

# Understanding the SOQ

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A CME/Chicago Board of Trade/NYMEX Company

Domestic stock index futures traded on CME Group and other exchanges are typically settled to a "Special Opening Quotation" (SOQ). SOQs are calculated per normal index calculation procedures except that the values for the respective components are taken as the actual opening values for each of the component equities.

Note that not all stocks will actually record a transaction on the opening bell of the New York Stock Exchange (NYSE) or Nasdaq. Some may open a few seconds, minutes or even hours later. Thus, there will be differences between the initial index quotes on the Final Settlement Date relative to the SOQ.

On occasions such as the March 2010, September 2009, March 2009, September 2008, September 2007, March 2006, June 2005 and December 2004 settlements, the SOQ has been recorded above or below the Index's published daily high or low, respectively.

**Settle on Published Open?** - Some have suggested that the Exchange base the final settlement price on the published opening value of the index. However, one might question the informational value of the published spot index value on the opening. If component stocks do not record transactions immediately on the open, index publishers substitute the previous day's close for a contemporaneous value.

Thus, it is unclear exactly what the spot index as published is measuring. Certainly, and most significantly, it is not measuring an "actionable" value at which one could transact equity business. Rather, it represents an amalgam of current and stale (overnight) prices. On days when the market gaps open higher or lower, the opening value can be quite misrepresentative.

Settlement to the SOQ is designed to compel convergence of cash and futures markets. Use of the SOQ means that final settlement prices must converge to values that reflect actual fills using market-on-open (MOO) orders. This assures arbitrageurs that they will be able to liquidate cash/futures basis trades at coordinated levels using MOO orders on the Final Settlement Date.

**Settle on Close?** - Significant difficulties are implied by a settlement at the close. Specifically, large order quantities would be entered in cash equities in the final minutes of the trading session.

These orders could be sizable noting that the NYSE has recently estimated that as much as 10% of its daily volume is contributed by index arbitrageurs.

Resulting volumes and volatility on the close could become unmanageable for NYSE specialists. NYSE rules do not protect specialists on the close to the degree that they may be protected on the open. The urgency of filling orders entered on the close constrains specialists' ability to manage the book in an orderly fashion. Further, NYSE rules provide limited ability to halt trade in imbalanced markets on the close, which could become a sensitive issue on Fridays just before weekends.

These were the issues that lead to the adoption of an SOQ in 1987 ... and in specific response to concerns expressed by the Securities and Exchange Commission (SEC) and NYSE. While settlement to the SOQ concentrates arbitrage related orders on the open, specialists find this arrangement much more manageable to the extent that they may absorb an imbalance on the open with the balance of the session to unwind their positions.

This is further complicated as CME Group's SOQ is coordinated with other institutions. S&P 500 options (SPX), traded on Chicago Board Option Exchange (CBOE), are likewise settled to the SOQ. CBOE traders frequently utilize CME Group stock index futures as a hedging vehicle.

**Conclusion** – While the SOQ occasionally departs from published index values on gapped openings, the benefits associated with the SOQ transcend any perceived shortcomings. The SOQ is a proven, robust, reliable settlement mechanism and has contributed to the stability of the financial markets over the course of many years.

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## S&P 500® SOQ vs. Spot Index Value on Recent Final Settlement Dates

	SOQ	Cash Open	Cash High	Cash Low
3/19/10	1,172.95	1,166.68	1,169.20	1,155.33
12/18/09	1,102.38	1,097.86	1,103.74	1,093.88
9/18/09	1,071.57	1,066.60	1,071.52	1,064.27
6/19/09	926.15	919.96	927.09	915.80
3/20/09	789.40	784.58	788.91	766.20
12/19/08	889.74	886.96	905.47	883.02
9/19/08	1,279.31	1,213.11	1,265.12	1,213.11
6/20/08	1,339.28	1,341.02	1,341.02	1,314.46
3/20/08	1,302.64	1,299.67	1,330.67	1,295.22
12/21/07	1,474.95	1,463.19	1,485.40	1,463.19
9/21/07	1,533.38	1,518.75	1,530.89	1,518.75
6/15/07	1,534.09	1,522.97	1,538.71	1,522.97
3/16/07	1,396.12	1,392.28	1,397.51	1,383.63
12/15/06	1,428.74	1,425.48	1,431.63	1,425.48
9/15/06	1,323.12	1,316.28	1,324.65	1,316.28
6/16/06	1,252.09	1,256.16	1,256.27	1,246.33
3/17/06	1,310.16	1,305.33	1,309.79	1,307.25
12/16/05	1,274.84	1,270.94	1,275.24	1,267.32
9/17/05	1,232.79	1,228.42	1,237.95	1,228.42
6/17/05	1,222.68	1,210.93	1,219.55	1,210.93
3/18/05	1,190.70	1,190.21	1,191.98	1,182.78
12/17/04	1,190.45	1,203.21	1,203.21	1,193.44
9/17/04	1,127.02	1,123.50	1,130.48	1,123.50

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