

## TAIWAN

# TFT-LCDs

10 November 2008

### October sales and shipment data

	Sales (NT\$bn)	% ch MoM	% ch YoY
AUO	27.2	-21	-49
CMO	20.8	-31	-45
CPT	5.9	-25	-60
HannStar	3.1	-41	-63
Total	57.0	-27	-50

	Shipments (units, m)	% ch MoM	% ch YoY
AUO	6.4	-9	-19
CMO	4.9	-27	-19
CPT	1.6	-20	-40
HannStar	0.8	-47	-55
Total	13.6	-20	-26

	ASPs (US\$)	% ch MoM	% ch YoY
AUO	107	-19	-43
CMO	112	-11	-39
CPT	84	-4	-44
HannStar	92	-6	-39
Avg	105	-13	-41

Sales and shipments are consolidated for AUO and CMO. Shipment and ASP data relate to large panels only. CPT's results are for its TFT-LCD division only. NT\$/US\$=\$32.7. Source: Company data, Macquarie Research, November 2008

### Panel prices, 1H November 2008

Size (inches)		Price, avg (US\$)	Ch HoH (US\$)	% ch HoH	% ch MoM
<b>TV</b>					
42	WXGA	395	-5	-1	-4
37	WXGA	325	-5	-2	-4
32	WXGA	225	-5	-2	-8
<b>Monitor</b>					
19W	SXGA	75	-3	-4	-10
17	SXGA	70	-3	-4	-10
<b>NB</b>					
15.4W	WXGA	67	-3	-4	-8
14.1W	WXGA	64	-3	-4	-9

Indicative preliminary pricing for A-grade panels. Percentage change HoH is versus 2H of October 2008. Source: WitsView, Macquarie Research, November 2008

### Key stocks

	Stock code	Rating	Stock price (NT\$)	Target price (NT\$)	Upside (%)
AUO	2409 TT	OP	22.2	40.0	80
CMO	3009 TT	OP	11.9	20.4	71
CPT	2475 TT	OP	3.1	4.2	34
HannStar	6116 TT	OP	5.2	7.0	35

Source: Macquarie Research, November 2008

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## Oct large panel sales down 27% MoM

### Event

- The combined sales of the four dedicated TFT-LCD large-panel makers in Taiwan were down 27% MoM. Their blended large-panel ASPs were down 13% MoM, while shipments of large panels fell by 20% MoM. This should be below expectations due to both weaker shipments and ASPs.

### Impact

- Orders for panels are down due to demand concerns. Buyers prefer to minimise inventory ahead of uncertainties about how strong LCD TV sales will be over the upcoming holiday season in November and December.
- AUO's October sales results were at the extremes compared with peers. It had the smallest decrease at 21% MoM. However, it saw the largest blended ASP fall at 19% MoM, which was offset by the least decline in shipments at 9% MoM. We believe this was due to changes in product mix where there were proportionally less higher-ASP TV panel shipments due to order cancellations and more lower-ASP IT panel shipments.
- The other suppliers each saw their October large panel sales drop MoM by 20% or more because of lower capacity utilisation. Taiwanese panel makers had guided for utilisation rates to drop to 60-70% in 4Q08, down from 80-100% in 3Q08 (Figure 1).

### Outlook

- The outlook from here has very limited visibility. The big swing factor is the response in LCD TV demand to lower prices during the November and December holiday season. 4Q is the busiest sell-through period and usually accounts for about 40% of total TV end-demand for the year. Average retail prices for LCD TVs should be cheaper by 20-45% compared with mid-2008 and 30-50% a year ago (Figure 6). The nature of the sell-through will set the tone for demand and pricing elasticity for 2009.
- Panel prices should moderate their declines from here (Figure 7-10). Prices should fall by 10-15% QoQ in 4Q08, less than the fall of 12-26% in 3Q08. For November, we expect a decline of 5-10% MoM. Prices will not be finalised until the end of the month, as has been the case for the previous few months. Price declines are moderating as suppliers are producing near their cash COGS (Figure 2) and, consequently, are lowering utilisation rates.
- Meanwhile, the industry has reduced supply and capex (Figures 3 and 4) for both 2008 and 2009. We estimate that large panel supply growth by area will be down to a new historical low of 15-20% in 2009, down from 25-30% in 2008. Capex in 2009 will be down by 34%, based on our survey.
- Regionally, we have a Neutral view on the TFT-LCD sector due to weak demand related to macroeconomic issues.
- We are relatively more positive on Taiwanese TFT-LCD stocks because of lower valuations and better capex discipline. Our top pick is AUO, the blue-chip leader in Taiwan.

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**Fig 1 Margins and utilisation**

(%)	Gross margin, excl depreciation		Utilisation	
	3Q08A	4Q08E	3Q08A	4Q08E
AUO	27	20	80	70
CMO	24	17	80	60-70
CPT	19	6	90	60
HannStar	15	0	100	60

Source: Macquarie Research, Company data, November 2008

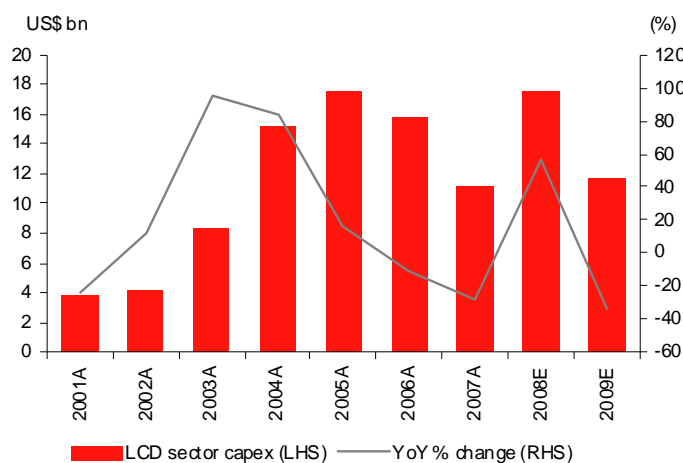
**Fig 2 Panel price vs cash cost**

Size (inches)	Resolution	Price, avg (US\$)	Cash cost (US\$)	Downside to cash cost (%)
<b>TV</b>				
42	WXGA	395	331	-16
32	WXGA	225	208	-8
<b>Monitor</b>				
19W	WXGA+	75	71	-5
17	SXGA	70	68	-3
<b>NB</b>				
15.4W	WXGA	67	62	-7
14.1W	WXGA	64	58	-9

Cash cost is based on cash cost of good sold

Source: Macquarie Research, Witsview, DisplaySearch, November 2008

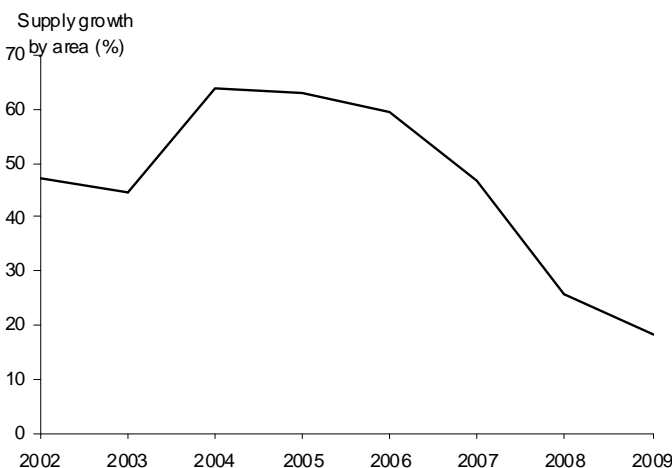
**Fig 3 Capex by major panel makers**



Composite of major panel makers include Sharp, SEC, LGD, AUO/QDI, CMO, CPT, HannStar and InnoLux

Source: Macquarie Research, November 2008

**Fig 4 Large panel supply growth by area**



Source: Macquarie Research, November 2008

**Fig 5 Capex of global major panel makers**

	2001A	2002A	2003A	2004A	2005A	2006A	2007A	2008E	2009E
Capex - global (US\$m)									
SEC	314	1,088	1,746	2,149	2,803	3,037	2,432	4,106	1,990
LPL	637	900	1,185	3,328	4,473	3,179	1,076	3,741	1,592
Sharp	455	575	1,410	1,256	1,344	1,758	1,945	2,286	2,286
AUO	414	522	1,142	2,451	2,505	2,682	1,982	3,043	2,941
CMO	686	401	1,005	1,842	2,019	3,889	3,149	3,043	1,412
CPT	761	310	735	1,689	1,770	290	390	482	588
QDI	357	345	450	573	1,922	400			
HannStar	147	85	529	1,060	439	272	105	76	59
InnoLux			41	813	351	288	134	848	735
Total	3,770	4,227	8,242	15,160	17,627	15,795	11,214	17,625	11,604
% ch	-25	12	95	84	16	-10	-29	57	-34
Capex/sales (x)									
SEC	0.19	0.45	0.40	0.28	0.30	0.25	0.15	0.23	0.12
LPL	0.34	0.32	0.23	0.46	0.45	0.29	0.07	0.25	0.11
AUO	0.37	0.24	0.37	0.49	0.37	0.30	0.14	0.21	0.18
CMO	1.41	0.34	0.56	0.60	0.43	0.68	0.35	0.27	0.11
CPT	0.43	0.14	0.28	0.48	0.55	0.07	0.08	0.12	0.14
QDI	23.23	0.76	0.56	0.33	1.00	0.18			
HannStar	0.32	0.10	0.55	0.91	0.23	0.14	0.04	0.03	0.03
InnoLux			nmf	6.36	0.22	0.09	0.03	0.15	0.09
Total	0.51	0.35	0.44	0.51	0.45	0.32	0.17	0.25	0.15

Capex includes purchase of manufacturing equipment, land, buildings and all other expenditure related to capacity expansion

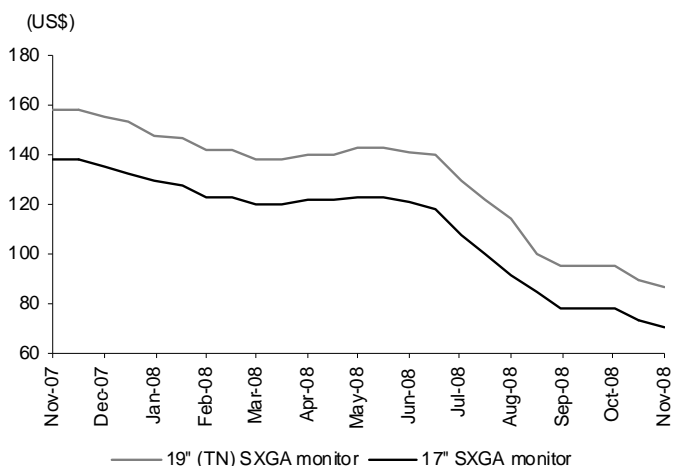
Source: Macquarie Research, Company data, November 2008

**Fig 6 US LCD TV retail price forecast, end-2008**

(US\$)	40/42"	32"
End-2008	799-999	399-499
Jul-08	1,263	734
Dec-07	1,410	798
% ch since July 08	Down 21-37%	Down 32-46%
% ch since Dec 07	Down 29-43%	Down 37-50%

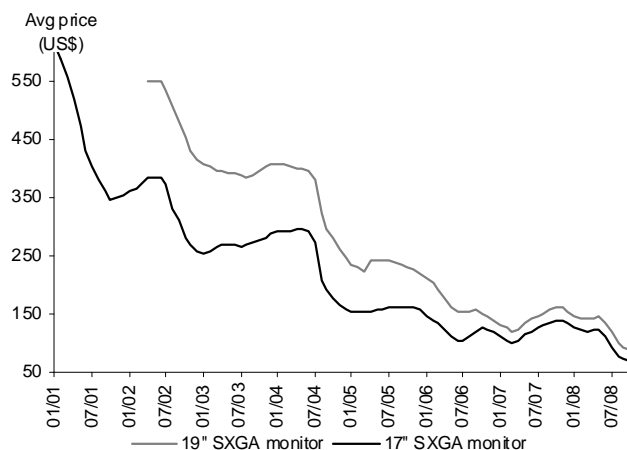
Source: Digitimes, DisplaySearch, Macquarie Research, November 2008

**Fig 7 Monitor panel prices, past 12 months**



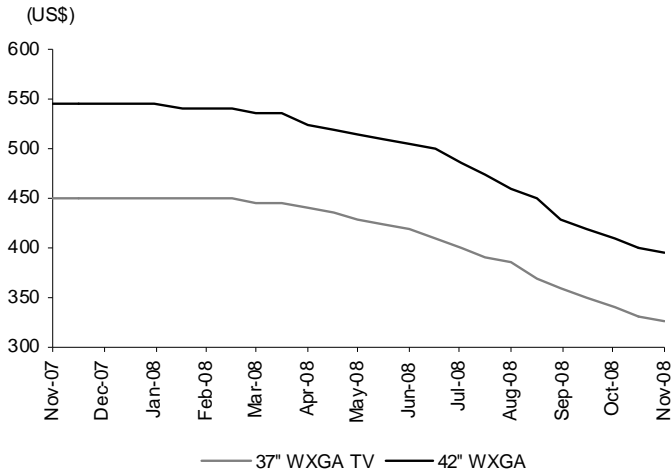
Source: WitsView, Macquarie Research, November 2008

**Fig 8 Monitor panel prices, since January 2001**



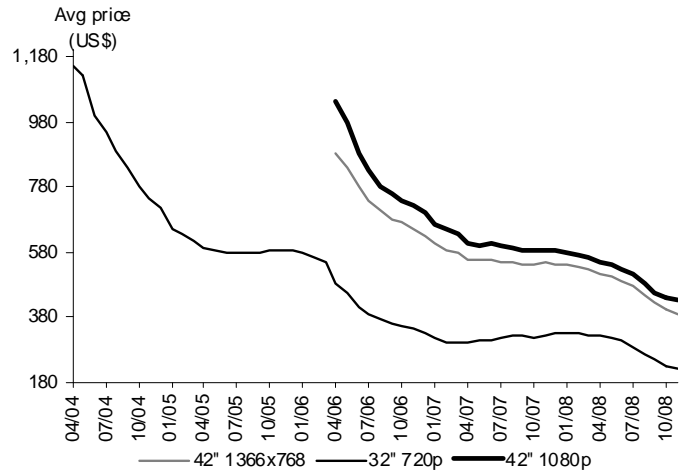
Source: DisplaySearch, Macquarie Research, November 2008

**Fig 9 TV panel prices, past 12 months**



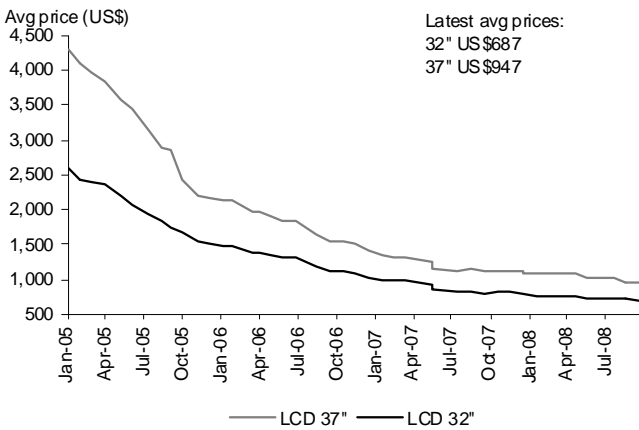
Source: WitsView, Macquarie Research, November 2008

**Fig 10 TV panel prices, since April 2004**



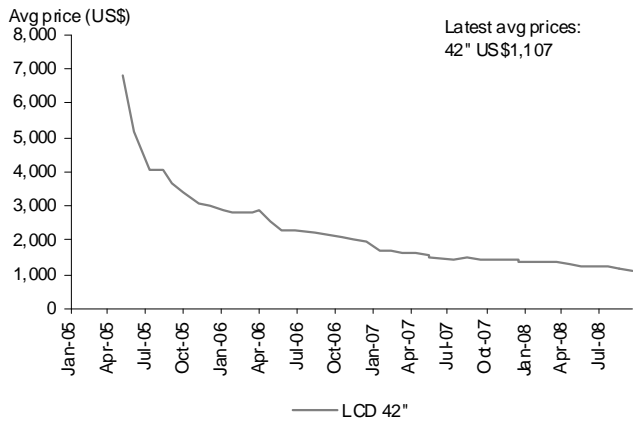
Source: DisplaySearch, Macquarie Research, November 2008

**Fig 11 32\"/>**



Source: WitsView, Macquarie Research, November 2008

**Fig 12 42\"/>**



Source: WitsView, Macquarie Research, November 2008

**Fig 13 Valuation comparison**

Stock code	Rating	Stock price (NT\$)	Market cap (US\$m)	Target price (NT\$)	2008				2009				
					P/BV (x)	ROE (%)	PER (x)	EPS ch (%)	P/BV (x)	ROE (%)	PER (x)	EPS ch (%)	
AUO	2409 TT	Outperform	22.2	5,753	40.0	0.6	12	4.7	-35	0.6	9	7.1	-34
CMO	3009 TT	Outperform	11.9	2,649	20.4	0.4	5	6.4	-65	0.4	4	11.3	-44
CPT	2475 TT	Outperform	3.1	904	4.2	0.4	-11	nmf	nmf	0.4	-15	nmf	nmf
HannStar	6116 TT	Outperform	5.2	875	7.0	0.5	-4	nmf	nmf	0.5	-5	nmf	nmf

Share prices are as of 7 November 2008.

Source: Macquarie Research, November 2008

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Recommendation definitions	Volatility index definition*	Financial definitions				
<p><b>Macquarie - Australia/New Zealand</b>            Outperform – return &gt;5% in excess of benchmark return (&gt;2.5% in excess for listed property trusts)            Neutral – return within 5% of benchmark return (within 2.5% for listed property trusts)            Underperform – return &gt;5% below benchmark return (&gt;2.5% below for listed property trusts)</p> <p><b>Macquarie – Asia/Europe</b>            Outperform – expected return &gt;+10%            Neutral – expected return from -10% to +10%            Underperform – expected return &lt;-10%</p> <p><b>Macquarie First South - South Africa</b>            Outperform – expected return &gt;+10%            Neutral – expected return from -10% to +10%            Underperform – expected return &lt;-10%</p> <p><b>Macquarie - Canada</b>            Outperform – return &gt;5% in excess of benchmark return            Neutral – return within 5% of benchmark return            Underperform – return &gt;5% below benchmark return</p> <p><b>Macquarie - USA</b>            Outperform (Buy) – return &gt;5% in excess of benchmark return            Neutral (Hold) – return within 5% of benchmark return            Underperform (Sell) – return &gt;5% below benchmark return</p> <p><b>Recommendations</b> – 12 months</p> <p><b>Note:</b> Quant recommendations may differ from Fundamental Analyst recommendations</p>	<p><b>Volatility index definition*</b>            This is calculated from the volatility of historical price movements.</p> <p><b>Very high–highest risk</b> – Stock should be expected to move up or down 60–100% in a year – investors should be aware this stock is highly speculative.</p> <p><b>High</b> – stock should be expected to move up or down at least 40–60% in a year – investors should be aware this stock could be speculative.</p> <p><b>Medium</b> – stock should be expected to move up or down at least 30–40% in a year.</p> <p><b>Low–medium</b> – stock should be expected to move up or down at least 25–30% in a year.</p> <p><b>Low</b> – stock should be expected to move up or down at least 15–25% in a year.            * Applicable to Australian/NZ/Canada stocks only</p>	<p>All "Adjusted" data items have had the following adjustments made:            Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives &amp; hedging, IFRS impairments &amp; IFRS interest expense            Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends &amp; minority interests</p> <p><b>EPS</b> = adjusted net profit / epwpa*  <b>ROA</b> = adjusted ebit / average total assets  <b>ROA Banks/Insurance</b> = adjusted net profit / average total assets  <b>ROE</b> = adjusted net profit / average shareholders funds  <b>Gross cashflow</b> = adjusted net profit + depreciation            *equivalent fully paid ordinary weighted average number of shares</p> <p>All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).</p>				
<b>Recommendation proportions – For quarter ending 30 September 2008</b>						
	<b>AU/NZ</b>	<b>Asia</b>	<b>RSA</b>	<b>USA</b>	<b>CA</b>	<b>EUR</b>
Outperform	43.17%	61.57%	63.08%	53.60%	71.54%	43.00%
Neutral	41.37%	16.43%	30.77%	37.60%	24.61%	48.00%
Underperform	15.47%	22.00%	6.15%	8.80%	3.85%	9.00%

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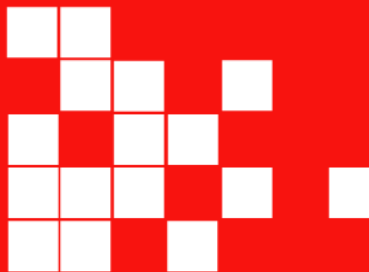
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