Deutsche Bank

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Taiwan LCD Sector

Still far too early to call a bottom

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Industry Update

Top picks	
AU Optronics (2409.TW),TWD19.50	Sell
CMO (3009.TW),TWD9.50	Sell

Companies featured			
AU Optronics (2409.TW),TWD19.50			**Sell**
	2007A	2008E	2009E
P/E (x)	7.0	4.3	–
EV/EBITDA (x)	3.5	1.9	7.7
Price/book (x)	1.7	0.5	0.6
CMO (3009.TW),TWD9.50			**Sell**
	2007A	2008E	2009E
P/E (x)	5.6	5.7	–
EV/EBITDA (x)	4.3	3.3	9.4
Price/book (x)	1.4	0.6	0.7
Innolux (3481.TW),TWD16.60			**Hold**
	2007A	2008E	2009E
P/E (x)	18.9	6.1	9.9
EV/EBITDA (x)	11.4	2.4	4.2
Price/book (x)	3.2	0.6	0.6

Trimming estimates for AUO and CMO, maintain Sell; Hold Innolux
With the Christmas shopping season set to start later this week, we have reviewed the major components of our LCD thesis in light of deepening production cutbacks. We conclude that there are still far too many negatives to call for a bottoming of the Taiwan LCD sector. We also trim earnings for both AUO and CMO to reflect the deeper-than-forecast utilization cuts. Although the potential downside to these stocks has narrowed, we believe there are too many negatives for sentiment to bottom out in the near term.

Production cutbacks have grown even deeper, fab pushbacks starting
Our channel checks indicate that utilization rates for most Taiwanese LCD makers have fallen to or below the 50% range as end markets continue to decelerate and integrated panel makers further cut external orders. At the same time, capex pushbacks have become more tangible at both CMO and AUO. We have factored both the greater levels of underutilization and the fab pushbacks in our earnings estimates and modestly trimmed forecasts for both companies. Although production cutbacks have begun to expand to Korea and Japan, we believe that the total industry output is on track to expand an additional 20% in 2009. Given decelerating demand and the growing degree of underutilization in the industry, we believe chances for recovery before 2H09 are remote.

Negative factors continue to mount
With the Korean won now above 1,500 to the US$ and LCD panel pricing resuming its previous declines, earnings estimates for the Taiwanese panel makers will continue to move lower, diminishing hopes that sentiment will bottom in the near term. With markets and consumer sentiment both continuing to deteriorate, a severe shortfall in Christmas sales is likely.

Panel makers' forecasts remain far too high
The LCD makers' aggregate shipment forecasts call for a sequential decline of just 1% in 1Q09, followed by 16% sequential unit growth in both 2Q09 and 3Q09. We believe that this is wishful thinking based more on how much capacity these companies have to fill rather than how much the market can actually absorb.

Market share battles raise risks of inventory overhang
In addition to the overoptimistic forecasts of panel makers, we believe market share battles raise the possibility of TV inventory problems heading into next year. Market share battles are ongoing between 'big box' discount retailers and traditional electronics retailers, as well as between top-tier and third-tier brands. Given the market share shifts, the chances of miscalculation are great.

Valuations growing more compelling, but recovery will be very slow
Based on our chosen valuation methodology of applying respective trough PB multiples to 4Q09 book values, we have lowered our PTs on AUO and CMO by 3.9% and 6.8%, respectively, to NT$17.17 and NT$9.41. Our TPs imply downside potential of 12% for AUO and 1% for CMO – although we believe CMO's high gearing and greater Tier-3 TV brand exposure justify a Sell rating. Upside risks to our bearish thesis are a significant rebound of the Korean won, a bounceback in LCD panel pricing and strong price elasticity of demand among consumers.

Taiwan LCD sector

Far too early to call a bottom

A number of value investors have begun to ask what it might take for us to become more constructive on the battered LCD stocks. With Black Friday around the corner and the popular press trumpeting LCD TV bargains, we review our thesis on the LCD industry in light of resumed pricing pressure and production cutbacks. We also review recent pricing and volume data for the industry, as well as currency movements. Finally, we look at producers' expectations for a recovery.

Our bearish thesis remains unchanged since our launch on the sector in September, with the major factors being:

- Captive to the consumer: The LCD sector is increasingly captive to the consumer, due to the growing portion of sales that go into TVs.
- Economically sensitive demand: Consumer demand for LCD TVs is likely to be deeply disappointing, due to the highly discretionary nature of their demand.
- Supply inertia: We have yet to see the surge of upcoming new capacity which the windfall profits of 3Q07-2Q08 inspired producers to build.
- Another leg down: The LCD cycle is likely to suffer a second leg down in 1H09 as the bulk of new capacity under construction will come on line as scheduled.
- Taiwan is worst hit: The Taiwanese panel makers will be the worst hit globally, due to both the weak Korean won and the lack of in-house TV panel demand.

While we have yet to see the affect of all of these factors, the impact thus far seen has been significantly worse than we had previously forecast. Most notably, we have seen steeper pricing erosion and deeper levels of underutilization than we had originally called for. Thus, we again trim our estimates for all three LCD makers under our coverage.

Although the Taiwanese LCD stocks are trading near record-low PB multiples and have attracted a significant amount of interest from value investors recently, we believe it is far too early to begin bottom-fishing. Given how DRAM stocks in Taiwan have fallen through previous valuation floors this year with nary a pause, we are reluctant to try to pick a bottom on the basis of valuation alone. Rather, we prefer to focus on what are likely to be the major factors which should shape sentiment toward the group over the next 2-3 quarters. We believe that the most likely factors are:

- Christmas sales of TVs in the US and Europe
- The possibility of TV inventories as we enter 2009
- The direction of the Korean won
- The commencement of production at new fabs currently under construction
- The direction of panel pricing as the above factors influence the market

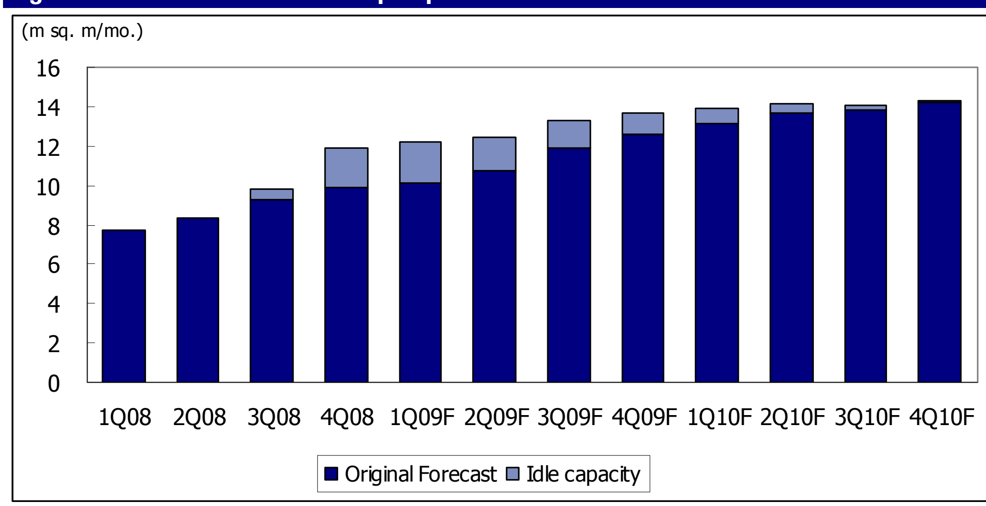
As we expand upon in the following sections, we see a greater chance of these factors negatively impacting sentiment towards the group rather than positively affecting sentiment in the coming months. Thus, we remain bearish and maintain our current Sell ratings on AUO and CMO – the two companies most highly geared to the merchant panel market. We have retained our Hold rating on Innolux due to its low panel self sufficiency ratio as well as growing evidence that the trend toward outsourcing LCD TV assembly is gaining momentum.

Production cutbacks are deepening

We see both signs of increasing production cuts in the industry and some pushbacks of upcoming new capacity. Our channel checks indicate that plummeting orders in Taiwan have driven capacity utilization levels for most LCD makers down to or below the 50% level. There have been numerous unconfirmed reports that panel makers have even closed fabs as they seek to consolidate the rest of their production in a smaller number of plants for efficiency reasons. We have been encouraged to hear that production cutbacks are being undertaken now in China, Japan and Korea. However, we see these cutbacks as inadequate to stem price erosion any time soon. First, we believe that production cutbacks by Sharp in Japan and by both LG Display and Samsung in Korea have only been in the order of 10%. Moreover, it appears that all of these production cuts have been reactive (rather than proactive), and reflective of the extremely sharp decline in demand rather than a concerted effort to try to stem the oversupply. Third, due to the underlying issues of the weak won and these three vendors' strong in-house TV panel demand, we would expect to see full production resume at these producers before the Taiwanese utilization levels even begin to recover. Lastly, there is some indication that Sharp's cutbacks occurred only after it had overproduced for quite some time, and that the company is now sitting on significant inventories.

As for capex pushbacks, channel checks indicate that AUO, CMO and Innolux have all reduced or postponed their scheduled installations of new production capacity for 2009. We believe that AUO has postponed the production ramp-up at their L12 8G fab from 2Q09 to 3Q09. However, it appears that the production capacity of the first module has not been changed. Meanwhile, CMO has reduced the planned capacity of the first production module of their G8 Fab 8 from 30K motherglasses per month to just 5K. Innolux has twice reduced the production capacity of their forthcoming 6G, first from 90K per month to 60K, and more recently from 60K to 30K. The fact that these pushbacks are not more dramatic reflects our prior view that the LCD makers have a strong incentive to bring on line at least some of their next-generation capacity as soon as possible in order to begin learning the process and bring up production yield rates early.

Figure 1: Production cuts and capex pushbacks

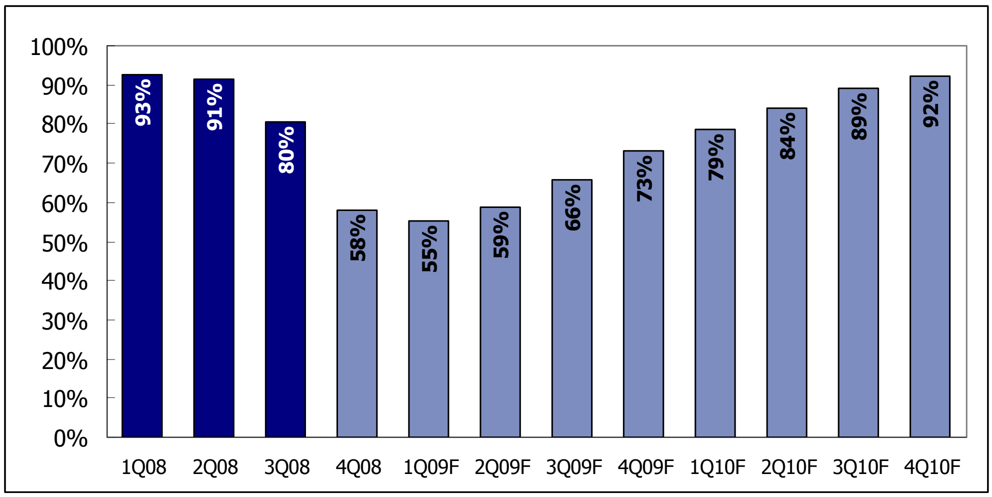


Source: Deutsche Bank

The net impact of both these production cuts and the capex pushbacks fall short of a level that we would find encouraging. We estimate that the three new fab pushbacks will diminish new capacity coming on line in 2009 by only 7.7%, and total 2009 capacity by just 1.8%. The production cutbacks are only modestly more significant. Even assuming that cutbacks at Samsung, LG Display and Sharp continue through 1Q09 (a highly debatable assumption), we see 2009 output falling only about 14%. Factoring in both this scenario and the capex pushbacks in Taiwan, industry capacity growth would still be roughly 20% YoY – the same growth rate that tipped the LCD market into oversupply this year.

An additional reason for caution on the Taiwanese LCD makers is that they are likely to be the last in the industry to recover. Unless the Korean won suddenly reverses course, Samsung and LG Display will continue to have both a significant cost advantage over the Taiwanese producers, and the benefit of strong in-house panel demand. Although Japanese companies will indeed face more currency headwinds than the Taiwanese, companies like Sharp and Hitachi will nonetheless be able to recover more quickly due to their strong in-house consumption of panels. Even the Chinese LCD makers are likely to pick up earlier than the Taiwanese because of their no-VAT advantage while selling on the domestic market.

Figure 2: Taiwan LCD sector – Average utilization rates



Source: Deutsche Bank

Given the above factors, the current degree of oversupply, the 'supply inertia' in this industry and the likelihood of weak consumer demand next year, we believe the Taiwanese producers are looking at a long, slow ascent toward the 90%+ utilization rates they enjoyed just two quarters ago.

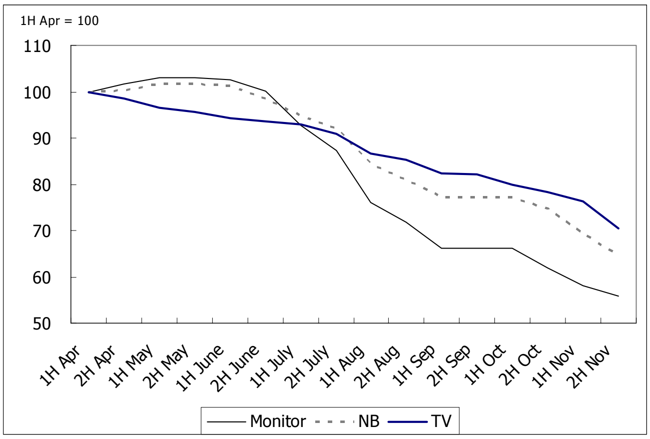
The won continues to slide

The current cyclical downturn is just two quarters old, and it already appears to be certainly the worst downcycle the Taiwanese LCD makers have ever experienced. If we had to choose just one factor that has made the situation so gloomy, it would be that the lapse in oversupply has coincided with the crash of the Korean won. The won has underperformed the NT dollar by almost 60% YTD – nearly 24% of that in the current quarter alone. Even if the won stabilizes at the current levels, there would be no relief for the Taiwanese LCD makers until the currency reverses course substantially. While even a modest turn in the won could prove to be a catalyst for the Taiwanese LCD makers' shares from current levels, it is difficult to understand how the 60% gap (that has opened up YTD) could narrow substantially without any international intervention.

Price declines have resumed

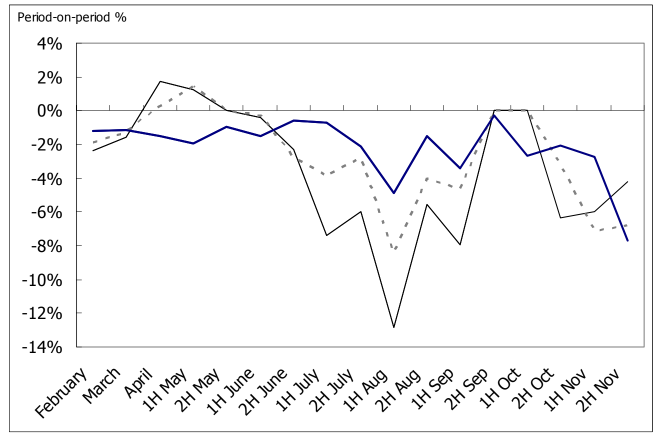
Another negative factor facing investors looking for a bottoming in LCD stocks is that prices have resumed their descent, following a brief respite in October. Not only had we forecast that prices would resume falling after a bout of stability, but we had also expected that TV prices would become the primary area of weakness heading into 2009.

Figure 3: LCD prices



Source: DisplaySearch

Figure 4: LCD price declines



Source: DisplaySearch

Until price declines slow, predicting the magnitude of losses for the Taiwanese players will remain challenging and make it difficult for investor sentiment toward these stocks to bottom.

Consumer outlook continues to deteriorate

Although the mounting global financial crisis has deepened our already pessimistic view of North American and European consumers, we fear that there are still many who seem to believe that TV buyers will respond aggressively to falling prices – including members of the popular press and (as we discuss in the next section) the LCD panel makers themselves. It seems unlikely that sentiment will truly bottom out until such optimists see evidence that runs counter to their view. We believe that the LCD market will deliver such evidence in the form of: 1.) very poor Christmas sell-through (and probably an inventory overhang going into 2009), and 2.) the industry's supply-demand balance eroding further in 1H09.

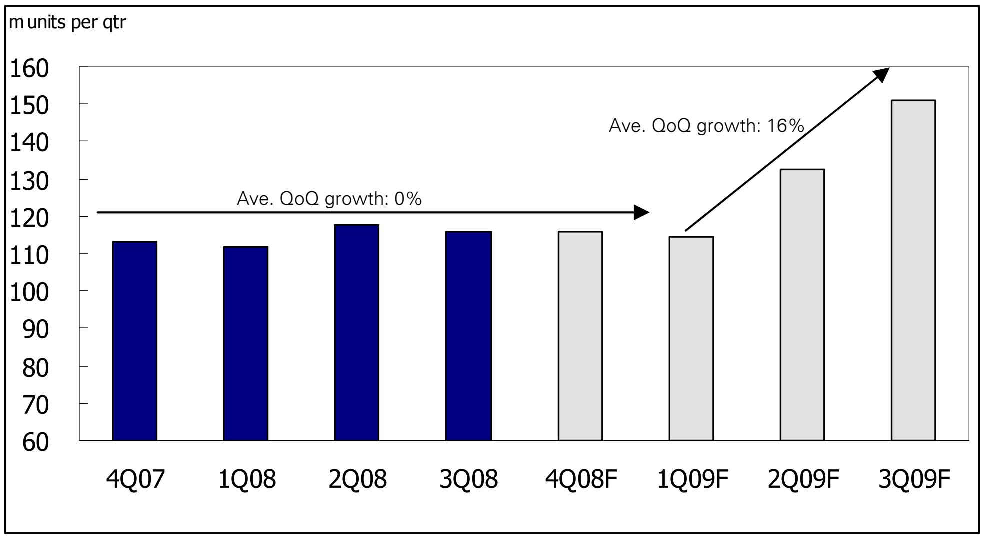
Indications that this Christmas shopping season will be a weak one include: 1.) a sharp decline in foot traffic at major electronics retailers in recent weeks, 2.) no rebound in US auto sales even though gas prices have halved, and 3). the precipitous decline in G8 consumer confidence numbers. We believe families in Western markets have the flexibility to contract their holiday expenditures quite dramatically, and that many will. Thus, we disagree with recent assertions that US Christmas sales will fall only by a low single-digit percentage. We believe that frugality will likely prevail this holiday, and that big-ticket items like TVs will be generally eschewed.

Although some have asserted that the deceleration in electronics retailers' orders have been sufficient to avert any end-of-year inventory overhang, we believe that the chances of an inventory problem are more than 50-50. In addition to the concerns over consumers highlighted above, we see two different ongoing market share battles which could easily result in some vendors and/or retailers holding the bag at year's end. First, there is the battle between the top-tier brands (Sony and Samsung), aggressively fighting to reclaim market share that they had lost in recent years to third-tier brands. The second market share battle is between traditional electronics retailers (Best Buy, Circuit City and Radio Shack in the US) and the 'big-box' discount retailers (Wal-Mart and Target). Given the market share shifts between all four camps and the memories of how well LCD TVs sold last year, we believe that the margin for miscalculation is great.

Producer expectations are way too high

Another reason why we believe that it is too early to call a bottom in the LCD sector is because the producers themselves are still too bullish. We warned in our sector launch report in September that memories of the last two downturns (which were both short and shallow) were likely to lead producers to be too bullish heading into 2009. Judging by their cumulative unit forecasts, that would seem to be the case.

Figure 5: Panel makers' unit forecasts



Source: DisplaySearch

According to DisplaySearch, the panel makers expect their cumulative large-size panel shipment (for TVs, notebooks and monitors combined) to be down just 1% sequentially in 1Q09, and then unit growth to reaccelerate to 16% sequentially in each of the next two quarters. We believe that such an optimistic view of 2009 runs counter to all conventional economic wisdom at the moment and has much more to do with the amount of capacity that these companies have to fill rather than how much the market is actually able to absorb.

Perhaps the logic behind these forecasts is that price elasticity of demand will prove as strong in the current environment as it was in recent years. However, as we argued in our sector launch report in September, discretionary, big-ticket consumer electronics sales plummet in times of consumer retrenchment in spite of steep price declines – as evidenced by sales of radios during the Great Depression. Our fears of flagging price elasticity of demand were echoed by DisplaySearch, whose recent analysis asserted that the old formula of oversupply being self-healing through high price elasticity seems to have broken down.

Valuation

Our chosen valuation metric for AUO and CMO continues to be to apply their record-low price-to-book value multiples to their forecast 4Q09 BVPS. We believe this is appropriate as investors in this sector will likely look at PB until a return to profitability becomes more visible. However, given the likely length of the current downturn, we believe that it is also necessary to incorporate the book value impact of the next year's losses in doing so. For

AUO, our NT$17.17 target price is the product of the stock's 0.55x record-low PB multiple and our forecast 4Q09 BVPS of NT$31.39. For CMO, our NT$9.41 target price is the product of the stock's 0.36x record-low PB multiple and our forecast 4Q09 BVPS of NT$25.70. These targets imply downside potential of 12% for AUO and 1% for CMO. Despite the relatively modest downside to our price target for CMO, we believe that the company's higher net gearing (74% vs. AUO's 19%) as well as CMO's exposure to the US Tier-3 TV market via Westinghouse Digital Electronics implies significantly greater risk and justifies our Sell rating.

Company specific risks

AU Optronics

Our bearish investment thesis is vulnerable to a reversal in the Korean won, the possibility that the LCD makers may be able to more aggressively push back their new capacity investments, or that producers could maintain utilization cuts to the point where prices stabilize. There is also the risk that the global macro environment will bottom sooner than we currently expect, and that consumers will respond enthusiastically to lower TV and monitor prices.

CMO

Our bearish investment thesis is vulnerable to the possibility that the LCD makers may be able to more effectively push back their new capacity investments, or that producers could maintain utilization cuts to the point where prices stabilize. There is also the risk that that the global macro environment will bottom sooner than we currently expect, and that consumers will respond enthusiastically to lower TV and monitor prices.

Innolux

The primary upside risks to our relatively cautious investment thesis are that recent production cut-backs, delays in new capacity additions, and/or surprisingly resilient consumer demand for TVs could result in a sooner-than-expected return to LCD supply-demand equilibrium. The downside risks include an inter-Group rivalry over TVs, a failure to win more touch-panel customers, a further unwinding of the Hon Hai Group premium, or a longer-than-expected downturn in LCDs.

Appendix 1

Important Disclosures

Additional information available upon request

Disclosure checklist			
Company	**Ticker**	**Recent price***	**Disclosure**
AU Optronics	2409.TW	19.50 (TWD) 25 Nov 08	2,6
CMO	3009.TW	9.39 (TWD) 24 Nov 08	6,14
Innolux	3481.TW	16.95 (TWD) 24 Nov 08	8

*Prices are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank and subject companies.

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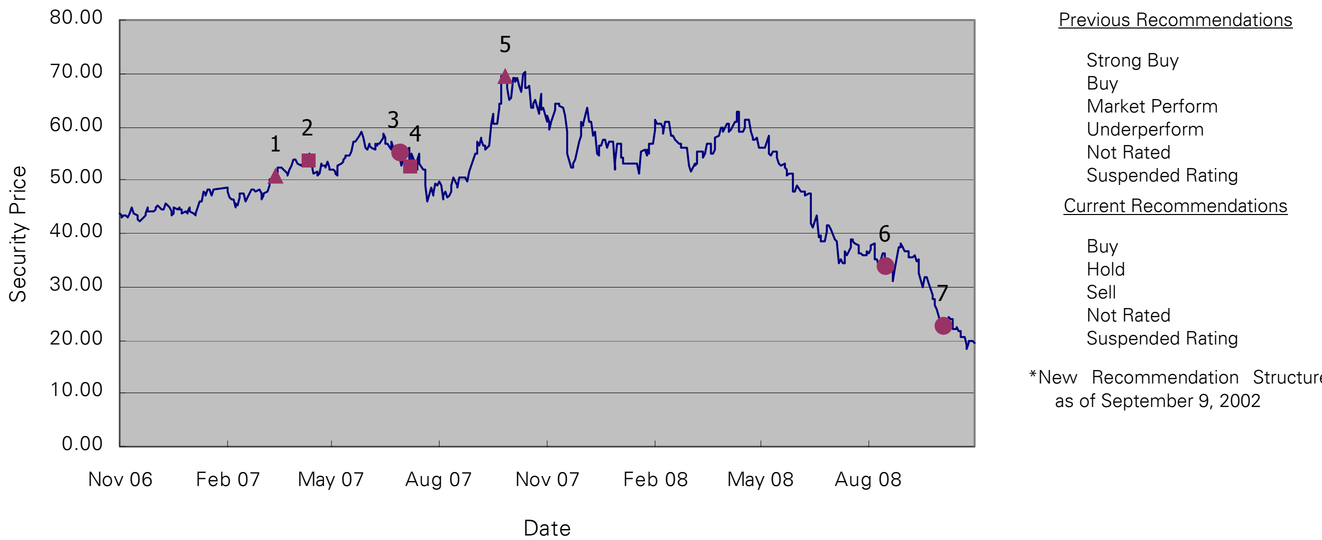
Historical recommendations and target price: AU Optronics (2409.TW)

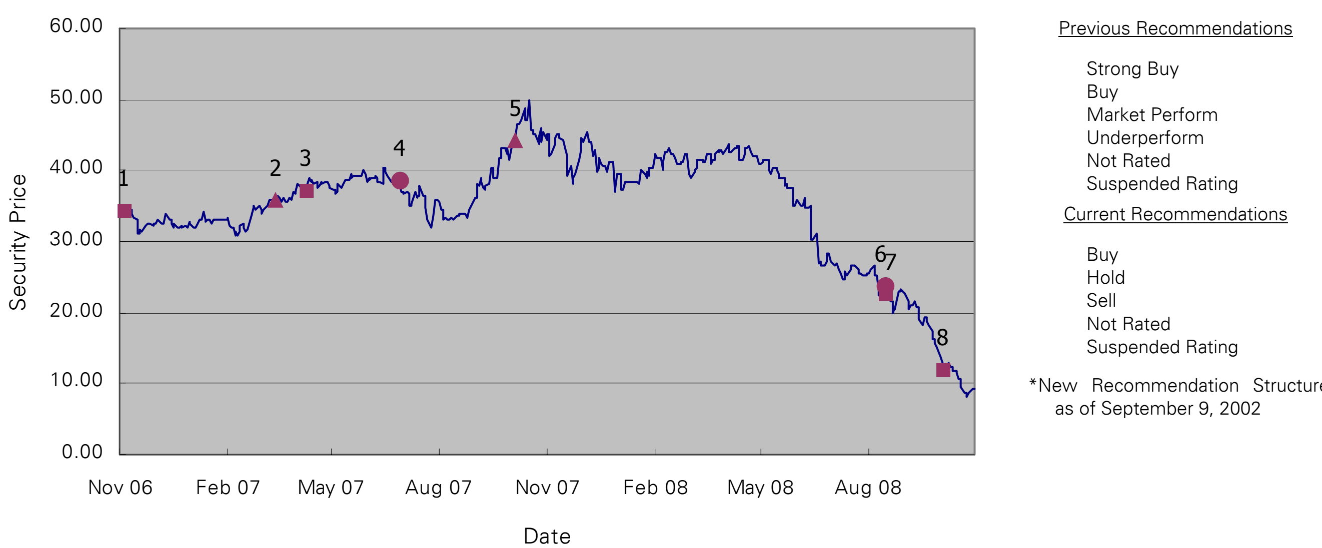
(as of 11/25/2008)



1.	9/4/2007:	Upgrade to Buy, Target Price Change TWD56.00	5.	22/10/2007:	Upgrade to Buy, Target Price Change TWD82.00
2.	5/5/2007:	Buy, Target Price Change TWD63.00	6.	10/9/2008:	Downgrade to Hold, Target Price Change TWD33.80
3.	23/7/2007:	Downgrade to Hold, Target Price Change TWD48.00	7.	29/10/2008:	Downgrade to Sell, Target Price Change TWD17.95
4.	1/8/2007:	Hold, Target Price Change TWD54.00			

Historical recommendations and target price: CMO (3009.TW)

(as of 11/25/2008)



1.	30/11/2006:	Hold, Target Price Change TWD33.00	5.	30/10/2007:	Upgrade to Buy, Target Price Change TWD62.00
2.	9/4/2007:	Upgrade to Buy, Target Price Change TWD42.00	6.	9/9/2008:	Downgrade to Sell, Target Price Change TWD28.50
3.	4/5/2007:	Buy, Target Price Change TWD45.00	7.	10/9/2008:	Sell, Target Price Change TWD20.70
4.	23/7/2007:	Downgrade to Hold, Target Price Change TWD35.00	8.	30/10/2008:	Sell, Target Price Change TWD10.10

Historical recommendations and target price: Innolux (3481.TW)

(as of 11/25/2008)

Previous Recommendations

- Strong Buy
- Buy
- Market Perform
- Underperform
- Not Rated
- Suspended Rating

Current Recommendations

- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

*New Recommendation Structure as of September 9, 2002

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   Sell: Expected total return (including dividends) of -10% or worse over a 12-month period

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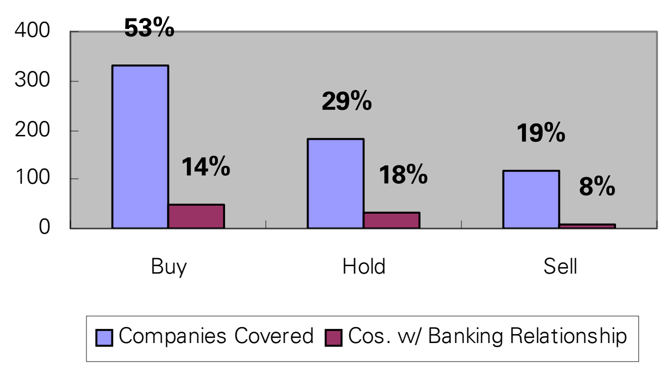

Asia-Pacific Universe

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