Auditing of Derivatives in Crude Oil Indices

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< EXECUTIVE SUMMARY >

◆ With the petroleum sector being deregulated, oil derivatives are going to play an important role in oil industry. This also means that concurrent operation Audit of Derivatives in crude oil indices to identify the inefficiencies and improve upon them, becomes important.

Author has outlined the business process that an auditor has to consider while designing audit program. Author has also suggested that to mitigate possibilities of fraud and error, a concurrent audit on a fortnightly basis that does not disrupt the routines built into the system is the audit strategy to be adopted. Author has also suggested that the audit team should cross check all the communications not only for the confirmation but also subsequent changes by one of parties involved in the process.

THE BACKDROP

The Petroleum sector being deregulated and much will happen in the oil derivatives with private players posing big challenge in Risk Management. Indian Oil Corporation is commencing the futures trading in crude oil and risk management and it has tied up with British Petroleum and two batches of its executives have already undergone training in UK. This will open a new gamut of field for the auditing profession and this article highlights the nuances in the checks and balances it needs to set up and follow.

Crude oil purchase from Oil Majors, blending it with cutter stocks and sales to end users is a low margin, high risk business. A typical company operates from different coasts and also from other major ports of the world. It buys oil from Oil Majors or explores and extract the oil by itself and blend it with cutter stock and refine. The volatile nature of the crude prices is supported by derivative traders to mitigate the price and cash flow risks. The traders take forward positions with a rationale that price will go up [Long Position] or the price will go down [Short Position] on various indexes. The trade may in theory, be executed for any forward month either in Over the Counter Exchange [normally Swaps] or in Commodity Exchange like New York Mercantile Exchange [Options or Futures]. Thus it becomes important to have concurrent Operations Audit to identify the inefficiencies and improve upon them.

The author is member of the Institute. The views expressed herein are the personal views of the author and do not necessarily represent the views of the Institute.

UNIQUENESS OF THE CRUDE OIL MARKETS

About 20 currencies are frequently traded in financial derivatives market in the foreign exchange portfolio. In North American gas market, there may be 60 basis loca-

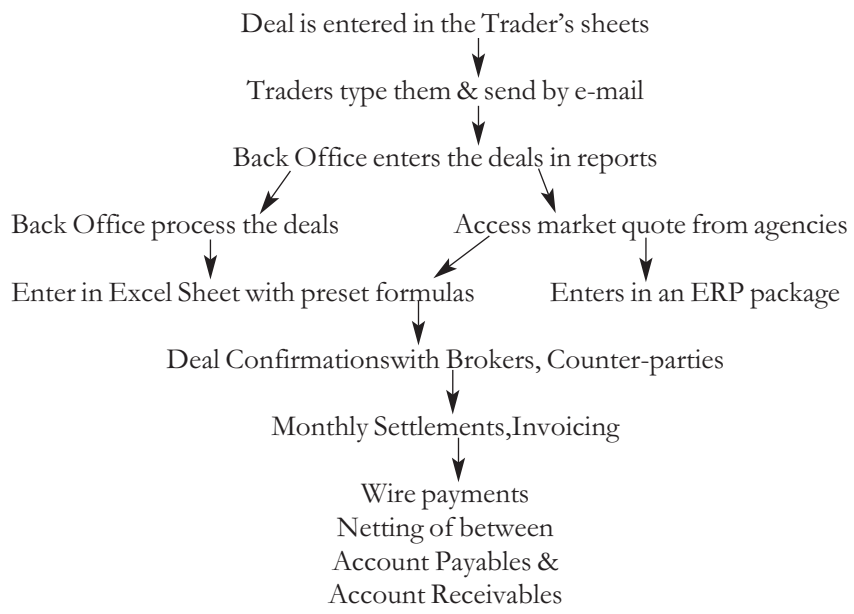
tions trading for two years at a given point. The auditor will have to understand the business language of the traders and the Port Managers to decipher the deals and subsequent changes made in the deals with a comparison to the physical side of the business.

Added to this is the Over The Counter markets where there are no standardized trading operations, though there have been some efforts in that direction. It becomes essential for the auditor to understand the OTC market practices and read through the contracts and interact with the traders, middle office and the back office.

THE BUSINESS PROCESS

The process mapping in the derivatives trading and settlement is depicted in Chart 1. We take each of these processes and outline the areas and critical points which an auditor must plan for in the audit program.

Chart 1



SYSTEMS AND PROCEDURES

The primary source document are the deal sheets typed by the traders. Here they enter the date, time, the oil index, quantity traded, long or short, whether it is a hedge or a speculation and the rationale for the trade. These needs to be corroborated with the back office with counterparty and broker confirmations in case of Swaps and with the daily statements sent by the clearing agents in case of Options and Futures. Margin money needs to be deposited with exchange in case the Mark to Market crosses the threshold limits set by the exchange. In case of the OTC market, the margin money as per the requirement of the contract between the parties needs to be deposited with the counterparty. More importantly this should be a concurrent and continuous audit rather than periodical as many millions are at stake.

TRADE CAPTURE

The first step is the traders noting down the deals in terms of products say Singapore 180 cst/RT Barge 3.5% etc., volumes in terms of barrels (in US markets) or metric tons (in Singapore markets), short or long positions and the price at which is struck. These details are noted in deal sheets of traders and then sent by e-mail to the back office. Some times traders make typo errors, and one wrong entry like "long" instead of "short" will swing the Mark to Market positions to the other side, affecting the Margin Calls from counterparties or more bonds from the exchange. Similarly, omission of one zero in 10,000 metric tons or errors in decimal places in prices would jeopardize the day's positions.

The back office staff are also prone to data entry errors on the same lines as the traders. In addition, if there be a spread between HSFO 380 and Gas Oil, it is reported by the trader as "HSFO 380- Gas Oil" whereas the market quotes are in the reverse Gas Oil – HSFO 380, the vector would reverse affecting both the Mark to Market and realized positions. These may go undetected even after the positions are closed. A concurrent audit on a fortnightly basis that doesn't disrupt the routines built into the system is the audit strategy to be adopted.

Missing a deal capture completely would be discov-

ered only when the margin call goes adverse or the position is closed before the expiry date or the deal itself expires and the back office will be at loggerheads with the traders when settlements come about. Either we would not have collected the receivables on time (if the position was favorable) or payables suddenly come out of the blue choking the finance department for unplanned fund requirements. This is one uncontrollable factor which the audit staff themselves cannot keep track of.

DEAL CONFIRMATION WITH COUNTERPARTIES, BROKERS AND CLEARING AGENTS

If there is a variation between the traders, brokers and counter party figures one cannot go by the majority rule and it becomes vital to go back to the trader and confirm instead relying on the numbers. The audit team should cross check all the communications not only for the confirmation but also subsequent changes by one of the parties involved in the process.

The next focus process is the confirmations received by the company from these various entities. Ideally, the confirmation sheet should consist of traders name, the name of the party, reference numbers, date of the deal, quantity with barrels/ metric tons, fixed and floating prices (in case of swaps), the contact information (Address, Phone, fax, telex numbers, e-mail ID of the front and back offices). This confirmation when received the counterparties usually just sign on the faxed copy indicating the agreement and fax it back or send separate confirmation letter or e-mail.

Certain companies do deals on behalf of their other group companies and it happens many times that the brokers or counterparties go to the parent company for settlements due to familiarity with the name or inadvertently to do so in spite of clear mention of the name and the logo. Here also the auditors assume great importance and monitor the back office communications. If not followed diligently, this may irk the traders who are erroneously approached by the brokers or counterparties. Worst scenario, the settlement is completed with the wrong party. This is another source of concern for the audit staff.

In fact, deal confirmation is the last opportunity to prevent a deal from being processed wrongly. The audit clerks must pay meticulous attention when there are numerous deals as the incidence of human error is higher.

MARKET QUOTES AND PRICE DISRUPTIONS:

For the current quotes, agencies like Platts, a division of McGraw Hill Inc publishes daily quotes based on market information. The forward month oil quotes are provided by agencies like A E Bruggemann, Prebon and similar others. These agencies might amend the prices based on new market information subsequently. Though the historical data can be extracted from such websites, as a precautionary measure hard copies can be filed as a part of the audit. The team must ensure that the source sheets print outs are taken on a daily basis and checked for any change.

Natural disasters or holidays will raise different type of concern when due to closure of the market the quotes may not be available. The audit staff will have to study the provisions of the term contract if there is any, with the counterparties to check for the fall back pricing. International Swap Dealers Association (ISDA) provide guidelines which are normally accepted in the Over The Counter (OTC) Markets. This guideline note is an important document in the audit process.

SPECIAL DEALS AUDIT:

It may not be possible to consider all the special deals in this article. We will just take up two types of deals. One Exchange for Physical (EFP) and another Term Deals. EFP's require the delivery of the quality of the crude or blended oil at the expiry of the derivative. Thus it becomes the duty of the audit team to coordinate with the scheduling desk where the physical production and supply are organized. The other deal is the Term Deal where in a trader enters an annual deal to buy or sell an oil index, say WTI crude 30,000 metric tons every month at a specified price. Here a concurrent audit becomes vital to keep track of the changes in mark to market (due to Platts quotes changes) on an going basis on that particular deal.

OTHER GROUP COMPANIES DEALS:

Deals may be done to hedge various cargoes reaching different parts of the world in which the group companies may be involved. The arms length nature, commissions involved, forward quotas used are the issues that needs to be checked for the proper audit, among other things.

The critical areas for auditing the derivatives are summarized in Chart 2.

Chart 2

Critical Areas for Auditing the Derivatives

1. Typo Errors
2. Formula Errors
3. Communication gaps
4. Mode of Communication
5. Agencies Amendments in market prices.
6. Resolving Price Disruptions
7. Provisions of the contract
8. Special Deals Audit
9. Trades done on behalf of the other group companies.

SETTLEMENTS AUDIT:

The monthly settlements differ between countries. In Singapore, the settlements are to be completed within fifteen days of the succeeding month and in USA it is within ten days. The auditor has to keep a check on the net outs between the Accounts Receivables and Accounts Payables with a counter-party and who makes the decisions for such net outs and whether it is in order. The process involved in the settlements should also be audited for.

The Auditor must also rely on the clearing statements sent by clearing agents like Refco, Fimat, Confirmation and Clearing Corporation and similar others, though these cannot be taken as a conclusive proof of evidence. These clearing companies are only for exchange traded derivatives like options and futures.

ACCOUNTING STANDARDS & STATUTORY AUDITS:

For US based companies FASB 133 is the standard for hedge accounting. If the Mark to Market positions is exactly 100% of the underlined physical oil, hedge accounting fully applies. The lower and higher limits are 85% and 125% of the underlying physical commodity, the excess or shortfall up to the lower and higher limits are booked into profit and loss account. The life under FASB 133 is very difficult as the company has to give all the documentary evidence to the Internal Revenue Service to justify the trades were in fact hedging and not speculation. As the audit professional, one should pay particular attention to FASB 133 and the norms released for derivatives accounting under Indian Accounting Standards. The audit work will be to close all the gaps before being queried by the Income Tax Department. The statutory audit provisions are also to be kept in mind when the audit program is designed.

MANUAL, TECHNOLOGICAL AND SYSTEMS AUDIT:

The audit staff's yet another focal area will be where manual processing of the deals is in vogue. Manual process is more error prone as it involves handling and matching of different media like e-mail, telephone, telex, fax, e-fax …

If the trades are processed by maneuvering on the MS Office Excel Sheets as many companies do, the auditor has to pay particular attention to the creation of links within the sheets, between the sheets in the same workbook and also between the workbooks. The formulas created should also be sample checked on a concurrent basis. This can be on a rotational sample basis in the excel sheets.

This excel sheet processing can be visualized in terms of one sheet each for swaps, options and futures, another one for the historical positions, yet another for the combined portfolio. There can be many variations on this. One can have volumetric positions sheet, another for Spread and so on …. The logic created by the back office staff should be verified by the auditors and more importantly the audit team must be involve when developing such computer generated computations.

Recently we have electronic filing systems for the trading which provides checks and balances for a major fraction of the critical points. The auditor has to familiarize himself/herself with the intricacies of such system to progress in the systems audit without much hassles. As a value addition, security of the trade information must also be ensured due to various reasons.

If the trades are process through an Enterprise Resource Package, the auditor must also focus on the flexibility of the package (in terms of how many times it allows the traders to make changes in the trades they have executed, fixing the responsibility level for different decisions, the format of the reports generated etc..) and should acclimatize himself in the dynamics of such a package.

THE CONCEPT OF MATERIALITY:

The Auditor can define say Rs.5,000 or Rs.10,000 or a suitable figure as a material amount, based on the business size of the company to treat a finding as a critical

one. One must also look at the variance of the Mark to Market positions between defined time slots, the special deals, the volumes involved and the time period involved in the forward deals. The staff should also insist on maintaining a report on a daily basis indicating the nature of mistakes who was responsible, systems error or non availability of quotes, financial effect of the error and the frequency of such errors.

Another critical issue is the security aspect. The trading positions must be protected wit firewall through adequate encryption. The company using their intranet can use the public and private keys so that only restricted management people have access to the trading positions. This is to safeguard that competitors do not know the trading strategies employed by the company. This is also to secure the figures from vast majority of the staff as the risk of competitors get to know the positions. There must also be a system wherein all the deals entered through telephones/messaging systems/intranets must be recorded for future verifications.

MANAGEMENT CONTROL REPORTS:

The Mark to Market on a daily basis needs to be checked by the auditor compared with the previous days. The outstanding open positions [Netted between Long and Short] are to be checked for every Trader, by index, by forward month. The Risk Policy statement must be checke for the Volume Limits, Rupee Limits an the Monthly Limits on a daily basis.

The cargo purchase for which the hedge position is taken has to be monitored continuously in terms of quantity, price, index. Whether the trader is taking additional positions that might deteriorate the profits or is he closing the old positions by reversing them all needs to be monitored. If by policy a specific hedge ratio needs to be maintained that has to checked for.

The mark to market on a weekly basis must be analyzed for every trader, by index, by forward month and by exchange and OTC traded indexes. Any abnormal deviation is to be tracked and the trader must be asked to give reasons for this. The fundamental and the technical reason given by the trader must be evaluated by the auditor by prudent analysis of the forward markets.

THE CHALLENGES AHEAD:

The knowledge and skills an auditor must possess are depicted in Chart 3 which he must focus on. The opportunities are ahead and so are the challenges for the Auditing profession. It becomes essential for those who want to specialize in derivatives audit to have a moderate knowledge in derivatives. Oil industry market and operations dynamics and critical understanding of the hedge accounting under FASB 133. Chart 3 give an idea on critical areas of auditing oil derivatives and the knowledge and skill sets for the emerging task in auditing. Much also depends on how the strategy of the government in deregulating the Petroleum sector and its integration with the global economy.

Chart 3

Knowledge and Skills Set Essential for Auditing

Knowledge Set:

1. Concept Knowledge in Derivatives & Products
2. Market dynamics of Oil indices and crude oil markets
3. Enterprise Resource Package

Skills Set:

1. Application of MS Office or similar systems.
2. Information Search through Scans, Telexes, Intranet etc.,
3. Interaction with traders and human resources skills

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