the efficiency and quality of the investment, and thus lack cost competitiveness.

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