

# How to Read Open Interest Figures

## Introduction

Open Interest (OI), also referred to as Open Positions, is an important yardstick for gauging the activity in the derivatives market. It is often used as an indicator of the market size. OI is the total number of outstanding contracts that are held by market participants at the end of each trading day. There is, however, uncertainty from time to time about the application and interpretation of the OI figure. For more meaningful interpretation of OI, it is important to understand how the OI figure is compiled, and the major factors that impact the figure.

## How OI is calculated

OI is generally defined as the number of “open” futures or options contracts that have not yet expired, been exercised or been physically delivered. It is a general indicator of the depth or liquidity of a market and the use of a market for risk-and/or asset-management.

HKEx compiles two types of OI figures for futures and options contracts, the Gross Open Interest (GOI) and the Net Open Interest (NOI).

GOI, which is similar to the OI figures published by other derivatives exchanges or clearing houses, is defined as either the sum of the total number of long or short positions in a futures or options contract held by all market participants (note: the total number of long positions in a contract always equals the total number of short positions at any one time).

GOI of a contract is technically determined by summing up the total open long or short positions maintained by all Participants in the respective clearing house in that contract. HKEx provides several types of accounts to its Clearing House Participants. They comprise Omnibus Client Account, Individual Client Account, House Account and Market Maker Account. The Omnibus Client Account is provided to each Participant for maintaining the positions of all of its clients. Positions in this account will be recorded on a gross basis so that long and short positions belonging to different clients will not be netted off. In some circumstances, a Participant will ask HKEx to set up another type of client account, an Individual Client Account (ICA), for some of its specific clients who usually have large and complicated portfolios. The positions kept in an ICA are recorded on a net basis, maintaining a net long or net short position for a particular contract. Proprietary accounts (eg House and Market Maker accounts) are used for maintaining positions on a net basis. Since Participants maintain their client and proprietary positions on a gross and net basis (either as net long or net short positions) respectively, GOI of a contract is calculated by directly summing up all open positions maintained in the client and proprietary accounts respectively.

NOI, as suggested by its name, has added the “netting” effect. The long and short positions in a particular contract held by a Participant in all its accounts are netted to arrive at either a net long or net short figure before being summed up to arrive at the NOI. This represents the total exposure from individual Participants to the clearing house. NOI, which eliminates the gross effect, provides an alternative angle for analysis.

The following example illustrates how GOI and NOI are calculated:

Suppose there are only three Participants, A, B and C in the market holding the following positions in contract XYZ:

### GOI

Participant	Account	Long	Short
A	Omnibus Client	10	8
A	Individual Client	5	0
A	House	4	0
A	Market Maker	0	5
B	Omnibus Client	5	8
B	House	0	13
C	House	10	0
	Market Total	34	34

GOI of contract XYZ is 34.

### NOI

NOI of contract XYZ is calculated as follows:

Participant	Account	Long	Short
A	Omnibus Client	10	8
A	Individual Client	5	0
A	House	4	0
A	Market Maker	0	5
	Net Long Net Short	$\text{Max}(10+5+4-8-5,0)=6$	$\text{Max}(8+5-10-5-4,0)=0$
B	Omnibus Client	5	8
B	House	0	13
	Net Long Net Short	$\text{Max}(5-8-13,0)=0$	$\text{Max}(8+13-5,0)=16$
C	House	10	0
	Net Long Net Short	$\text{Max}(10-0,0)=10$	$\text{Max}(0-10,0)=0$
	Market Total	$10+0+6=16$	$0+16+0=16$

NOI of contract XYZ is 16.

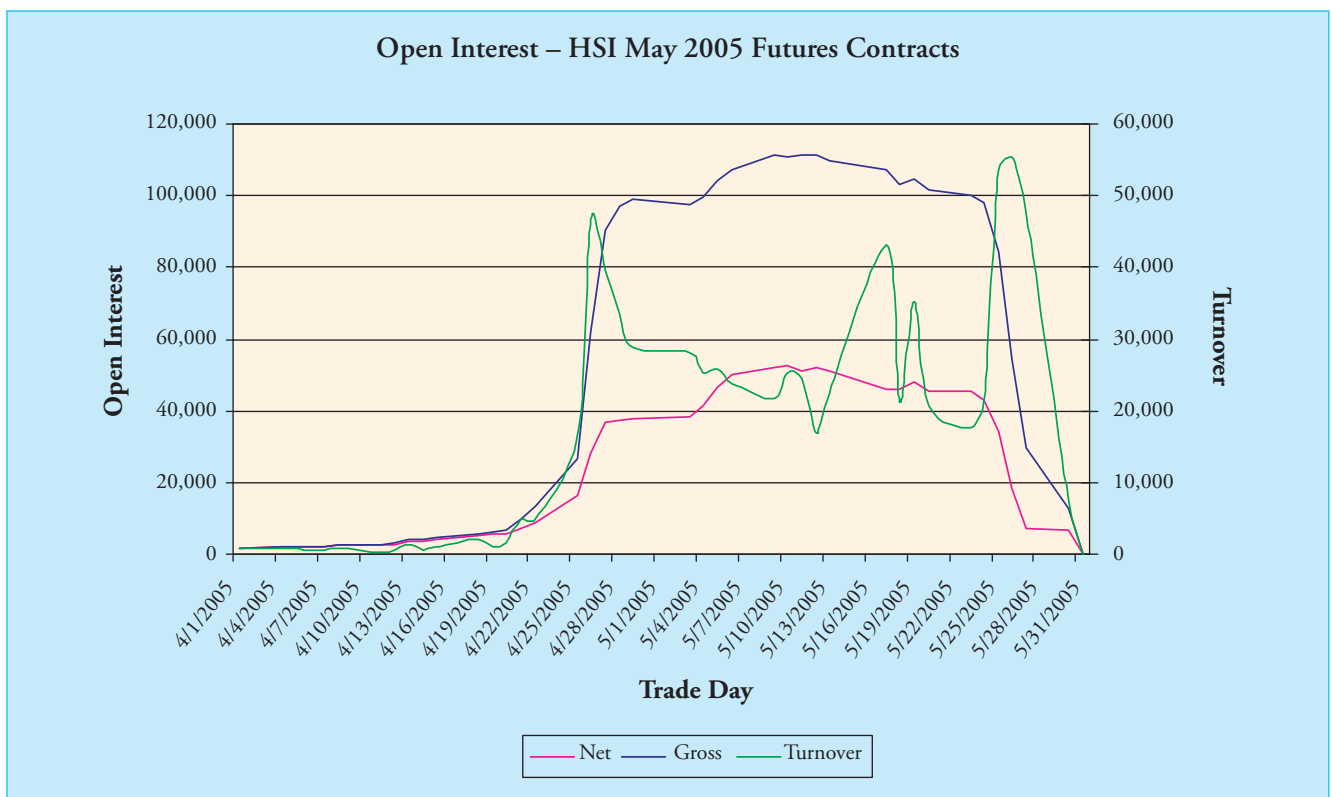
## Changes in OI

The change in OI can be brought about by various trading and clearing activities described below:

### Turnover

Though each trade concluded in the derivatives market will increase the turnover for that day, its impact on the OI depends on the type of the trade. In other words, the turnover in the derivatives market may not necessarily have a significant correlation to the OI. If both the buyer and the seller to a trade initiate a new position, OI will increase. If both the buyer and seller use the new trade to close an existing position, OI will decrease. In addition, if there are active day-trade activities which usually concentrate on spot month series, or if existing positions are transferred from one party to another, OI can remain more or less unchanged even though there may be very high turnover on that day. There are two common phenomena:

1. The turnover for the spot month series generally increases significantly with the increase in their OI during the period from the end of the previous month to early current month.
2. The turnover may increase significantly during the period approaching the expiry day when investors need to close out the spot month contracts and/or roll over to the next month contracts. During this period, the OI of the spot month series may drop significantly. For an example of this phenomenon, please see the May 2005 OI and turnover statistics for Hang Seng Index (HSI) Futures in the following chart.



Apart from trading activities, the OI figures can be affected by various clearing activities, of which the major activities are Position Netting and Trade Give-Up/Take-Up.

## **Position Netting**

As mentioned earlier, a Participant may maintain its clients' open positions on a gross basis. Subject to its clients' portfolio management instructions, a Participant may from time to time close out opposite positions of the same client by performing Position Netting. This will reduce the number of open positions, and reduce the GOI figures accordingly.

## **Give-Up/Take-Up on Trade Day**

Trade Give-Up/Take-Up is one of the major post-trade activities in the derivatives market. After concluding a trade, a Participant may give up the trade to another Participant on the same day for clearing. Give-up and take-up transactions are permissible provided that both parties have arrived at a prior consensus. Since both GOI and NOI will only be computed after the completion of all trading and post-trade activities of the day, same day trade give-up and take-up transactions will not affect the OI figures.

## **Historical Give up/Take up and Position Transfer**

Under rare circumstances, a Participant which fails to give up a trade concluded on the same day will need to give up the trade on the following day. When there are give-up and take-up transactions involving historical trades, or when a position is transferred from one Participant to another, the GOI figure will remain unchanged as long as the take-up party does not use the position or trade to close an existing opposite position. The impact to the NOI will depend on the relative long and short positions of the involved parties. All in all, give-up/take-up of historical trades or position transfers rarely occurs and its impact on OI figures is usually very minimal.

## **More points to note about OI**

### **Relationship between GOI and NOI**

The GOI and NOI generally move in the same direction — when GOI increases (decreases), NOI will increase (decrease). GOI is often greater than NOI. GOI and NOI provide different views of the derivatives market by considering different factors. GOI, which indicates the depth and liquidity of a market, is more important to investors, while NOI, which indicates the total exposure of Participants, is more meaningful to the clearing house. While GOI and NOI provide different views of the derivatives market, GOI may be more meaningful to investors in understanding market activity.

### **Usage of OI**

OI has been used by some analysts or professional investors as one of the many tools for trend analysis. By monitoring the changes in the OI figures at the end of each trading day, some predictions about the likely duration and direction of a market trend may be made.

However, investors should be aware that there are many factors influencing market prices and conditions. If OI is being used as an analytical tool, it should be applied with caution, and if in doubt, investors should consult investment advisers or brokers.

### **Dissemination of OI**

As a service to market participants, the GOI and NOI figures are published daily on the HKEx website (please see Daily Trading Activity & Open Positions Summary and Daily Trading Activity & Open Positions Highlights at <http://www.hkex.com.hk/futures/futuresdayrpt/dmreport.asp>).