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RISK MANAGEMENT

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CASE STUDY SERIES

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Case Study 5 Answers

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Answers

The Copper King: An Empire Built On Manipulation

i. Speculative profits from Trading in copper

Speculative profits may be achievable from trading in copper because prices are volatile.

This is due to copper being an illiquid asset, eg. due to practical issues such as storage and transportation.

The degree of price volatility means that buying at a relatively low price (when supply exceeds demand) and selling when it is higher can yield profits even when storage costs have been netted off.

ii. Cornering the market

A trader 'corners' a market when they have purchased enough rights to a particular asset, via cash or futures transactions, so as to be able to set, or heavily Influence, its market price.

By purchasing these rights, an artificial shortage is created so causing a price spike.

The intent is that very high profits can be made on the stock that is sold, and that these outweigh any losses on excess stock sold later on when the price has fallen back to 'normal levels".

Other market traders who are aware of the attempted corner may be tempted to short the market in anticipation that the excess stock will need to be sold — thereby profiting from the associated price fall.

Sumitomo's enormous size and associated borrowing powers enabled Hamanaka to lake longer positions than any short speculators and hedge funds.

Only a small percentage of total supply may actually need to be controlled. This is because it is only necessary for other market players to perceive that control has been achieved in order to set price, perhaps due to a lack of accurate information.

Hamanaka controlled only 5% of the world's copper supply However, copper's illiquidity, the difficulties with transportation and the fact that even the largest

players only hold a small percentage of the total market made Hamanaka's 5% very significant.

Other market players must be unaware of what is happening as otherwise nobody will sell to the individual trying to corner the market.

This might be ensured by dealing through third parties (especially if overseas), as was the case with Hamanaka.

The copper stocks held by Hamanaka were stored in the US, away from the primary market in London where trades were being affected.

Poor information might also have resulted from insufficient reporting by futures exchanges (in this case open interest positions were not published by the LME.)

Market regulation must be ineffective at identifying and limiting actions necessary to corner a market.

iii. Components of the loss

In the falling market, losses from long positions would have crystallised when :

- closing out (cash market) positions (i.e. selling copper)
- and/or marking derivative positions to market (i.e. margin calls)

Hedging using futures

- The delta of a portfolio can be easily neutralized, at least daily, and at low cost, e.g. using futures contracts. However, for practical reasons, the gamma and vega will have been adjusted less frequently, leading to an Imperfect hedge

Writing options for premium Income

- Dynamic hedging is used to manage the risk from writing options. A trader will rebalance an option portfolio using forwards, futures and asset holdings in order to remain delta neutral. This rebalancing will often occur on a daily basis.

  However, a lack of traded derivatives or poor liquidity may make it difficult to maintain a Portfolio that is not just delta neutral, but also gamma and vega neutral.

Sudden shifts in copper price and price volatility would have led to losses on such Imperfect hedges.

When Hamanaka was removed from his trading post, knowledge of the structure of such hedges (delta, gamma, vega) may have been lost, or delayed in transfer, exacerbating such losses.

Sumitomo's delays in understanding and disclosing their position increased uncertainty in the copper markets resulting in further losses.

iv. Additional components of the ultimate loss

The initial estimate will not have been perfectly accurate, for example it will have been based on certain imperfect knowledge, models, data and assumptions.

In particular, those estimating the loss may have been subject to conflicts of interest and behavioural influences (e.g. anchoring and adjustment) that distort an individual's willingness or ability to provide unbiased estimates.

In addition, some losses may not have been immediately apparent at the time of the initial estimate. These might include:

- the cost of compensation and the associated legal fees in connection with all the 'innocent' third-parties.
- the cost of recovering monies paid inappropriately including, for exmple, bonuses paid to Hamanaka and others, based on incorrect financial performance.
- the cost of employing specialists (e.g. communication specialists) to handle the additional work in resolving the crisis.
- the indirect costs of extreme adverse publicity(e.g. upon reputation and brand value) and the direct costs of being forced to respond.
- the direction costs(e.g. additional staff turnover) and indirect costs(e.g. reduced efficiency) of depressed morale.
- the cost of lobbying regulators and legislators to limit punitive actions taken as a result of the scandal
- the eventual fines from regulators
- the cost of correcting a reduction in the capital base of the organisation.
- the reduction in business levels for the Sumitomo corporation and its related companies due to the loss of goodwill/trust with its customers.

v. Internal controls to mitigate such losses

Establish checks and balances

- The power to establish huge positions should not have been placed in the hands of a single employee-as appears to have been the case here.
- Hamanaka should not have been able to establish(off-book) brokerage accounts on behalf of Sumitomo without additional authorisation.

Keep your eye on the cash

- Information and monitoring system/process were clearly inadequate.
- If, was the case, huge paper profits were being reported (notwithstanding actual paper losses) then these should have triggered increased levels of monitoring.
- A clear separation of trading and reporting roles and the imposition of Chinese walls between key functions.
- _would have ensured that Hamanaka could not have, for example, falsified accounting reports, and hidden cash losses.

Know your business

- Management may not have fully understood the trades that were being reported. It is Plausible that documents were signed without reading or understanding them.
- This may be due to inadequacies of management training and/or an inappropriate management culture (e.g built on blind trust) Audits of risk-management culture/awareness/training should be undertaken on a regular basis.

Set limits and boundaries

- Employee should be required to take a minimum number of consecutive days holiday each year to reduce the possibility of frauds being left undiscovered.
- Enforced job rotation would act in a similar fashion.
- Hamanaka was willing to forge signatures on official documents. The assessment process of prospective employees should aim to identify where

personal values/morals or past history (e.g. criminal records) might indicate a predisposition to act inappropriately.

- Such assessments might also be performed periodically during employment
- The gamma and vega of a portfolio should be management using limits that will effectively limit the volume of options that a trader can write.
- Periodic comprehensive and independent reviews of such controls might have indentified an inappropriate exposure and/or hedging strategy.