

## Formosa Petrochemical Corp

Reduce holdings ahead of new Ethylene capacity

- **Still too expensive on a regional basis:** FPCC is currently trading at 2.3x BV, or at a significant premium to its Asian petrochem and refining peers. With 3m tons of new Ethylene capacity coming on-stream in the next two months from the Middle East and China, we foresee further pressure on Ethylene spreads in 2Q09 after the recent rebound in 1Q. We advise investors to reduce holdings ahead of the new capacity.
- **4Q losses estimated to be NT\$23B:** We are now forecasting 2008 year-end profit to be NT\$26B, or -63% from 2007, on the back of an extremely weak 4Q08. Since J.P. Morgan's 2009 global average crude oil forecast is \$43/bbl, we do not expect a significant correction in product prices this year. However, we lower our 2009 net profit forecast to NT\$30B as we have assumed the GRM will drop by 26% in 2009 and Ethylene spreads will trade near cycle-trough levels.
- **No longer a yield play:** FPCC paid out 89% of 2007 profits in 2008 in cash. Based on the losses incurred in 4Q08 and the bearish outlook for 2009, we now expect FPCC to pay out 70%-80% of 2008 net profit, with a maximum 80% of that to be in cash and the rest in the form of bonus shares. In this scenario, FPCC's maximum cash dividend yield would only be 3.1%, based on today's share price.
- **Our new Dec-09 PT of NT\$46 is based on 1.8x 2009E BV,** which is lower than the historical trough value for FPCC. As the company's shares only started to trade in late 2003, the previous trough valuation of 2.2x BV may not be a useful guide as the stock has not traded in either a bear market or Ethylene cycle-trough. 1.8x BV is a 10% discount to the PT valuation of Reliance Industries of India, the most comparable peer in Asia. Major upside risks to our PT include significant new Ethylene plant start-up delays and share buybacks by the Formosa Group itself.

### Underweight

6505.TW, 6505 TT

Price: NT\$56.30

▼ **Price Target: NT\$46.00**  
Previous: NT\$61.00

#### Taiwan

#### Petrochemicals

**Samuel Lee, CFA**<sup>AC</sup>

(852) 2800-8536

samuel.sw.lee@jpmorgan.com

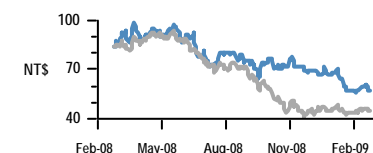
**Brynjar Eirik Bustnes**

(852) 2800-8578

brynjar.e.bustnes@jpmorgan.com

J.P. Morgan Securities (Asia Pacific) Limited

#### Price Performance



	YTD	1m	3m	12m
Abs	-15.6%	0.4%	-17.1%	-31.9%
Rel	-13.1%	-5.0%	-24.5%	14.1%

#### Formosa Petrochemical Corp (Reuters: 6505.TW, Bloomberg: 6505 TT)

NT\$ in mn, year-end Dec	FY06A	FY07A	FY08E	FY09E	FY10E		
Revenue	529,566	699,315	848,270	491,526	582,119	52-week Range (NT\$)	101.00 - 55.20
EBITDA	75,902	103,892	69,040	68,830	67,348	Mkt Cap (NT\$ mn)	520,691
Net Profit	44,476	69,611	25,861	29,611	32,078	Mkt Cap (\$ mn)	14,997.7
EPS (NT\$)	4.81	7.53	2.80	3.06	3.16	Shares O/S (mn)	9,249
DPS (NT\$)	4.70	4.40	6.70	1.79	1.96	Price (NT\$)	56.30
Sales growth (Y/Y%)	19%	32%	21%	-42%	18%	Date Of Price	24 Feb 09
EPS growth (Y/Y%)	-25%	57%	-63%	10%	3%	Free float (%)	14.2%
ROCE (%)	15%	20%	8%	9%	10%	3-mth trading value (NT\$ mn)	226.78
ROE (%)	21%	29%	11%	13%	13%	3-mth trading value (\$ mn)	6.53
P/E (x)	11.7	7.5	20.1	18.4	17.8	3-mth trading volume (mn)	3.78
P/B (x)	2.4	2.0	2.3	2.3	2.2	TSE	4,478
EV/EBITDA (x)	9.0	6.3	9.9	8.6	8.4	Exchange Rate	34.72
Div yield (%)	8%	8%	12%	3%	3%	Fiscal Year End	Dec

Source: Company data, Reuters, J.P. Morgan estimates.

See page 11 for analyst certification and important disclosures, including non-US analyst disclosures.

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## FPCC still too expensive

**FPCC is still expensive in relative terms despite the YTD underperformance. We prefer SK Energy and Reliance Industries in refining**

From the beginning of the year to Feb 20, FPCC underperformed both Formosa Plastics (-18%) and TWSE index (-9%). We believe this underperformance will continue as FPCC's valuation remains expensive relative to either petrochemicals or refiners within Asia, across various measures such as P/E, EV/EBITDA and P/BV, as highlighted in Table 1. In particular: 1) we believe petrochemicals are just entering into the Ethylene cycle-trough that could last until 2010, which means companies should trade nearer to trough valuations and; 2) we estimate the maximum cash yield based on today's closing share price at only 3.1%, much lower than the historical average. Our new Dec-09 PT of NT\$46 implies 18% downside from the current share price.

In terms of refining opportunities, we see better value in SK Energy of Korea and Reliance Industries of India, due to their upstream exposure and lower valuation. While we are bearish on petrochemicals, we like Formosa Plastics in Taiwan and LG Chem in Korea best due to their PVC exposure and more diversified income stream.

### Near-term pressure remains

In the near term, we believe the recent unexpected outage of its #3 Ethylene cracker for up to one month and a cutback in refining operating rates due to weak gasoline markets in Asia will weigh on FPCC shares. Negative share catalysts include Ethylene spread pressure from the start-up of the new Ethylene crackers in the Middle East and China in the next two months.

Table 1: Regional refining and petrochem valuation

Priced as of February 20, 2009

Company	Ticker	Country	Price	Rating	PT	Mkt Cap	EV	P/E	EV/EBITDA	P/BV	Yield	ROE%	D/E%						
	BBG					USD Mn	USD Mn	2008E	2008E	2008E	2008E	2008E	2008E						
<b>Refineries</b>																			
Thai Oil	TOP TB	Thailand	25.50	OW	62	1,459	2,101	232.5	3.6	8.9	2.9	0.9	0.8	11%	11%	0%	23%	85%	41%
PTTAR	PTTAR TB	Thailand	9.90	N	20	823	2,137	30.9	2.5	9.8	3.7	0.5	0.4	0%	15%	1%	18%	90%	69%
ESSO	ESSO TB	Thailand	4.56	UW	4.4	155	706	7.6	5.3	5.7	3.7	0.5	0.5	11%	7%	7%	10%	99%	69%
SK Energy	096770 KS	Korea	73,700	OW	100,000	5,448	9,038	7.5	6.3	7.4	5.5	0.9	0.8	3%	3%	13%	14%	134%	96%
S-Oil	010950 KS	Korea	53,500	N	64,000	3,664	3,950	13.9	7.1	7.3	4.1	1.7	1.5	7%	8%	12%	23%	72%	64%
GS Holdings	078930 KS	Korea	26,950	NR	-	1,707	-	27.7	7.6	NM	NM	0.9	0.9	4%	3%	14%	3%	-	-
Singapore Pet	SPC SP	Singapore	2.74	NR	-	903	1,071	5.4	8.1	3.4	4.7	0.7	0.8	21%	11%	24%	17%	22%	2%
Shell Malaysia	SHELL MK	Malaysia	9.05	NR	-	746	804	12.9	9.8	5.9	7.4	1.4	1.4	10%	6%	19%	14%	14%	4%
Reliance Industries	RIL IN	India	1,254	OW	1,600	36,518	40,613	9.4	12.8	7.5	7.1	2.9	2.1	1%	1%	36%	19%	57%	24%
Reliance Petroleum	RPET IN	India	78	N	94	7,054	9,556	0.0	0.0	0.0	0.0	2.6	2.6	0%	0%	0%	0%	78%	94%
IOC	IOCL IN	India	453	N	475	10,821	14,979	7.8	12.4	8.0	6.3	1.3	1.2	1%	2%	18%	10%	86%	98%
HPCL	HPCL IN	India	296	UW	240	2,024	4,473	7.4	21.0	10.0	5.9	0.9	0.9	1%	1%	13%	4%	161%	171%
BPCL	BPCL IN	India	412	UW	355	2,988	3,632	10.5	24.6	7.4	5.0	1.3	1.2	1%	1%	13%	5%	129%	104%
<b>FPCC</b>	<b>6505 TT</b>	<b>Taiwan</b>	<b>57.40</b>	<b>UW</b>	<b>48</b>	<b>15,237</b>	<b>18,924</b>	<b>20.5</b>	<b>18.7</b>	<b>10.0</b>	<b>9.1</b>	<b>2.4</b>	<b>2.3</b>	<b>12%</b>	<b>3%</b>	<b>11%</b>	<b>13%</b>	<b>67%</b>	<b>54%</b>
Shanghai Petrochem	338 HK	China	1.92	NR	-	4,948	5,063	NM	12.3	NM	12.8	0.6	0.7	6%	1%	12%	NM	32%	31%
<i>Average Refineries</i>								<b>28.1</b>	<b>10.1</b>	<b>7.0</b>	<b>5.6</b>	<b>1.3</b>	<b>1.2</b>	<b>6%</b>	<b>5%</b>	<b>13%</b>	<b>12%</b>	<b>80%</b>	<b>66%</b>
<b>Petrochemicals</b>																			
FCFC	1326 TT	Taiwan	36.00	UW	39	5,709	5,352	6.2	9.2	9.0	11.4	0.7	0.7	13%	9%	12%	8%	24%	23%
<b>FPCC</b>	<b>6505 TT</b>	<b>Taiwan</b>	<b>57.40</b>	<b>UW</b>	<b>48</b>	<b>15,237</b>	<b>18,924</b>	<b>20.5</b>	<b>18.7</b>	<b>10.0</b>	<b>9.1</b>	<b>2.4</b>	<b>2.3</b>	<b>12%</b>	<b>3%</b>	<b>11%</b>	<b>13%</b>	<b>67%</b>	<b>54%</b>
Nan Ya Plastics	1303 TT	Taiwan	33.15	UW	40	7,254	7,958	8.3	9.1	11.2	13.2	0.9	0.8	10%	9%	10%	9%	26%	23%
Formosa Plastics	1301 TT	Taiwan	47.10	N	62	7,733	7,036	6.8	9.4	9.4	12.8	1.0	1.0	12%	9%	15%	11%	26%	23%
OUCG	1710 TT	Taiwan	13.60	UW	14	308	248	5.3	6.8	3.2	4.1	0.8	0.8	16%	15%	15%	11%	0%	0%
KP Chemical	064420 KS	Korea	4,635	NR	-	305	226	10.3	9.1	2.3	2.5	0.7	0.7	NM	NM	7%	7%	-27%	-37%
LG Chem	051910 KS	Korea	82,500	N	79,000	3,621	3,669	6.3	8.5	3.1	3.8	1.3	1.2	3%	2%	23%	15%	21%	17%
Honam Petrochem	011170 KS	Korea	47,100	UW	39,000	1,008	824	-35.1	7.7	7.7	5.1	0.5	0.5	2%	2%	-2%	7%	8%	7%
Hanwha Chemical	009830 KS	Korea	7,950	UW	4,800	533	982	5.1	8.6	3.6	4.9	0.4	0.4	4%	3%	8%	5%	54%	50%
PTTAR	PTTAR TB	Thailand	9.90	N	20	823	2,137	30.9	2.5	9.8	3.7	0.5	0.4	0%	15%	1%	18%	90%	69%
PTTCH	PTTCH TB	Thailand	29.75	OW	58	1,249	2,254	3.8	5.9	3.3	5.3	0.5	0.4	13%	7%	13%	5%	47%	47%
IRPC PCL	IRPC TB	Thailand	1.91	UW	1.85	1,045	1,632	-3.0	10.2	-9.7	7.4	0.5	0.5	5%	5%	-15%	5%	54%	35%
Sinopec Yizheng Chemical	1033 HK	China	0.88	NR	-	1,740	1,328	41.8	NM	14.0	27.3	0.4	0.4	NM	NM	3%	3%	-4%	3%
Shanghai Petrochem	338 HK	China	1.92	NR	-	4,948	5,063	NM	12.3	NM	12.8	0.6	0.7	6%	1%	12%	NM	32%	31%
<i>Average Petrochemicals</i>								<b>8.2</b>	<b>9.0</b>	<b>6.1</b>	<b>8.7</b>	<b>0.8</b>	<b>0.8</b>	<b>8%</b>	<b>7%</b>	<b>9%</b>	<b>9%</b>	<b>30%</b>	<b>25%</b>

Source: Bloomberg, IBES, J.P. Morgan estimates. J.P. Morgan estimates for rated stocks, consensus estimates for non-rated stocks.

## 2009 net profit forecast lowered by a further 30%

**Despite a lower NT\$/US\$ forecast exchange rate, our new 2009 earnings forecast is lower driven by lower ethylene spread and operating rate**

We further lower our 2009 EPS forecast for FPCC by 33%. The new estimate now reflects lower operating rates on both the refining (83% in 2009, similar to 2004) and ethylene (80% in 2009) side. Our global refining margin (GRM) forecast also calls for a drop in GRM by 26% in 2009 to \$5.50/bbl while we have assumed 2009 average Ethylene spreads to be \$250/ton, near trough-cycle spreads. Despite Ethylene spreads having dropped to zero in 4Q08, we believe this is unlikely to happen this year unless there is a major correction in crude prices. Further earnings downside risk remains if demand for petrochem products slows down.

**Table 2: FPCC: Earnings estimate changes**

NT\$ millions, year-end December

Assumptions	2007	New		Old		% Chg	
		08E	09E	08E	09E	08E	09E
<i>NT\$/US\$</i>	<i>32.86</i>	<i>31.54</i>	<i>36.00</i>	<i>31.00</i>	<i>31.65</i>	<i>2%</i>	<i>14%</i>
Sales	699,315	848,270	491,526	922,270	912,982	-8%	-46%
COGS	(613,389)	(807,823)	(450,665)	(851,179)	(857,046)	-5%	-47%
Gross Profit	85,926	40,447	40,861	71,092	55,936	-43%	-27%
SG&A	9,773	10,179	8,847	10,148	9,589	0%	-8%
EBITDA	103,892	69,040	68,830	101,728	82,596	-32%	-17%
EBIT (OP)	83,045	33,671	37,881	66,359	51,748	-49%	-27%
Associate Income	7,879	5,408	5,873	5,420	5,406	0%	9%
Pre-tax Profit	78,529	29,174	33,405	62,133	47,642	-53%	-30%
Tax	(8,918)	(3,313)	(3,794)	(7,056)	(5,411)	-53%	-30%
Net Profit	69,611	25,861	29,611	55,077	42,231	-53%	-30%
EPS	7.53	2.80	3.06	5.96	4.57	-53%	-33%

Source: Company data, J.P. Morgan estimates.

**We estimate FPCC lost NT\$22.8 billion (OP) in 4Q08. Our 2009 forecast calls for a slight increase in 2009 OP but Olefins division OPM of only 2.5%**

In 4Q08, we estimate FPCC lost around NT\$22.8 billion in operating profit, mainly due to inventory losses as FPCC's input prices lag product prices by one month. The plunge in product prices hit the Olefins division especially hard, as our year-end Olefins operating profit forecast of -NT\$5.5 billion translates into a loss of NT\$13.4 billion for 4Q08. The lack of inventory losses for 2009 is the main reason we are expecting operating profit to rise by 5.8% to NT\$32.0 billion. However, because we have assumed 80% operating rate for the Ethylene crackers and \$250/ton spread over naphtha, the Ethylene division is only expected to record an OPM of 2.5% in 2009.

**Table 3: FPCC revenue and operating profit breakdown by segment**

NT\$ in millions

	2004	2005	2006	2007	2008E	2009E	2010E
Revenue	347,420	443,320	529,566	699,315	848,270	491,526	582,119
Refining	211,247	290,836	342,298	428,914	554,152	275,550	341,233
Olefins	94,632	111,780	139,911	202,957	223,469	145,327	170,237
Utilities	21,013	24,654	24,863	29,271	32,476	32,476	32,476
Others	20,528	16,050	22,494	38,173	38,173	38,173	38,173
Operating Profit	55,558	61,386	53,444	76,153	30,268	32,013	33,722
Refining	31,880	36,600	29,530	57,680	30,059	22,712	19,870
Olefins	16,162	17,400	18,120	13,190	-5,478	3,698	8,241
Utilities	7,021	7,100	5,600	5,130	5,683	5,683	5,683
Operating Profit Margin	16.0%	13.8%	10.1%	10.9%	3.6%	6.5%	5.8%
Refining	15.1%	12.6%	8.6%	13.4%	5.4%	8.2%	5.8%
Olefins	17.1%	15.6%	13.0%	6.5%	-2.5%	2.5%	4.8%
Utilities	33.4%	28.8%	22.5%	17.5%	17.5%	17.5%	17.5%

Source: Company data, J.P. Morgan estimates.

**2009 is shaping up to be like 2001 with capacity growing much faster than demand – thus downside to our earnings forecast exists**

**Parallels with 2001-02, 2009 shaping up to be a tough year**

We believe the petrochemical industry is about to enter into an environment similar to the cycle-trough it experienced in 2001-02, where capacity increased much faster than demand. Thus, we believe our current earnings forecast for FPCC has further downside potential due to the current unfavorable economic outlook.

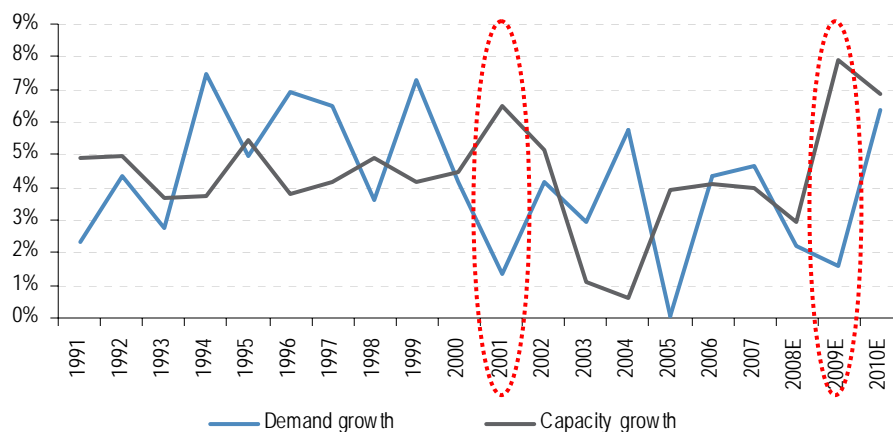
Table 4: Product spread trends and assumptions

US\$/ton

	2001	2002	2003	2004	2005	2006	2007	2008	2009E
<i>NT\$/US\$</i>	32.81	34.53	34.40	33.41	32.17	32.53	32.86	31.54	36.00
Ethylene Spread	202	182	196	529	413	565	450	364	250
GRM (\$/bbl)		1.46	3.43	7.04	6.49	5.17	7.49	7.40	5.50
<b>FPCC OP Margin</b>	-	-	9.2%	16.0%	13.8%	10.1%	10.9%	3.6%	6.5%

Source: CMAI Global, J.P. Morgan estimates.

Figure 1: Capacity growing faster than supply in 2009, similar to 2001



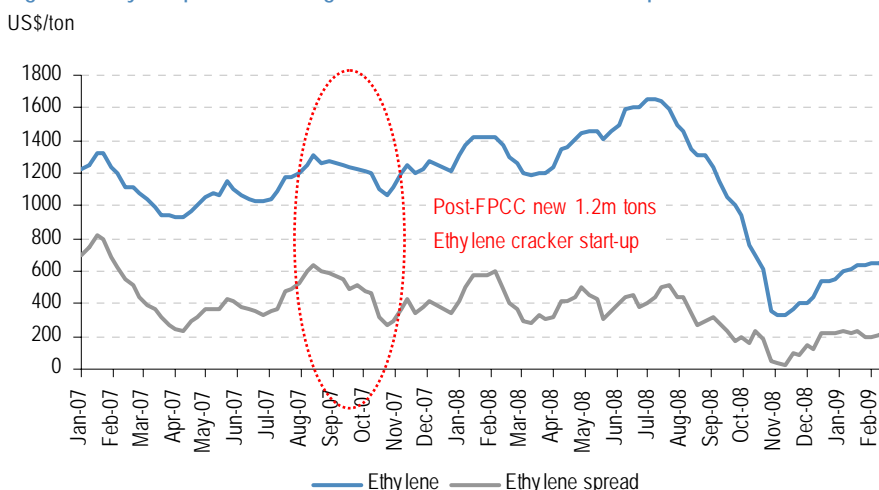
Source: CMAI Global, J.P. Morgan estimates.

**Last time significant new capacity started up in Asia (FPCC in Sep-07), Ethylene spreads dropped nearly 50%**

## Reduce exposure to FPCC ahead of new capacity

Despite its recent underperformance, we believe it is too early to get back into FPCC and we advise investors to reduce holdings in the stock ahead of the new, large ethylene capacity that is expected to come on stream in 2009, as highlighted in Table 5. Current Ethylene prices have nearly doubled from their Nov08 lows, while spreads have recovered from nearly zero to around \$200/ton, which is only close to cash cost levels. As Figure 2 highlights, after FPCC started its 1.2mt Ethylene cracker in Taiwan during 2007, ethylene price proceeded to drop by almost 25%, with spreads dropping almost 50% as the new volume flooded the market place. We expect in today's weak demand environment, this effect will be amplified.

Figure 2: Ethylene prices and margins fell after FPCC cracker start-up in mid-2007



Source: Datastream.

ICIS news has recently indicated that both Petro-Rabigh and Yansab in Saudi Arabia and the Sinopec JV in Fujian will have product ready for sale in either March or April of this year. The start-up timing of these three projects is within our expectations, with a one-quarter delay. When these projects do start up according to the schedule shown, we believe this will send a strong signal to the market that the ME projects will indeed start on time, unlike the previous Iranian projects. Such expectations may mean downstream buyers will be willing to sit and wait on the sidelines in 2Q before buying more products.

Table 5: The 2009 new Ethylene capacity starting lineup

tons per year

Company	Country	Location	Ethylene Capacity	Original Startup	Latest Update	Downstream Products
Petro-Rabigh	Saudi Arabia	Rabigh	1,300,000	4Q08	Mar09	HDPE, LLDPE, PP, MEG
Yansab	Saudi Arabia	Yanbu	1,300,000	4Q08	Apr09	HDPE, LLDPE, PP, MEG
Sinopec/Armaco/Exxon Fujian	China	Quanzhou	800,000	1Q09	Apr09	HDPE, LLDPE, PP, MTBE
Panjin Ethylene	China	Liaoning	450,000	4Q08	2Q09	HDPE, LLDPE, PP
Sharq	Saudi Arabia	Al Jubail	1,200,000	1Q09	2Q09	HDPE, LLDPE, MEG
RLOC	Qatar	Ras Laffan	1,300,000	2Q09	Sep09	Ethylene
Petrochina Dushanzi	China	Dushanzi	1,000,000	3Q09	3Q09	HDPE, LLDPE, PP, PS, PBR, SBR, MTBE
CNOOC/Shell	China	Huizhou	200,000	3Q09	3Q09	expansion
Sinopec/SABIC	China	Tianjin	1,000,000	4Q09	Dec09	HDPE, LLDPE, PP, MTBE, Phenol
<b>Total</b>			<b>8,550,000</b>			

Source: CMAI Global, ICIS News.

## FPCC is no longer a yield play

The Formosa Group and, in particular, FPCC, has always been seen as a dividend play. This is probably one of the main reasons why FPCC is so closely held within the Group (86%), especially for the Chang Kang Memorial Hospital fund (CKMH), for which FPCC would have provided it with a steady stream of recurring income.

As Figure 3 highlights, FPCC has on average traded with a 5-6% dividend yield since 2007. The chart below is simply an inverse of a traditional P/E chart, with each value multiplied by 80%, representing the average dividend payout. When earnings started to rise in 2004 and the share price stayed relatively stable, FPCC yield rose as high as 8.8%. Subsequent share price increases drove the yield back down to 6%. The reason the chart is showing an upward trend from Jan-09 onwards is due to the fact that we have rolled over to 2009E earnings, which we are currently forecasting to increase. Recent falling share price has also helped push the yield back up to 4% (assuming all cash).

Figure 3: FPCC dividend yield trend - inverse forward P/E chart



Source: Bloomberg, J.P. Morgan estimates.

For the 2008 dividend payout (to be paid in July 2009), we have assumed a cut in the total payout ratio from 89% in 2007 to 80%. We believe that given the uncertain outlook in the petrochem sector, FPCC maybe more inclined to keep the cash for a rainy day. Along that line of thinking, we also assume FPCC will cut the cash dividend to an 80% payout from 100%, which is something it did in 2003-2005.

Table 6: FPCC dividend payout history and forecast

NT\$, payout based on same year's earnings

	2003	2004	2005	2006	2007	2008E	2009E
EPS	2.42	6.05	6.40	4.81	7.53	2.80	3.06
Cash Dividend	1.80	3.61	4.70	4.40	6.70	1.79	1.96
Stock Dividend	0.60	0.60	0.30	-	-	0.45	0.49
<b>Total Dividend</b>	<b>2.40</b>	<b>4.21</b>	<b>5.00</b>	<b>4.40</b>	<b>6.70</b>	<b>2.24</b>	<b>2.45</b>
Cash Payout (%)	74%	60%	73%	91%	89%	64%	64%
Stock Payout (%)	25%	10%	5%	0%	0%	16%	16%
<b>Total Payout (%)</b>	<b>99%</b>	<b>70%</b>	<b>78%</b>	<b>91%</b>	<b>89%</b>	<b>80%</b>	<b>80%</b>
Cash Yield (%)	3.3%	6.6%	8.6%	8.0%	12.2%	3.1%	3.4%

Source: Company data, J.P. Morgan estimates.

## PT, share price performance and risks

Our new Dec-09 PT of NT\$46 is based on 1.8x 2009E BV, which is below the lowest valuation of 2.2x BV FPCC traded at in 2004. However, we would argue that the previous trough valuation may not be relevant because FPCC's shares have never traded in either a bear market or during an Ethylene cycle-trough. Furthermore, we believe FPCC should trade at a discount to Reliance Industries of India, due to the latter's upstream operation despite a similar downstream setup.

A summary of some of changes since our last update:

1. Following our global GRM assumptions, 2009 GRM is forecasted to fall from \$7.40/bbl in 2008 to \$5.50/bbl in 2009. We are assuming 83% refinery utilization rate for FPCC, similar to 2004 levels.
2. We are assuming an 80% utilization rate for FPCC's Ethylene crackers in 2009 - reflecting the new Middle East capacity start-up. 2009 Ethylene-naphtha spread assumed to be \$250/ton.
3. Our 2009 earnings estimate drops by 29%, with a drop in book value as well due to the losses incurred in 4Q08 and NT\$61 billion in dividend payout in July 2008.

Table 7: Share price performance of related petrochem companies

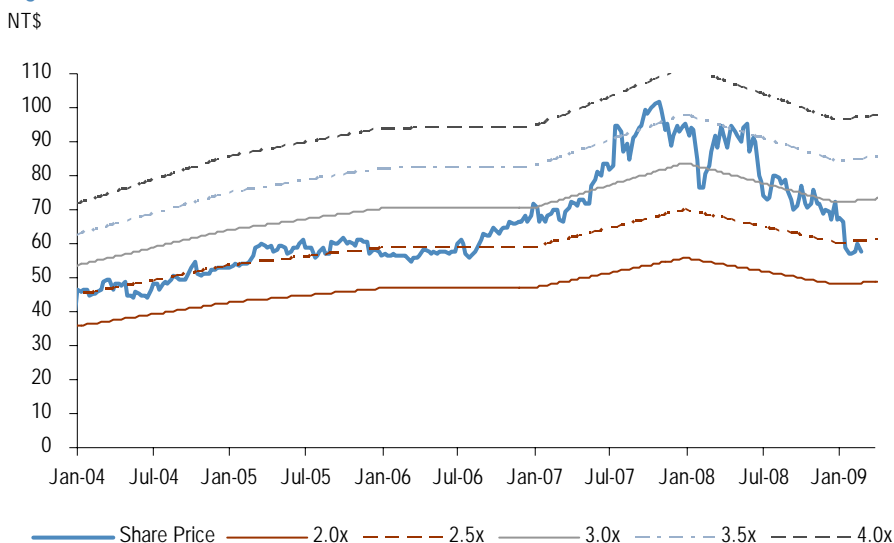
Korean companies in Won, Taiwanese companies in NT\$

	FPC	FCFC	NYP	FPCC	OUCC	Honam	LGC	Hanwha
Feb 20 share price	47.10	36.00	33.15	57.40	13.60	47,100	82,500	7,950
From 2008 low	13%	-10%	-4%	-12%	16%	39%	49%	93%
YTD	8%	-10%	-6%	-15%	-1%	-9%	16%	33%

Source: Bloomberg.

While FPCC outperformed its peers in 2008, we expect this year's under-performance to continue due to its expensive valuation, bearish industry outlook and potential further earnings risk downside.

Figure 4: FPCC forward P/BV chart



Source: Bloomberg, J.P. Morgan estimates.

**Risks to our PT and rating**

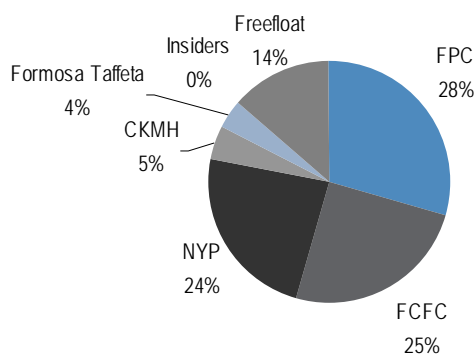
We believe any significant delays to new Middle East/Chinese capacity (greater than nine months) would lead to a more optimistic outlook for the sector, and a subsequent re-rating of FPCC, similar to in mid-2006. Also, if the current re-stocking continues through 2Q09, continuing to drive both spreads and volume higher, petrochemical companies should see share price appreciation into early 2Q.

Other upside risks includes:

1. **Stronger demand for middle distillates + naphtha:** FPCC's refinery setup is geared towards producing gasoline, diesel, jet-fuel and naphtha (81% of overall FPCC refining yield, based on our estimates). If the demand for these products, which will be a function of global economic activity, is better than expected, FPCC margins could grow faster than regional refiners with a lower middle distillates + naphtha yield.
2. **Continued share buybacks:** The Chang Kang Memorial Hospital Fund bought back FPCC shares in 2008 as the share price continued to fall. Based on exchange data, the Fund has bought 58.3 million shares at a potential cost of NT\$4.4 billion. While the buybacks stopped in Jan-09, if they were to re-start again, this would further reduce FPCC's free float, potentially limiting the share price downside.

Figure 5: FPCC's major shareholders

As of January 2009



Source: TWSE MOPS.

Table 8: Summary of share purchases by Chang Kang Memorial Hospital Fund

Calculated cost in NT\$ millions

	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Total Accumulated	% of Outstanding
FPCC (6505 TT)	17,500,000	21,500,000	5,000,000	2,300,000	7,000,000	5,000,000	-	418,302,710	4.52%
Monthly Avg. Price	NT\$76.38	NT\$78.24	NT\$72.22	NT\$73.49	NT\$71.82	NT\$68.13	NT\$63.61		
Calculated Cost	NT\$1,337	NT\$1,682	NT\$361	NT\$169	NT\$503	NT\$341	-		
FPC (1301 TT)	10,000,000	19,700,000	31,000,000	24,200,000	15,000,000	-	-	399,415,165	6.98%
Monthly Avg. Price	NT\$65.56	NT\$63.60	NT\$56.64	NT\$51.93	NT\$52.66	NT\$46.10	NT\$46.65		
Calculated Cost	NT\$656	NT\$1,253	NT\$1,756	NT\$1,257	NT\$790	-	-		

Source: TWSE MOPS, Bloomberg.

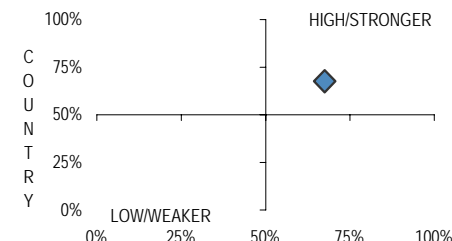
All Data As Of 24-Feb-09

## Q-Snapshot: Formosa Petrochemical Corp.

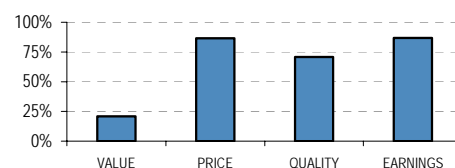
Quant Return Drivers (a Score >50% indicates company ranks 'above average')

Score 0% (worst) to 100% (best)	vs Country	vs Industry	Raw Value
<b>Value</b>			
P/E Vs Market (12mth fwd EPS)	39%	79%	0.6x
P/E Vs Sector (12mth fwd EPS)	14%	34%	1.2x
EPS Growth (forecast)	23%	3%	-33.5%
<b>Value Score</b>	<b>21%</b>	<b>23%</b>	
<b>Price Momentum</b>			
12 Month Price Momentum	82%	73%	-25.7%
1 Month Price Reversion	75%	72%	0.4%
<b>Momentum Score</b>	<b>87%</b>	<b>77%</b>	
<b>Quality</b>			
Return On Equity (forecast)	79%	66%	21.3%
Earnings Risk (Variation in Consensus)	41%	59%	0.18
<b>Quality Score</b>	<b>71%</b>	<b>67%</b>	
<b>Earnings &amp; Sentiment</b>			
Earnings Momentum 3mth (risk adjusted)	91%	87%	10.4
1 Mth Change in Avg Recom.	52%	83%	0.00
Net Revisions FY2 EPS	82%	62%	0%
<b>Earnings &amp; Sentiment Score</b>	<b>87%</b>	<b>77%</b>	
<b>COMPOSITE Q-SCORE* (0% To 100%)</b>	<b>68%</b>	<b>68%</b>	

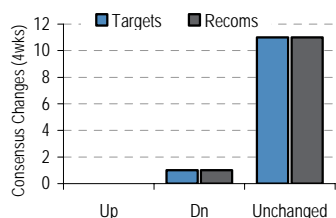
J.P. Morgan Composite Q-Score



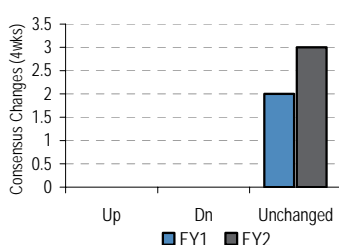
Quant Return Drivers Summary (vs Country)



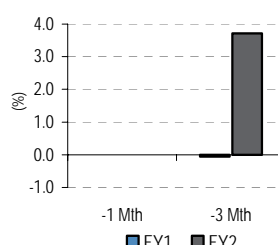
Targets & Recommendations\*\*



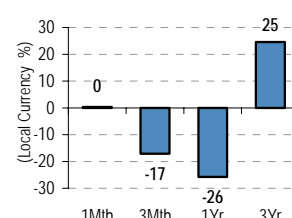
EPS Revisions\*\*



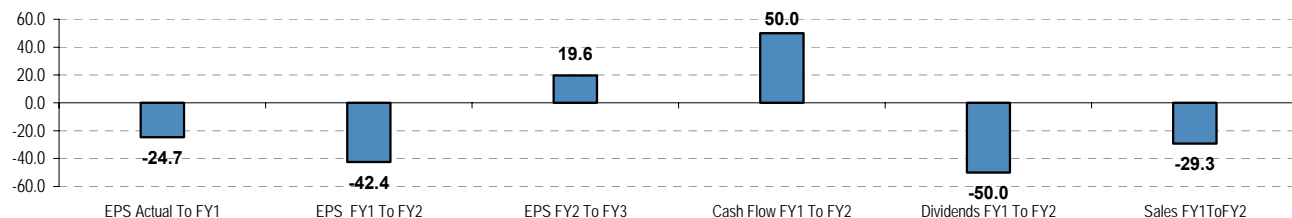
EPS Momentum (%)



Historical Total Return (%)



Consensus Growth Outlook (%)



Closest in Country by Size (Consensus. ADV = average daily value traded in US\$m over the last 3 mths)

Code	Name	Industry	USD MCAP	ADV	PE FY1	Q-Score*
2330-TW	Taiwan Semiconductor Manufacturing Co. Ltd.	Semiconductors	32,457	70.54	11.6	40%
<b>6505-TW</b>	<b>Formosa Petrochemical Corp.</b>	<b>Oil Refining/Marketing</b>	<b>15,316</b>	<b>9.43</b>	<b>10.1</b>	<b>68%</b>
2412-TW	Chunghwa Telecom Co. Ltd.	Major Telecommunications	14,464	43.73	11.9	85%
2317-TW	Hon Hai Precision Industry Co. Ltd.	Computer Peripherals	13,862	71.12	7.6	39%
2454-TW	MediaTek Inc.	Semiconductors	8,637	60.65	15.8	95%
2882-TW	Cathay Financial Holding Co. Ltd.	Financial Conglomerates	8,399	33.09	64.5	7%
2498-TW	HTC Corp.	Telecommunications Equipment	8,064	69.16	10.1	86%
1301-TW	Formosa Plastics Corp.	Chemicals: Specialty	7,774	18.12	9.8	54%
2002-TW	China Steel Corp.	Steel	7,640	29.15	10.2	22%
1303-TW	Nan Ya Plastics Corp.	Chemicals: Specialty	7,291	9.87	18.0	28%
2409-TW	AU Optronics Corp.	Electronic Equipment/Instruments	6,258	39.19	7.9	10%

Source: Factset, Thomson and J.P. Morgan Quantitative Research. For an explanation of the Q-Snapshot, please visit <http://jpmorgan.hk.acrobat.com/qsnapshot/>  
Q-Snapshots are a product of J.P. Morgan's Global Quantitative Analysis team and provide quantitative metrics summarized in an overall company 'Q-Score.'  
Q-Snapshots are based on consensus data and should not be considered as having a direct relationship with the J.P. Morgan analysts' recommendation.  
\* The Composite Q-Score is calculated by weighting and combining the 10 Quant return drivers shown. The higher the Q-Score the higher the one month expected return. On a 14 Year back-test the stocks with the highest Q-Scores have been shown (on average) to significantly outperform those stocks with the lowest Q-Scores in this universe. \*\* The number of up, down and unchanged target prices, recommendations or EPS forecasts that make up consensus.

## Formosa Petrochemical Corp: Summary of financials

Year-end Dec

### Profit and loss statement

TWD in millions	FY06A	FY07A	FY08E	FY09E	FY10E
Revenues	529,566	699,315	848,270	491,526	582,119
% change Y/Y	19.5	32.1	21.3	-42.1	18.4
Gross margin (%)	12.0	12.3	4.8	8.3	7.5
EBITDA	75,902	103,892	69,040	68,830	67,348
% change Y/Y	0.7	36.9	-33.5	-0.3	-2.2
EBITDA margin (%)	14.3	14.9	8.1	14.0	11.6
EBIT	57,241	83,045	33,671	37,881	40,195
% change Y/Y	-13.3	45.1	-59.5	12.5	6.1
EBIT margin (%)	10.8	11.9	4.0	7.7	6.9
Net interest	-3,441	-4,134	-4,431	-3,946	-2,872
Earnings before tax	53,627	78,529	29,174	33,405	36,188
% change Y/Y	-13.6	46.4	-62.8	14.5	8.3
Tax	8,680	8,918	3,313	3,794	4,110
as % of EBT	-16.2	-11.4	-11.4	-11.4	-11.4
Net income (reported)	44,476	69,611	25,861	29,611	32,078
% change Y/Y	-22.3	56.5	-62.8	14.5	8.3
Shares outstanding (MM)	9249	9249	9249	9662	10136
EPS (reported) (TWD)	4.81	7.53	2.80	3.06	3.16
% change Y/Y	-24.7	56.5	-62.8	9.6	3.3

### Cash flow statement

TWD in millions	FY06A	FY07A	FY08E	FY09E	FY10E
EBIT	57,241	83,045	33,671	37,881	40,195
Depreciation & amortization	16,533	19,270	35,349	30,928	27,132
Change in working capital	-8,578	-25,853	-19,374	49,281	-13,575
Taxes	-8,680	-8,918	-3,313	-3,794	-4,110
Cash flow from operations	55,390	64,390	41,681	109,665	45,480
Capex	-31,476	-21,203	-8,000	-4,000	-4,000
Disposal/ (purchase)	1	1,991	0	0	0
Net interest	-3,441	-4,134	-4,431	-3,946	-2,872
Free cash flow	23,914	43,188	33,681	105,665	41,480
Equity raised/ (repaid)	0	0	0	0	0
Debt raised/ (repaid)	34,197	1,474	18,000	-19,300	-12,000
Other	-8,414	1,009	0	0	0
Dividends paid	-42,202	-40,693	-61,965	-16,551	-18,952
Beginning cash	4,298	7,317	10,511	383	70,352
Ending cash	7,317	10,511	383	70,352	81,035
DPS (TWD)	4.700	4.400	6.700	1.790	1.961

### Balance sheet

TWD in millions	FY06A	FY07A	FY08E	FY09E	FY10E
Cash and cash equivalents	7,317	10,511	383	70,352	81,035
Accounts receivable	51,395	85,762	84,344	54,503	59,061
Inventories	48,111	52,368	77,463	49,388	59,014
Others	11,265	8,919	8,919	8,919	8,919
Current assets	136,916	187,458	201,005	213,059	237,926
Long-term investments	0	0	0	0	0
Net fixed assets	279,549	281,963	254,614	227,686	204,553
Total assets	439,315	491,085	477,283	462,408	464,143
Liabilities					
Short-term loans	48,324	41,154	41,154	41,154	41,154
Payables					
Others	10,549	16,118	16,118	16,118	16,118
Total current liabilities	106	98	98	98	98
Long-term debt	140,629	131,224	149,224	129,924	117,924
Other liabilities	3,066	3,309	3,309	3,309	3,309
Total liabilities	221,594	232,886	255,188	227,254	215,862
Shareholders' equity	217,722	258,199	222,095	239,292	257,157
BVPS (TWD)	23.54	27.92	24.01	24.77	25.37

### Ratio analysis

%	FY06A	FY07A	FY08E	FY09E	FY10E
EBITDA margin	14.3	14.9	8.1	14.0	11.6
Operating margin	10.1	10.9	3.6	6.5	5.8
Net profit margin	8.4	10.0	3.0	6.0	5.5
SG&A/sales	14.3	14.9	8.1	14.0	11.6
Sales per share growth	19.5	32.1	21.3	-42.1	18.4
Sales growth	19.5	32.1	21.3	-42.1	18.4
Net profit growth	-22.3	56.5	-62.8	14.5	8.3
EPS growth	-24.7	56.5	-62.8	9.6	3.3
Interest coverage (x)	22.1	25.1	15.6	17.4	23.5
Net debt to total capital	37.1	26.9	33.5	15.2	10.2
Net debt to equity	74.8	51.1	72.1	29.6	18.7
Sales/assets	125.4	150.3	175.2	104.6	125.7
Assets/equity	201.8	190.2	214.9	193.2	180.5
ROE	20.8	29.3	10.8	12.8	12.9
ROCE	14.7	19.8	8.0	9.2	9.7

Source: Company data, J.P. Morgan estimates.

**Other Companies Recommended in This Report (all prices in this report as of market close on 24 February 2009)**

Formosa Plastics Corp (1301.TW/NT\$46.80/Neutral), LG Chem Ltd (051910.KS/W83,100/Neutral), Reliance Industries Ltd (RELI.BO/Rs1,253.30/Overweight), SK Energy Co Ltd (096770.KS/W73,500/Overweight)

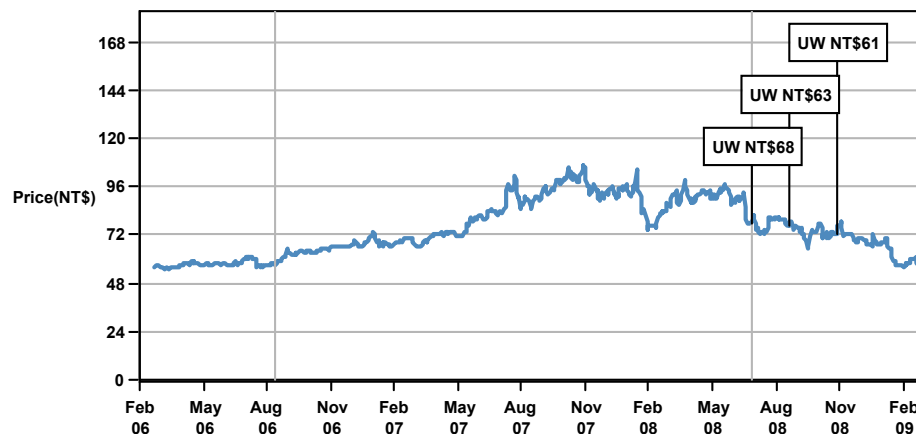
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- **Market Maker/ Liquidity Provider:** JPMSL and/or an affiliate is a market maker and/or liquidity provider in SK Energy Co Ltd.
- **Analyst Position:** The following analysts (and/or their associates or household members) own a long position in the shares of Reliance Industries Ltd: Pradeep Mirchandani, Adarsh Parasrampuria.
- **Client of the Firm:** Formosa Petrochemical Corp is or was in the past 12 months a client of JPMSI; during the past 12 months, JPMSI provided to the company non-investment banking securities-related service. Formosa Plastics Corp is or was in the past 12 months a client of JPMSI. LG Chem Ltd is or was in the past 12 months a client of JPMSI. Reliance Industries Ltd is or was in the past 12 months a client of JPMSI; during the past 12 months, JPMSI provided to the company non-investment banking securities-related service and non-securities-related services. SK Energy Co Ltd is or was in the past 12 months a client of JPMSI; during the past 12 months, JPMSI provided to the company non-investment banking securities-related service and non-securities-related services.
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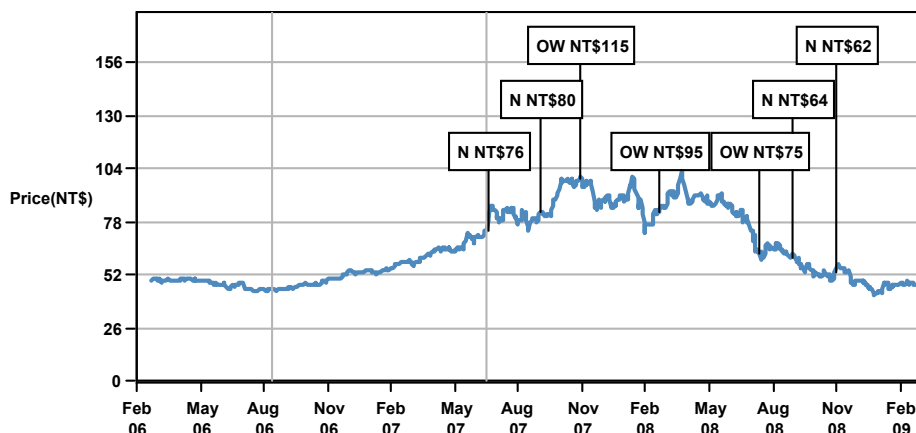
**Formosa Petrochemical Corp (6505.TW) Price Chart**



Date	Rating	Share Price (NT\$)	Price Target (NT\$)
27-Jun-08	UW	77.60	68.00
22-Aug-08	UW	77.00	63.00
30-Oct-08	UW	72.00	61.00

Source: Reuters and J.P. Morgan; price data adjusted for stock splits and dividends.  
 Break in coverage Aug 14, 2006 - Jun 27, 2008. This chart shows J.P. Morgan's continuing coverage of this stock; the current analyst may or may not have covered it over the entire period.  
 J.P. Morgan ratings: OW = Overweight, N = Neutral, UW = Underweight.

**Formosa Plastics Corp (1301.TW) Price Chart**



Date	Rating	Share Price (NT\$)	Price Target (NT\$)
20-Jun-07	N	73.70	76.00
04-Sep-07	N	82.90	80.00
29-Oct-07	OW	99.40	115.00
21-Feb-08	OW	82.90	95.00
14-Jul-08	OW	62.00	75.00
29-Aug-08	N	60.20	64.00
31-Oct-08	N	53.50	62.00

Source: Reuters and J.P. Morgan; price data adjusted for stock splits and dividends.  
 Break in coverage Aug 14, 2006 - Jun 19, 2007. This chart shows J.P. Morgan's continuing coverage of this stock; the current analyst may or may not have covered it over the entire period.  
 J.P. Morgan ratings: OW = Overweight, N = Neutral, UW = Underweight.

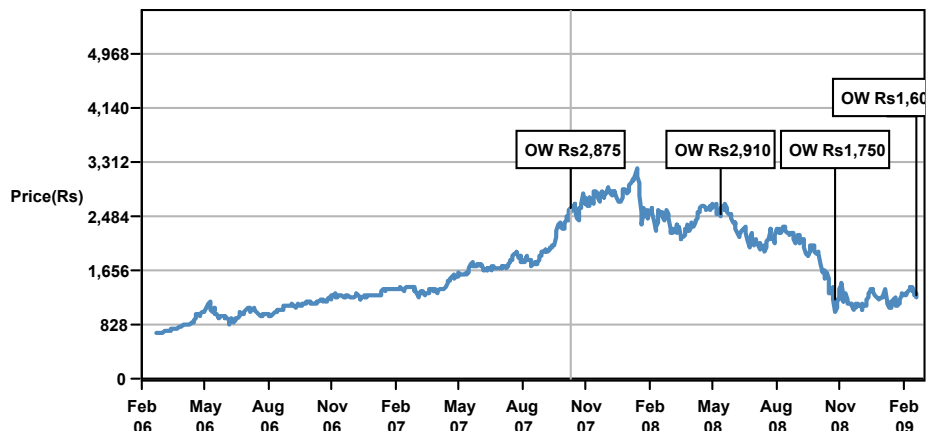
**LG Chem Ltd (051910.KS) Price Chart**



Date	Rating	Share Price (W)	Price Target (W)
20-Sep-07	OW	103500	122000
24-Oct-07	OW	122000	141000
13-Feb-08	OW	78900	94000
22-Apr-08	OW	94300	105000
17-Jun-08	N	106500	105000
19-Oct-08	N	78000	79000

Source: Reuters and J.P. Morgan; price data adjusted for stock splits and dividends.  
 Break in coverage Jan 17, 2005 - Mar 28, 2005, and Aug 14, 2006 - Sep 20, 2007. This chart shows J.P. Morgan's continuing coverage of this stock; the current analyst may or may not have covered it over the entire period.  
 J.P. Morgan ratings: OW = Overweight, N = Neutral, UW = Underweight.

**Reliance Industries Ltd (RELI.BO) Price Chart**



Date	Rating	Share Price (Rs)	Price Target (Rs)
11-Oct-07	OW	2617.35	2875.00
15-May-08	OW	2529.95	2910.00
24-Oct-08	OW	1215.25	1750.00
18-Feb-09	OW	1267.60	1600.00

Source: Reuters and J.P. Morgan; price data adjusted for stock splits and dividends.  
 Break in coverage Apr 28, 2004 - May 20, 2004, and Oct 13, 2005 - Oct 11, 2007. This chart shows J.P. Morgan's continuing coverage of this stock; the current analyst may or may not have covered it over the entire period.  
 J.P. Morgan ratings: OW = Overweight, N = Neutral, UW = Underweight.

**SK Energy Co Ltd (096770.KS) Price Chart**



Date	Rating	Share Price (W)	Price Target (W)
05-Oct-07	OW	155500	185000
31-Oct-07	OW	208500	230000
26-Jul-08	OW	107500	175000
26-Oct-08	OW	48650	125000
19-Jan-09	OW	75300	100000

Source: Reuters and J.P. Morgan; price data adjusted for stock splits and dividends.  
 Initiated coverage Oct 05, 2007. This chart shows J.P. Morgan's continuing coverage of this stock; the current analyst may or may not have covered it over the entire period.  
 J.P. Morgan ratings: OW = Overweight, N = Neutral, UW = Underweight.

**Explanation of Equity Research Ratings and Analyst(s) Coverage Universe:**

J.P. Morgan uses the following rating system: **Overweight** [Over the next six to twelve months, we expect this stock will outperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] **Neutral** [Over the next six to twelve months, we expect this stock will perform in line with the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] **Underweight** [Over the next six to twelve months, we expect this stock will underperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] The analyst or analyst's team's coverage universe is the sector and/or country shown on the cover of each publication. See below for the specific stocks in the certifying analyst(s) coverage universe.

Coverage Universe: **Samuel Lee, CFA:** Far Eastern Textile Ltd. (1402.TW), Formosa Chemicals and Fibre Corp (1326.TW), Formosa Petrochemical Corp (6505.TW), Formosa Plastics Corp (1301.TW), Hanwha Chemical Corp (009830.KS), Honam Petrochemical Corp (011170.KS), LG Chem Ltd (051910.KS), Nan Ya Plastics Corp (1303.TW), Oriental Union Chemical Corporation (1710.TW)

**J.P. Morgan Equity Research Ratings Distribution, as of December 31, 2008**

	<b>Overweight (buy)</b>	<b>Neutral (hold)</b>	<b>Underweight (sell)</b>
JPM Global Equity Research Coverage	38%	44%	18%
IB clients*	54%	52%	43%
JPMSI Equity Research Coverage	37%	49%	14%
IB clients*	76%	71%	62%

\*Percentage of investment banking clients in each rating category.

For purposes only of NASD/NYSE ratings distribution rules, our Overweight rating falls into a buy rating category; our Neutral rating falls into a hold rating category; and our Underweight rating falls into a sell rating category.

**Valuation and Risks:** Please see the most recent company-specific research report for an analysis of valuation methodology and risks on any securities recommended herein. Research is available at <http://www.morganmarkets.com>, or you can contact the analyst named on the front of this note or your J.P. Morgan representative.

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