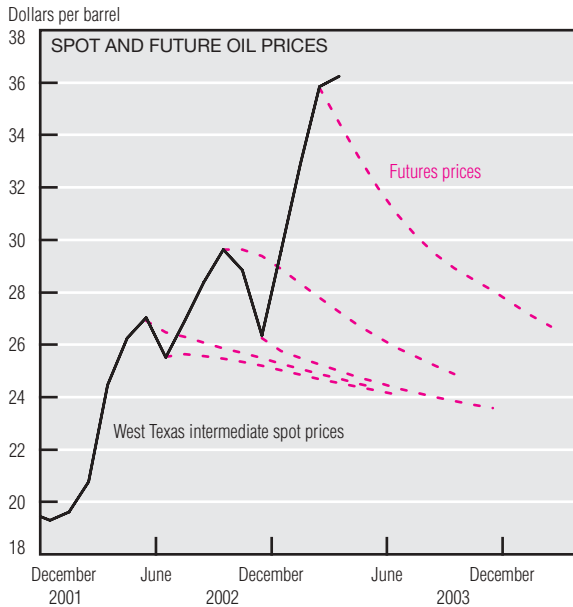


# Predicting Oil Prices



## Correlation among Spot, Futures, and Future Spot Prices

Future prices	Current and future spot prices			
	Spot	1 mo. spot	3 mo. spot	12 mo. spot
One month	9.992	0.898	—	—
Three months	0.972	0.885	0.665	—
12 months	0.860	0.784	0.572	0.093
Spot	1.000	0.899	0.662	0.187

## Futures Forecast Errors, Basic Statistics<sup>a</sup>

	1 mo.	3 mo.	12 mo.
Mean	0.243	0.656	2.095
Median	0.325	0.715	0.870
Maximum	7.520	16.410	18.040
Minimum	-8.480	-11.230	-9.380
Standard deviation	2.207	3.861	5.983

## Predicting the Direction of Change, 12 Months Ahead<sup>b</sup>

Predicted	Actual			Total predicted
	Up	Down	None	
Up	34	21	0	55
Down	44	58	1	103
None	0	0	0	0
Total actual	78	79	1	158

NOTES: Data from the third Wednesday or Thursday of each month were used to *approximate* the maturity structure of futures for West Texas intermediate crude oil. All statistical tests were evaluated at the 95% confidence level.

a. Prices are in dollars per barrel.

b. Compares the difference between current 12-month futures prices and the current spot price with the difference between the spot price 12 months ahead and the current spot price.

SOURCE: Bloomberg Financial Information Services.

Does the futures market provide any clues about the prospective path of oil prices? If you're looking beyond the one-month horizon, beware! If you care only about the month ahead, use the current spot price.

All futures prices are statistically correlated with the spot prices that they presumably predict, except the 12-month future price. Twelve months is too long for reliability. None of these correlations, however,

is substantially higher than that between current and future spot prices. Spot prices apparently incorporate new information about changes in upcoming oil prices as well as, if not better than, futures prices.

Beyond the one-month horizon, the forecast errors become large and skewed in a manner showing that they tend to systematically underestimate the future oil price. Although the one-month error is essentially zero and symmetrically distributed,

the current spot rate predicts next month's spot price just as well as the one-month futures price.

Can futures prices at least foretell the direction that prospective oil prices will take? The 12-month futures prices guessed only about 60% of the forthcoming movements correctly, but they were somewhat more accurate at predicting declines than increases. The other futures prices performed no better.