

WHAT IS A FORWARD CURVE?

By Mark Quiner

The PetroChem Wire publishes daily forward curves for natural gas liquids, ethylene and polyethylene prices on page three of the report. If interpreted properly, these forward curves provide insight into market sentiment and direction. They also have a practical application as buyers and sellers routinely use them to lock in margins into the future.

A forward curve represents prices paid on a particular date for delivery at certain point in the future. The prices for each month in the curve typically reflect actual transaction levels on the date of publication. It is not a forecast of where prices will be at a given point in the future. Forward curves represent relationships of prices over time on a particular date.

Using a real life example from the curves below ethylene traded at 53.25 cents per pound for delivery in March and at 43.5 cpp for delivery in the second quarter of 2010. This does not mean the parties involved in that transaction think the price will be 43.5 cents in the second quarter. It was simply the market price on that particular date.

Noting the shape of the curve is a good way to gauge the strength or weakness of a market. It is a snapshot at a particular time of market sentiment. A **contango** market refers to an upward sloping curve, where the outer months carry a premium over the prompt months. A **backwardated** market is a downward sloping curve. In a backwardated market, the outer months are trading at a discount to the prompt months. The ethylene curve below is steeply backwardated: February ethylene was at 54 cents per pound on in the example below and ethylene for delivery in December 2010 was 35.375 cents per pound.

A backwardated market is considered to be bullish as it indicates strong demand in the prompt months as buyers are willing to pay a premium for prompt material. A contango market is a more normal state of affairs. The outer months will carry a premium due to the cost of money and storage. Observers of the ethylene market are currently watching to see if the current backwardation flattens out, indicating the strength may be moderating, or if it widens, indicating more strength.

Forward curves have a practical application for locking in pricing. Referring to the example below, a chemical company that manufactures ethylene from ethane can lock in a healthy profit margin by purchasing 2Q ethane at 67.5 cents/gal and selling 2Q ethylene at 43.5 cents/lb (ethane at 67.5 cents/gal translates to 22.7 cents/lb – a 45-cent spread to ethylene). Market participants further down the chain all the way to a stretch buyer can employ similar strategies. They can offset price fluctuations by locking in correlated raw material pricing into the future.

	C2	C3	C4	C5	Ethylene	HDPE BM
10-Feb	0.73500	1.22000	1.47000	1.79000	0.54000	0.58000
10-Mar	0.72750	1.19500	1.41500	1.76000	0.53250	0.57000
10-Apr	0.70000	1.12000	1.37000	1.72500	0.46250	0.56000
10-May	0.67500	1.10750	1.35500	1.69750	0.43500	0.55000
10-Jun	0.65000	1.10750	1.35500	1.68000	0.37250	0.54000
10-Jul	0.64000	1.11000	1.36250	1.67000	0.36750	0.53000
10-Aug	0.63375	1.11500	1.37000	1.67000	0.36250	0.52125
10-Sep	0.62750	1.12000	1.37750	1.67000	0.36000	0.51375
10-Oct	0.62250	1.12750	1.38500	1.67125	0.35750	0.50625
10-Nov	0.61750	1.13500	1.39250	1.67250	0.35500	0.49875
10-Dec	0.61250	1.14250	1.40000	1.67375	0.35375	0.49125
11-Jan	0.60750	1.15000	1.40750	1.67375	0.35250	0.48375
11-Feb	0.60250	1.15500	1.39750	1.67375	0.35125	0.47625
11-Mar	0.59750	1.16000	1.36750	1.67375	0.35000	
11-Apr	0.59250	1.16500	1.35750	1.67375	0.34875	
11-May	0.58750	1.17000	1.36000	1.67375	0.35000	
11-Jun	0.58250	1.17500	1.36250	1.67375	0.35000	
11-Jul	0.57750	1.18000	1.36500	1.67375	0.35000	
11-Aug	0.57250	1.18250	1.36750	1.67375	0.35000	
11-Sep	0.56750	1.18500	1.37000	1.67375	0.35125	
11-Oct	0.56250	1.18750	1.37250	1.67375	0.35250	
11-Nov	0.55750	1.19000	1.37500	1.67375	0.35375	
11-Dec	0.55250	1.19250	1.37750	1.67375	0.35500	
12-Jan	0.54750	1.19500	1.38000	1.67375	0.35625	
12-Feb	0.54750	1.19750	1.38250	1.67375	0.35750	

The PetroChem Wire is a daily newsletter serving the petrochemical industry. It counts every major chemical and refining company among its subscribers, as well as many major manufacturing concerns, global conglomerates, industry consultants, equity analysts and government agencies.

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