Humans always learn from history and our students should also learn from the past. This is the first time a case study is used as the main topic in the RMBI Newsletter series. London Whale Risk in 2012 is chosen as the topic of this chapter.

This issue mainly focuses on the risks involved, including operational risks, analysis of VAR modeling as well as the influence of the Basel regulatory standard.
Introduction

In May 2012, JPMorgan Chase’s Chief Investment Office announced trading losses of US$2 billion which shook the financial world. A trader in the bank’s London branch named Bruno Iksil played a key role in this incident.

The purpose of setting up the CIO is to maintain an investment portfolio to manage the bank’s excess deposits, a team of professionals would manage daily investment activities. According to JPMorgan Chase, the deposits managed by the CIO are “mostly uninsured corporate deposits”, but also included some insured deposits. By 2012, the CIO was managing portfolio of approximately US$350 billion. This value was quite significant when compared with the activities of JPMorgan’s other departments.

The CIO was originally responsible for supervising the bank’s internal treasury function, but was compartmentalized into an independent office later on. In terms of the bank’s asset management, both the Treasury office and the CIO have similar tasks. However, one difference is that the Treasury office focuses more on shorter-term asset liability management. In March 2012, the CIO stated the CIO’s “key mandate” was to “optimize and protect the firm’s balance sheet from potential losses, and create and preserve economic value over the longer-term”.

Cause of incident

# Reasons for Bruno Iksil to hold CDS

After the Global Financial Crisis in 2008 and the European Debt Crisis in 2010, default rates all over the World began to drop. At the time, Bruno Iksil decided to accumulate large amounts of credit derivatives with different maturity dates as he believed that the credit market was going to be boosted by strengthening financial markets.

His aggressive investment strategy attracted the attention of JPMorgan’s competitors, including Blue Mountain Capital and Saba Credit Management, which took up opposite bets.

# Impact of Large Credit Derivative Positions

The amount of credit derivatives held by the CIO was estimated to be worth about US$100 billion which accounted for a major proportion of the credit derivatives market. Therefore, a small change in market price of the derivatives could eventually inflict significant losses on the CIO.
# CDS IG9

The main derivative in the CIO’s portfolio was Markit CDX NA IG9, a (tradable) credit derivatives index constituted by 125 equally weighted CDS from about 8 sectors.

CDS IG9投資組合

Markit CDX NA IG9 是首席投資室投資組合中的主要產品，其由125隻均權分佈的信用衍生品所組成。而這些產品則主要來自8個不同行業。

Investment grading distribution

Business sector distribution

A credit derivative index is easier to manage when compared with a single credit default swap. Owing to the number of high-profile companies (included in the index), Bruno Iksil chose this index to track the health of corporate debt.

由於信用衍生產品指數較單一產品易於管理，以及CDX IG9投資組合包含不少備受矚目的公司，因此布魯諾•伊克西認為此項指數能夠反映及監察市場的債務狀況。
Catastrophic Results

Because of the illiquidity of the credit derivative market and the slow recovery of global markets, bearish market sentiments prevailed. Credit derivatives started losing their value and the CIO sustained large losses. On March 23, 2012, the CIO’s head Ina Drew suspended the trading of the Synthetic Credit Portfolio (SCP). Jamie Dimon, CEO of JPMorgan Chase, said “the strategy was flawed, complex, poorly reviewed, poorly executed, and poorly monitored. The Portfolio grew into something which posed a new and potentially large risk to the firm rather than an entity that protects the firm.”

Trading strategy of London Whale

Aside from CDX IG 9, the scandal also involved other credit derivatives. Iskil’s trading strategy was to buy short-term swaps and sell long-term swaps, which would produce a “flattening effect”. In other words, the strategy would be profitable when the curve of the asset price against maturity flattens since the price of short-term swaps would rise faster than decreases in the value of long-term swaps.

Iksil hoped to capitalize on European economic instability and the anxiety in the markets which would cause a rise in the price of short-term credit products. However, global markets did not experience any major upheaval because of (government) bailouts and interventions.

Financial markets did not move as Iskil had expected, the problem was also further exacerbated by the accumulation of credit derivatives that required new trades to maintain a balance in the market and deal with the expiring contracts. Moreover, in the small CDS market, hedge fund managers had noticed JPMorgan’s positions. Being targeted by competitors, Iskil had no choice but to close the account which led to huge losses for his bank.

除了CDX IG9外，倫敦鯨的投資組合同時亦包含了其他類型的信用衍生產品。布魯諾•伊克西的投資策略為買入短期證券，同時賣出長期證券，以製造出「風險變平」效果。換句話說，只要短期產品的價值上升速度比長期產品的下跌速度快，便能令資產價格與期限的關係曲線變平，為其投資組合帶來回報。

由於歐洲市場的不穩定性，布魯諾•伊克西期望市場焦慮能令短期信用產品價格上升。但在國際援助和各國支付的干預下，全球金融市場並沒有受到重大的衝擊。

真實的市場狀況出乎布魯諾•伊克西的意料，信用衍生產品的累積亦令問題進一步惡化。由於需要維持信用市場的平衡及處理信用衍生產品過期問題，布魯諾•伊克西不得不繼續進行新的交易。由於亦因信用市場規模較細，不少對沖基金經理都留意到了摩根大通的交易，並展開狙擊。最後，布魯諾•伊克西亦未能停交易，並造成是次巨額虧損。
Consequences of the London Whale (Trades)

倫敦鯨事件的後果

 Fine

JP Morgan was fined US$920 million for violating both banking laws and securities laws. Banking laws were violated because of the use of insured deposits for high risk trading, while the violation of securities laws had to do with the filing of false information with the Securities and Exchange Commission (SEC).

The total US$6.2 billion losses was only a small portion (1%) of the bank’s balance sheet, it’s capital could easily absorb the losses incurred. However, the potential embedded risks should not be neglected.

摩根大通因利用受保障的存款作高風險交易及向美國證券管理委員會提供失實的資訊而違反了規管銀行及證券的法例，並被罰款9億2千萬美元。

是次意外總共造成620億美元損失，雖然這只佔其資產負債表的百分之一，能被其營運資金輕易吸收，但其所呈現的潛在風險卻不容忽視。

 CIO’s restructure 重組首席投資室

Two former London-based traders of JP Morgan, Javier Martin-Artajo and Julien Grout, were charged by US prosecutors on “four counts of falsification of books, wire fraud and making false statements to the U.S. Securities and Exchange Commission”. Bruno Iksil escaped being charged for his part in the US$6.2 billion scandal by helping the US authorities' indictment of his two colleagues.

The London Whale (Trades) showed clearly that there was a serious lack of communication between the CIO and CRO. JP Morgan subsequently restructured the unit by merging the CIO and treasury which managed the bank’s funds.

摩根大通兩名前交易員Javier Martin-Artajo及Julien Grout被美國控告四項罪名，包括偽造假文件、電詐欺及向美國證券管理委員會作虛假聲明等；而布魯諾•伊克西則因協助美國當局逮捕相關人士而避過造成60億美元損失的控罪。

倫敦鯨事件明確顯示出首席投資室與首席風險管理室之間溝通不足。摩根大通隨後重組了整個部門，將其與原先負責管理銀行資金的財務部門合併。
# JPMorgan’s reputation

JPMorgan’s reputation was severely tarnished. Originally seen as the best risk manager on Wall Street, the US$6 billion loss and US$920 million fine left people with the impression that the bank was incapable of handling credit derivative products. “It (The London Whale Trades) was extremely embarrassing, opened us up to severe criticism, damaged our reputation,” commented Jamie Dimon in an April letter to shareholders.

除了罰款以外，摩根大通的聲譽亦嚴重受損。一度被視為華爾街最出色的風險管理師竟演為摩根大通帶來60億美元的交易損失及近10億美元的罰款，令外界認為摩根大通沒有能力處理信用衍生產品。傑米•戴蒙於四月致股東的函件中表示，這是極為尷尬的事件，銀行因而受到指責，形象嚴重受損。

# Decline of stock price

Public reaction could somehow be reflected by the company’s stock price. After JPMorgan reported the US$2 billion losses on May 10, the market reacted quickly, the stock price plunged from US$40.74/share on May 10 to US$36.96/share on May 11. On the announcement of Ina Drew’s retirement and disclosure of more losses, the stock price further declined to US$31/share on June 4, wiping out 24% of its value since May 10.

公眾對是次事件的反應盡在摩根大通的股價上表現無遺。在摩根大通於五月宣布錄得20億美元損失以後，市場隨即作出反應，摩根大通的股票價格由當日每股40.74美元急瀉至翌日每股36.96美元。加上首席投資官主管理任，以及損失數字進一步上升，摩根大通的股價於六月四日進一步跌至每股31美元，跌幅高達24%。從摩根大通股價圖可見，五月份的下跌正正反映了倫敦鯨事件對摩根大通造成的影響。

Source: Thomson Reuters
Shareholders questioned Jamie Dimon’s dual Chairman-CEO role in 2013, but since he was not an instigator of the London Whale trades, and 68.8 percent of shareholders supporting him, he kept his position. There was a similar proposal in 2012 to split Jamie Dimon’s roles but it was rejected. The astonishing fact was that only 40 percent of shareholders supported him in 2012, which was far below the support he had in 2013. This also proves the modest effect the London Whale trades had on JPMorgan in terms of the bank’s performance.

股东們曾於2013年質疑傑米•戴蒙的主席兼行政總裁雙重身份，但由於傑米•戴蒙不是倫敦鯨事件的始作俑者，加上有68.8%股東投票支持，因此保住了其原有職位。事實上，2012年也有同類投票事件發生，當時他只取得40%股東支持，這亦顯示，倫敦鯨事件對摩根大通的影響有限。

Value-at-Risk modelling is one of the five risk controls used by JPMorgan. It shows a summary of the mark-to-market losses with a specified confidence interval over a targeted time horizon.

# Failure of the New VaR Model

In order to lower the amount of risk-weighted assets, a new VaR model was developed to replace the original “linear sensitivity model”.

Initially, the new model was able to achieve its established objective of reducing the VaR of the CIO from US$132 million to US$66 million which was nearly 50%. According to a report from Bloomberg, the new model stabilized the VaR of the CIO to the range of US$55 - 64 million.

However, after February, the computed VaR from the new model showed the gap between the value and the bank’s risk limit started to diminish, hinting at potential losses.

新風險價值模型的挫敗

為了減少風險加權資產的數量，一個新的風險價值模型便被引入及取代原來的線性模型。

起初，新的模型能將首席投資室的風險價值由1億3,200萬美元減至6,000萬美元，減幅近50%，並達到其設立的目標。根據彭博社的報導，新的風險價值模型能將首席投資室的風險價值維持於5,500至6,400萬美元的水平。

但在二月過後，由新模型計算出來的風險價值顯示，其數值與銀行的風險限制的距離開始收窄，這是潛在損失出現的警號。
The bank abandoned the new model after the exposure of the CIO’s US$2 billion trading loss which showed a deviation of about 23 sigma from the mean value in the old VaR model. Compared with its competitors, only JPMorgan had a positive change in VaR.

# Limitations of the VaR model

Using the VaR model in such a scenario is not appropriate because of the following reasons.

As mentioned, the credit derivative market lacks liquidity. While JP Morgan had included a historical simulation method in its VaR model, small amounts of trading records would adversely affect the quality of data used in the computation process of the VaR model. Also, testing the new model without sufficient amount of good quality data would easily lead to computation errors as it is difficult to trace these errors in the formula.

In addition, the formula and coding were frequently changed due to errors, and the computation process was not controlled effectively. Furthermore, there were impacts from incorrectly estimating the hazard rate and the correlation risk, the outcome was the model reported a misleadingly lower VaR value.

筆者認為將風險價值模型應用於是次事件並不合適，是因為：

由於信用衍生產品市場流動性不足，當摩根大通將歷史模擬方式應用於風險價值模型時，少量的交易紀錄會影響數據的質素，從而在計算過程中容易發生錯誤。此外，在缺乏足夠的優質數據作測試的情況下，很難從方程式中找出計算錯誤。

再者，新模型的方程式與編碼因失誤而經常受到更改，以使計算過程未能受到有效的控制，加上涉及率和相關性風險的估計錯誤影響，新的模型不但不能有效地顯示摩根大通所受的風險價值，同時亦錯誤地計算出過低的數值，因而使交易員產生錯誤，認為摩根大通還有能力承受更多風險。
“Operational Risk

# Structural Problem

Although JPMorgan’s revenues were able to absorb the trading loss, the London Whale Trades has raised the awareness in the reporting system in the CIO.

With reference to the structure of the CIO, Irv Goldman, JPMorgan’s Chief Risk Officer (CRO), reported to Ina Drew, the bank’s Chief Investment Officer. Therefore, it was not possible for CRO to alert anybody but Ina. When there was a breach in the bank’s protocol, the information could only be shared with the CIO but not the senior credit risk officer.

In addition, the report to Ina Drew did not contain adequate information. Because of the inadequate reporting system, Ina was apparently not aware of the actual situation due to the lack of information on the bank’s real risk exposure.

To improve the structure of the CIO, it is suggested that the CRO should report directly to the senior credit risk officer who serves an independent monitoring role, which would allow information of any breach within the investment portfolio to reach all relevant staff, including the CEO. Furthermore, a comprehensive reporting system should be developed to allow prompt and accurate information exchange within the company.

JPMorgan’s Risk Control

Risk management has always been an important part of an investment bank. In order to manage the risks of its investment, JP Morgan introduced five risk controls to monitor its trading activities. They are Value-at-Risk model (VaR), Credit Spread Widening 01 (CS01), Credit Spread Widening 10% (CSW10%), Stress Loss Limits and Stop Loss Advisories.

營運風險

架構問題

雖然摩根大通的盈利能夠彌補是次事件的損失，但倫敦鯨事件仍引起了銀行對首席投資官報告機制的關注。

根據首席投資官的架構，風險管理總監Irv Goldman只是隸屬投資總監之下，因此不可能要求其向Ina之外的其他人士作出警報。當風險浮現時，資訊只能在首席投資官內互通，資深的信用風險管理部門卻無法知悉。

此外，向Ina Drew呈示的報告並沒有顯示足夠的資訊。由於報告機制的不足及欠缺對風險暴露的詳盡資料，Ina Drew 顯然沒有察覺事件的真實狀況。

要改善首席投資官的架構問題，風險管理總監務必獨立監察者身分，直接向資深信用風險管理人員匯報，以便當有風險浮現時能知會包括行政總裁在內的所有有關職員。除此之外，摩根大通亦需制定一套完善的匯報機制，亦確保公司內的資訊交流能迅速而準確進行。
Basel Accord and the London Whale (Trades)

巴塞爾協定與倫敦鯨事件

The Basel Accord has been in force since 1988 to ensure the safety of the global banking system. With a continuously strengthened capital framework and enhanced governance and risk management, the latest updated version, known as Basel III, is a sophisticated set of regulations on capital requirement and liquidity standard of international banks.

However, the Basel Accord is only an agreement without any legal authority, which means the Basel Committee cannot strictly enforce the regulations in a country when overruled by other judgments. The United States is one of the countries which have not implemented Basel II in full because of blockages from thousands of banks. At the time of the London Whale trades, the US was still debating whether to implement Basel III.

Most importantly, even if the Basel Accord was implemented successfully, it was still unsure whether the London Whale trades could be prevented.

The first problem is that the calculation of risks associated with assets is subjective. According to Basel, banks should hold a certain amount of capital the amount of which would depend on banks’ Risk-Weighted Asset (Basel II required banks to hold capitals of 8% of Risk-Weighted Asset). However, it is the banks themselves, not any objective third party, which are responsible for estimating how much capital they should keep. Incorrect estimations would occur, as in the case of JPMorgan with their new VaR modeling.
The other problem is the difference in accounting standards in different countries. US banks prepare their balance sheets under GAAP rules, which are different from those in the other countries such as the UK. This can lead to problems. In this case, regarding the netting activities of banks, under GAAP rules, within the same party, the winning and losing positions can be cancelled out, including credit derivatives. That means if JPMorgan's Synthetic Credit Portfolio can successfully offset the investment of spare cash, the Basel capital requirements could do nothing to restrict such trades since they could be hidden from the banks' balance sheet, which was opposed to Basel's purpose of governing banks and raising their transparency.

After 20 years of revision, enhancement and implementation, the Basel Accord still has a number of pending tasks and problems which need to be solved before it can serve to ensure a safe global banking system. The London Whale Trades indirectly exposed the flaws of the Basel Accord, namely that the definition of banks’ minimum capital requirement is too subjective. This issue reminds us of the importance of risk management and the urgency of implementing the Basel Accord according to international standards.

Another issue is that different countries have different accounting standards. The US banks use GAAP (Generally Accepted Accounting Principles), while other countries use IFRS (International Financial Reporting Standards). This can lead to inconsistencies in financial reporting and regulatory requirements.

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