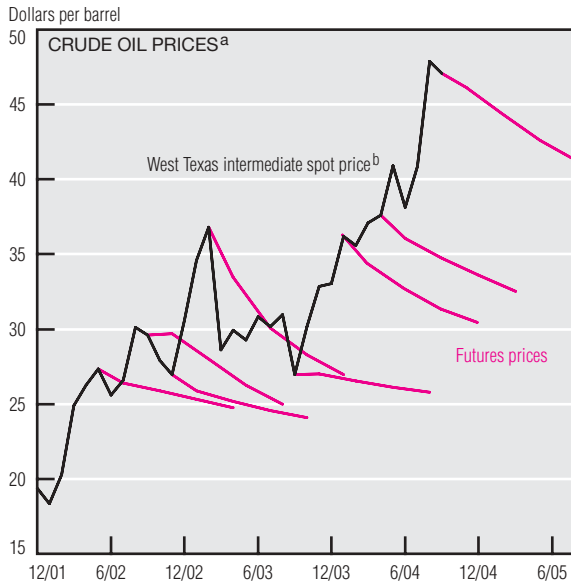


# Predicting Oil Prices



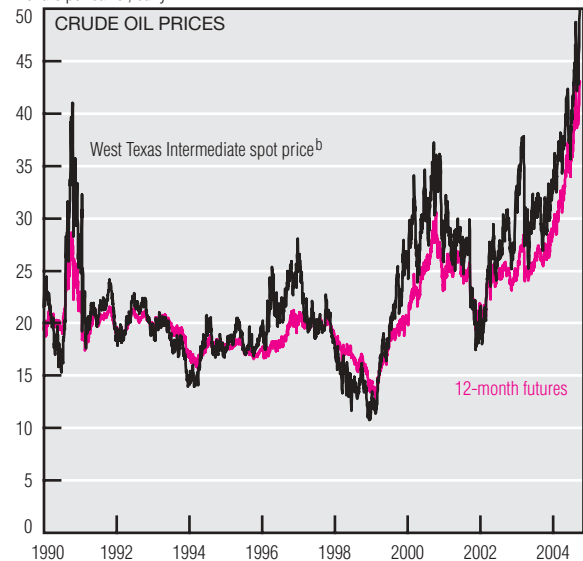
**Futures Forecast Errors<sup>a,c</sup>**

Futures Prices	Three months	Six months	12 months
Mean	0.76	1.61	2.83
Median	0.54	1.47	1.36
Maximum	14.38	14.87	22.09
Minimum	-9.25	-8.65	-7.22
Standard deviation	3.01	4.46	6.05
Number of observations	217	214	185

**Correlation among Spot, Futures, and Future Spot Prices<sup>a,b</sup>**

Futures prices	Current and future spot prices			
	Spot	Two mo. spot	Five mo. spot	11 mo. spot
One month	0.998			
Three months	0.989	0.890		
Six months	0.972	0.886	0.736	
12 months	0.938	0.862	0.722	0.466
Spot	1.000	0.882	0.715	0.462

Dollars per barrel, daily



a. Data are taken from the last trading day for one-month-ahead futures, typically the third business day before the 25th of the month.

b. For days before the 25th of the month, the spot price measures oil that is deliverable from the 25th of the current month to the 25th of the next month.

c. Prices are in dollars per barrel.

SOURCES: New York Mercantile Exchange; and Bloomberg Financial Information Services.

Bad as the economic consequences of higher oil prices may be, the fog surrounding their future path compounds the problem. To gain some clarity, many observers have looked to oil futures prices as a quick and easy means of forecasting where spot oil prices are headed. Unfortunately, futures prices are not very accurate predictors.

Futures markets in crude petroleum exist to provide producers, traders, and major users of oil with a low-cost way to hedge against

unanticipated changes in oil prices. In providing the hedge, futures markets immediately fold all available information that is relevant to the pricing of crude into current futures prices. Their informational efficiency, however, does not necessarily make futures prices good predictors.

Futures prices are statistically correlated with the spot prices that they presumably predict, but none of these correlations is substantially higher than the correlation between current and future spot prices. This indicates that spot prices and futures

prices both incorporate the same information about prospective changes in oil prices. Moreover, the prediction errors associated with oil futures are statistically large, and the further out one looks, the larger the forecast errors grow. This is not surprising, but the forecast errors also indicate that oil futures prices typically underpredict future spot prices. Large, skewed prediction errors suggest the need for caution when using futures markets to divine what path oil prices will take.