

Considerations Beyond the Fraud Triangle in the Fraud at Société Générale

C. Richard Baker

Bruno Cohanier

Nancy J. Leo

I. Introduction

In addition to several pedagogical cases,¹ numerous newspaper and magazine articles have described the fraud at Société Générale that took place in 2008.² This paper is not intended to be another discussion or description of the fraud or a pedagogical case. The purpose of the paper is to address the question whether there may have been factors beyond those of the traditional "fraud triangle" which contributed to the breakdowns in internal controls at Société Générale. Among the factors considered are: 1) certain cultural and ideological differences specific to France which may have led to a weakening of internal controls; 2) the possibility of collusive behavior; 3) willful blindness on the part of bank management even though there were well-designed controls in place; and 4) certain capabilities of the fraud perpetrator related to knowledge about how internal controls might be overridden. The contribution of the paper is to extend prior research focusing on the fraud triangle (see for example: Kranacher et al., (2010), Dorminey et al., (2010) and Fritz-Morgenthal and Rafeld (2010) through a study of the fraud at Société Générale.

The remainder of the paper is organized as follows. Section II outlines the basic elements of the fraud perpetrated at Société Générale. Section III reviews the fraud triangle and proposes some additional factors beyond the fraud triangle which may have contributed to the breakdowns in internal control at Société Générale based on a study of the Kerviel fraud. Section IV discusses two additional factors that may have contributed to the fraud. Section V concludes the paper.

II. The Fraud at Société Générale

Brief History of Société Générale

Founded in 1864, Société Générale became an important source of capital for the rapidly growing French economy during the nineteenth and twentieth centuries. Just prior to World War II, Société Générale had 1,500 branches, including several branches in the United States and other countries. Following World War II, the French government nationalized the bank. In 1987, the government returned Société Générale to the private sector and by the end of the twentieth century Société Générale had reestablished itself as one of the largest and most important financial institutions in the world. By 2007, the bank operated in almost ninety countries, had total assets of 1.1 trillion Euros, and had more than 130,000 employees worldwide (Société Générale, 2008).

*Background of the Fraud*³

¹ See for example: Carnac and Dykman (2011); Knapp and Knapp (2011); Beasley et al., (2015).

² See for example: Eyal (2008), Gatinois and Michel (2008), Gauthier-Villars et al (2008), Hanes (2008), Jolly and Clark (2008), Kennedy (2008), Le Monde (2008), Peterson (2008), Routier (2008), Schwartz and Benhold (2008).

³ The section is derived from a report prepared by the General Inspection Department (Internal Audit) of Société Générale issued in May 2008 (General Inspections Department, 2008). See Appendix A for a summary of the report.

In 2000, Jérôme Kerviel joined the “back office” (i.e., operations, internal audit and compliance) department of the Global Equity and Securities Solutions (GEDS) division of Société Générale (see Figure 1 for an organizational chart of the bank) after completing a master's degree in banking operations at a branch campus of the University of Lyons. For four years, he served as an internal auditor with the GEDS division. In 2005, Kerviel transferred to the Delta One Listed Products (DLP) trading desk within the GEDS division where he became a junior trader (see Figures 2 and 3). At the time of the fraud, in December 2007, GEDS had 1,365 employees divided into four main areas (see Table I for list of the categories of products traded or sold by the GEDS division). The DLP trading desk, where Kerviel worked, was located in the Arbitrage trading product area of GEDS. The DLP trading desk was restricted to making simple trades for the purpose of hedging the overall portfolio risk of the bank. In particular, Kerviel's job was to take positions on major European stock indexes such as the Euro Stoxx 50, Germany's DAX Index and France's CAC-40. This was considered to be a low risk trading operation (Gauthier-Villars et al., 2008a). [see Figure 1, pg 470; Figure 2, pg 471; Figure 3, pg 472; and Table I, pg 473]

Elements of the Fraud

Beginning in 2005, Kerviel began making unauthorized trades and exceeding the size limit authorized for his trades.⁴ The key element Kerviel's fraud was a technique that has been used in other securities frauds, namely, recording fictitious transactions that appeared to be opposite or offsetting transactions with respect to his unauthorized trades, thereby making it appear that the risk to the bank was zero. For example, if Kerviel purchased a block of securities, he would then record an offsetting but fictitious sale of similar securities. If he took a short position in a block of securities, the fictitious transaction that he recorded would be a long position in those securities or similar securities.

At one point, Kerviel had outstanding positions that exceeded the bank's total shareholders' equity of thirty-three billion Euros. In late 2007, he had a one billion Euro gain on a series of unauthorized trades. During the first few weeks of January 2008, he made several large trades predicated on his belief that European stock market indices would turn sharply higher. Instead, those markets declined, resulting in an unrealized loss of one billion Euros. On Friday, January 18, 2008, the bank's management decided that the positions needed to be closed in order to avoid potentially catastrophic losses, and between January 21 and 23, the open positions on Kerviel's unauthorized trades were closed. Unfortunately for Société Générale, European stock market prices fell sharply during that three-day period. Those falling stock prices caused the loss on Kerviel's January trades to reach six billion Euros, or roughly twenty percent of the bank's equity capital.

Shortly after the disclosure of the fraud, the bank's Board of Directors authorized the bank's General Inspections Department (Internal Audit) to investigate the fraud. A summary of the report of the General Inspections Department is included in Appendix A of this paper. The Board of Directors also retained PricewaterhouseCoopers to review the report of the General Inspections Department and to advise the Board on further steps to prevent future frauds. A summary of the report of PricewaterhouseCoopers is included in Appendix B of this paper. These reports describe the details of the fraud and the breakdowns in internal control that allowed Kerviel to violate credit and size limits in a way such that the bank's back office did not notice the trades. The unauthorized trades were not detected because Kerviel had knowledge of the bank's internal control procedures and he knew when checks would be conducted. As mentioned above, the primary technique that he used to hide his unauthorized trades was to enter into fictitious trades in the opposite direction in order to mask the real trade. It is also alleged that he misappropriated the computer log in and password controls of colleagues both in the trading unit and the information technology section. Eventually the bank's internal control procedures led to the discovery

⁴ This section is based on contemporary accounts written just after the disclosure of the Kerviel fraud. See Footnote 1.

that a particular customer (i.e., Deutsche Bank) had unusually large trading balances. When asked about the trading balances, Deutsche Bank denied knowing about these trades. This discovery eventually led to discovery of the Kerviel fraud (Gauthier-Villars et al., 2008a).

The following section reviews the elements of the "fraud triangle" and discusses whether there may have been factors beyond the fraud triangle which contributed to the breakdowns in internal controls at Société Générale.

III. Beyond the Fraud Triangle

The elements of the fraud triangle as developed by Donald Cressey in his book *Other People's Money* (1973) include:

1. Perceived pressure—need for money, etc.
2. Perceived opportunity—a situation that enables fraud to occur (often when internal controls are weak or nonexistent)
3. Rationalization—justification for actions seemingly out of character for the fraud perpetrator

The fraud triangle has been widely used to understand the reasons and motivations for fraudulent acts (Wells, 2008; Albrecht, 2014). However, certain shortcomings to the fraud triangle have been pointed out. In particular, Kranacher et al., (2010), Dorminey et al., (2010) and Fritz-Morgenthal and Rafeld (2010) have suggested that the fraud triangle ought to be considered to be more like a diamond, with an added factor of "capability", that is, the capability of the person to commit a fraud. In addition, Kranacher et al., (2010) suggests that there may be a difference between "accidental fraudsters" (those who do not necessarily intend to commit fraud) and "predators" (those whose intend to commit fraud).

Based on the work of Kranacher et al., (2010), Dorminey et al., (2010) and Fritz-Morgenthal and Rafeld (2010), the following sections discuss some additional factors beyond the fraud triangle which may have contributed to the breakdowns in internal controls at Société Générale. Among the factors considered are: 1) certain cultural and ideological differences specific to France which may have led to a weakening of internal controls; 2) the possibility of collusive behavior; 3) willful blindness on the part of bank management even though there were well-designed controls in place; and 4) certain capabilities of the fraud perpetrator related to knowledge about how internal controls might be overridden.

Cultural and Ideological Factors as Motives for Committing Fraud

One potential factor beyond the fraud triangle relates to cultural or ideological differences among countries in relationship to fraud (Menon, et al., 1999; Bierstaker, 2009). It is often assumed that the primary pressure for fraud comes from monetary considerations. This factor does not seem to have been present to any significant degree in the Kerviel fraud, in that he did not benefit financially in a direct way from his fraudulent practices. Dorminey et al., (2010) suggest an extension to the motivation dimension of the fraud triangle using the concept of MICE (i.e., money, ideology, coercion and ego or entitlement). In the Kerviel fraud, it appears that the factors of ideology and entitlement may have been present.

The background of traders at Société Générale corresponds generally with the French sociologist, Pierre Bourdieu's, theories about class distinctions (Bourdieu, 1977). According to Bourdieu, class distinctions in France are determined through a combination of social, economic, and cultural "capital". Society incorporates "symbolic goods, especially those regarded as the attributes of excellence, as weapons in the strategies of distinction" (Bourdieu, 1977, p. 66). Attributes that are considered to be important are shaped by the interests of the dominant class. Bourdieu emphasized the significance of cultural capital by arguing that "differences in cultural capital mark the differences between the classes" (Bourdieu, 1977, p. 69).

Jérôme Kerviel grew up in a working class family in the economically depressed region of Brittany in France. His mother was a retired hairdresser and his late father, Louis, was a metal worker. Kerviel

obtained a bachelor degree in finance at the University of Nantes in 1999. He then completed a university diploma in bank operations at a second tier business school affiliated with the University of Lyons. He began his career at Société as an internal auditor in the "back office".

In France's hierarchical society where educational background is very important it was unlikely that Kerviel would be allowed to become a trader in the "front office". Educational background has a disproportionate influence not only on employment opportunities but also the ability to progress within an organization once hired (Schwartz and Bennhold, 2008b). Kerviel may have wanted to prove that he could compete with his colleagues from elite educational institutions despite his modest educational credentials and working class background. The ideological aspect of the MICE extension of the fraud triangle may have played a role in two ways. First, there was the ideology of the bank which viewed traders as persons who had attended elite educational institutions, and second there was the ideology of Kerviel himself who may have felt entitled to recognition as an excellent trader despite his lack of appropriate educational background.

Thus, the question of cultural or ideological differences in a society like France where such differences are significant may be important when studying fraud. Because Kerviel came from a working class background which did not correspond with the stereotype of the well-educated trader, he may have tried to achieve recognition by taking large unauthorized risks in order to make profits for the bank, but not directly for himself. Since he was initially making profits, he may have felt entitled to recognition as an excellent trader (Gauthier-Villars et al., 2008; Peterson, 2008).

Collusive Behavior as a Factor in Perceived Opportunity

Dorminey et al., (2010) indicate that the "perceived opportunity" dimension of the fraud triangle does not consider collusive behavior. The report of the General Inspection Department (see summary in Appendix A) indicates that there may have been collusion between Kerviel and an unnamed Middle Office trading assistant. The report states that a large number of Kerviel's fraudulent transactions were entered into the computer system by the trading assistant who did not obtain proper explanations regarding their validity. This allowed Kerviel to conceal the earnings generated by his fraudulent positions. Since there have been no subsequent prosecutions of individuals other than Kerviel with respect to the fraud, there may not be sufficient evidence to support the charge of collusive behavior.

However, despite the lack of evidence of direct collusion between Kerviel and a Middle Office trading assistant, there may have been a sort of implicit collusion with others persons in the organization. Because of the size of Kerviel's trades, it appears that that someone in the organization must have been aware of what he was doing. Kerviel gave credence to this theory during his interrogation by law enforcement authorities. He testified that his superiors had turned a blind eye to his unauthorized trades as long as he was making profits, and only took exception to them when he incurred the loss in January 2008. Kerviel went on to maintain that his activities were part of a culture of ignoring internal controls that prevailed among traders which implicitly had the bank's approval (Allan, 2008). This type of implicit collusion might also be viewed as a sort of "willful blindness". The factor of willful blindness as a contributing factor in breakdowns in internal control is discussed in the following section.

Willful Blindness as a Factor in Breakdowns in Internal Controls

Kerviel has claimed throughout all the legal proceedings that have been brought against him, that his superiors' overlooked his fraudulent activities because he was making profits (Kerviel, 2010). Evidence of the possibility of willful blindness can be found in the investigative report issued by PricewaterhouseCoopers in 2008 (see summary in Appendix B), which revealed that Kerviel's activities raised red flags which were not addressed. In particular there were warnings from the Frankfurt-based derivatives exchange Eurex, which led to seventy-five internal alerts at Société Générale. Kerviel's immediate supervisor admitted that he had been contacted by the bank's compliance department in November 2007 following an inquiry from Eurex. Eurex was seeking explanations about Kerviel's

trades. One trade in particular, a purchase on October 19, 2007, reportedly involved 6,000 DAX index futures contracts valued at over one billion euros.

Nothing was done of about this alert and ultimately, France's banking regulator fined the bank four million euros in July 2008 as a result of this trade for having deficient internal controls over trading information systems. The PwC report also indicated that Kerviel's supervisors overlooked unusually high levels of cash flow and other accounting anomalies such as high brokerage expenses, as well as a large jump in Kerviel's trading gains in 2007, when he reported a gain of twenty-five million euros stemming from proprietary trading (Gauthier-Villars, 2008b). It appears, therefore, that the bank hierarchy encouraged risky trading activity as long such practices were profitable. The following section outlines some of the specific areas identified in the report of the General Inspection Department (see summary in Appendix A) in which there were breakdowns in internal controls.

Specific Internal Control Deficiencies

From September 2004 to January 2007, the management of the trading desk where Kerviel worked (DLP) apparently did not notice either the initial fraudulent trades or their concealment.

- Kerviel's immediate superior tolerated the fact that he regularly took intraday positions on index futures and on certain equities, which was unjustified given his assignment and his low level of seniority as trader. From November 2005 onwards, Kerviel received cautionary e-mails from his manager about these intraday trading activities, but he was not otherwise punished.
- Supervision was not adequate to allow the detection of Kerviel's initial fraudulent trades (*i.e.* the taking of overnight positions concealed by fictitious opposite trades), which were infrequent in 2005 and 2006 (under EUR 100 million, essentially concerning equities). In July 2005, the manager identified a non-covered overnight position of around EUR ten million on ALLIANZ shares, which led to a non-formal reprimand, but this manager failed to detect the fictitious trades used by Kerviel to conceal the position.
- In January 2007, the DLP trading desk lost its manager (Kerviel's direct supervisor), who had resigned. There was no immediate replacement, and during this period, the Delta One manager (Level 2 above Kerviel) did not implement any interim alternative for the monitoring of the DLP trading desk's activities.
- Throughout the two-and-a-half month period when there was no manager of the DLP trading desk, most of the trading activity and earnings of the DLP trading desk were validated by the desk's most senior trader without there being any effective control over the desk. Kerviel himself validated his own earnings in March. No use was made of either the position monitoring tool or cash flow statements during this period.
- Because of the lack of supervision, Kerviel was able to build-up his fraudulent positions and continue his intraday activity. By late March 2007, he had built up a position on futures on the DAX index of EUR 5.5 billion.

From April 2007, the day-to-day supervision by the new DLP manager was weak, and other supervisors did not react in an appropriate manner to several alert signals.

- With respect to risk and the monitoring of day-to-day activities, the direct supervision of the trading desk was deficient. The new manager did not carry out any detailed analysis of the earnings generated by his traders or of their positions, thereby failing to fulfill one of the main tasks expected from a trading manager.
- The two principal tasks of a trading desk manager in relation to control measures consist of: 1) checking that the desk's net position does not exceed the allocated risk limit (in this case, EUR 125 million), which the manager carried out satisfactorily; however, this did not enable him to

detect the fraud because the positions were concealed by fictitious trades; and 2) consulting on a regular basis the tool explaining profits or losses made (BACARDI) and the database where all trades made during the day are registered (ELIOT) in order to monitor the activity of the traders, which was not done by the manager (this would have allowed him to detect the fraud).

- The desk manager was not in a position to control the activity of his traders nor to detect the concealed positions taken in 2007 and 2008 or the increase in the volume of intraday activity. The manager indicated that he trusted his traders to provide answers to his questions or to those of the Back Office.

In addition, higher level supervisors did not respond appropriately in the face of several red flags:

- Level of earnings: Despite the strong growth of Kerviel's declared earnings in 2007 (EUR forty-three million, of which EUR twenty-five million was proprietary, i.e., fifty-nine percent of the earnings of the desk and twenty-seven percent of the earnings of DELTA ONE in 2007), no examination of this activity was carried out by his supervisors.
- EUREX questioning: Correspondence from the EUREX Derivatives Exchange to Société Générale in November 2007 did not attract attention from the DLP manager.
- Cash flow: unusually high levels of cash flow (an excess of EUR 1.3 billion between December 28, 2007 and January 1, 2008) were not detected due to the lack of detailed analysis by the DLP manager.
- Accounting: On two occasions (in April 2007 and May 2007), the DELTA ONE manager and his superior were informed of anomalies uncovered during reviews where the explanations provided by Kerviel were not consistent, without any reaction from the managers.
- Brokerage expense: The DLP manager and, to a lesser extent, his two superiors failed to carry out an in-depth analysis of the high amounts of brokerage commissions at year end generated by Kerviel's fraudulent activity (EUR 6.2 million for Kerviel's desk, i.e., twenty-eight percent of the DLP annual earnings).
- Breach of limit: The DLP manager failed to investigate the cause of the initial EUR ten million breach of the desk's market risk limit (EUR 125 million) in 2005 which was caused by an overnight directional position taken by Kerviel on three equities.

Capabilities of the Perpetuator as a Factor in Breakdowns in Internal Controls

Wolfe and Hermanson (2004) and Dorminey (2010) and have presented a four-sided fraud diamond that extends the fraud triangle to include an individual's capabilities, including personal traits that may contribute to whether fraud will occur. Because Kerviel had been employed as an internal auditor in the back office of the bank, he was knowledgeable about the bank's internal controls. Using his knowledge of the internal controls, Kerviel was able to enter into fictitious transactions to make it appear that he was taking minimal risks. Logging into the system under different names, he could also cancel fictitious trades before the settlement date. This knowledge of back office internal controls allowed Kerviel to hide the size of his trades from his superiors.

As discussed above, educational background is very important in France and it would have been unlikely that Kerviel would have been allowed to become a trader, given his background. However, he was apparently talented and ambitious and he was given an opportunity to become a trader, albeit in a junior position. Kerviel may have wanted to prove that he could compete with traders from elite educational institutions and his personal capabilities create an opportunity to commit fraud given the breakdown in internal controls that was apparently in place at the bank.

IV. Additional Factors That May Have Contributed to Breakdowns in Internal Controls

There are two additional factors which may have contributed to the breakdowns in internal controls at Société Générale; these are: ambivalence and ambiguity. Fraud may be subject to ambivalence regarding the proper degree of censure and punishment that should be meted out with respect to the fraud. This ambivalence can be illustrated by the fact that shortly after the revelation of the fraud at Société Générale, a survey of readers of the French newspaper *Le Monde* indicated that a majority of the respondents did not believe that it was possible that a single trader could commit a fraud like that which took place at Société Générale, thus indicating that Kerviel may be regarded as a "scapegoat" with respect to the breakdowns in internal controls that were overlooked by management (Gatinois and Michel, 2008). As further evidence of this ambivalence, Kerviel has spent very little time in prison with respect to his fraudulent acts, even though he has been convicted by the French courts (Comstock, 2009).

Ambivalence may be compounded by ambiguity regarding the reasons for misconduct in financial trading. Scandals in bank trading are usually portrayed as being exceptional rather than structural features of the industry, thus leading to confusion as to whether the fraudulent acts are isolated instances that can be readily corrected or whether they due to institutional factors that are more difficult to correct. This ambiguity is exacerbated in bank trading where innovation and performance are highly prized, and deviant behavior may not be viewed as really criminal. Such tendencies put pressure on banking regulators to establish tolerable levels of deviance. However, the problem is that they then must develop a definition of what actually constitutes misconduct (i.e., what is a deviation from an internal control) (Nelken, 1994). Ambiguity also surrounds the concept of intentionality which is a necessary element in the proof of fraud. While fraud is often intentional, as in the case of predators (see Kranacher et al., 2010), it can be difficult to distinguish between behaviors that are intentionally deceptive from those involving "accidental fraud". Consequently, the additional factors of ambivalence and ambiguity might be considered with respect to breakdowns in internal controls that lead ultimately to fraudulent acts.

V. Conclusion

The purpose of this paper has been to examine breakdowns in controls over bank trading information systems through an examination of the fraud perpetrated by Jérôme Kerviel, at Société Générale, at the beginning of 2008. Beginning in 2005, Kerviel began making unauthorized trades and exceeding the size limit authorized for his trades. The key element Kerviel's fraud was to record fictitious transactions that were opposite or offsetting transactions with respect to his unauthorized trades, thereby making it appear that the risk to the bank was zero. Kerviel's unauthorized trades were not detected because of his personal capabilities as a former internal auditor. He had knowledge of the bank's internal control procedures and he knew when checks would be conducted. It is also alleged that he misappropriated the computer log-in and password controls of colleagues both in the trading unit and the information technology section. Eventually the bank's internal control procedures led to the discovery that a particular customer (i.e., Deutsche Bank) had unusually large trading balances. When asked about the trading balances, Deutsche Bank denied knowing about these trades. This discovery eventually led to discovery of the Kerviel fraud.

The objective of this paper has been to address the question whether there may have been additional factors beyond those of the traditional "fraud triangle" which contributed to the breakdowns in internal controls at Société Générale. The principal contribution of the paper has been to extend prior research that has focused on the fraud triangle (see for example: Kranacher et al., (2010), Dorminey et al., (2010) and Fritz-Morgenthal and Rafeld (2010). Among the additional factors that were considered are: 1) certain cultural and ideological differences specific to France which may have led to a weakening of internal controls; 2) the possibility of collusive behavior; 3) willful blindness on the part of bank management even though there were well-designed controls in place; and 4) certain capabilities of the fraud perpetuator related to knowledge about how internal controls might be overridden.

With respect to further research, the additional factors which may contribute to fraud that have been identified in this paper could be tested with respect to other frauds to see if they are present in those frauds. In addition, it is likely that further additional factors will be added to the traditional fraud triangle

or fraud diamond as our knowledge of fraud continues to grow. The purpose of this paper has been to contribute to this growth of knowledge.

Figure 1: Organization Structure of Société Générale (source: General Inspections Department, 2008)

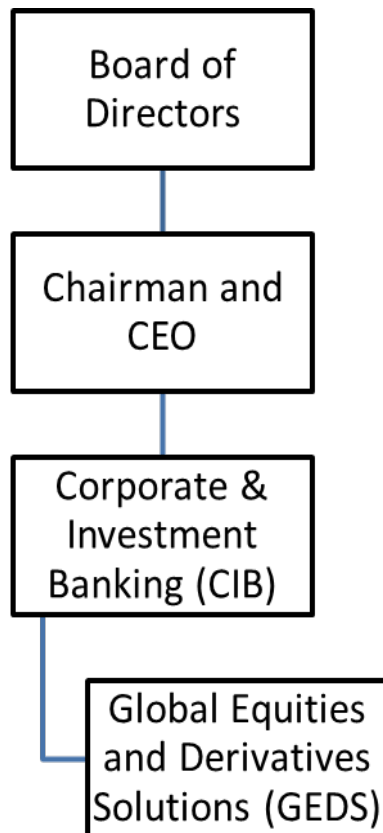


Figure 2: Placement of DLP Trading Desk within GEDS (source: General Inspections Department, 2008)

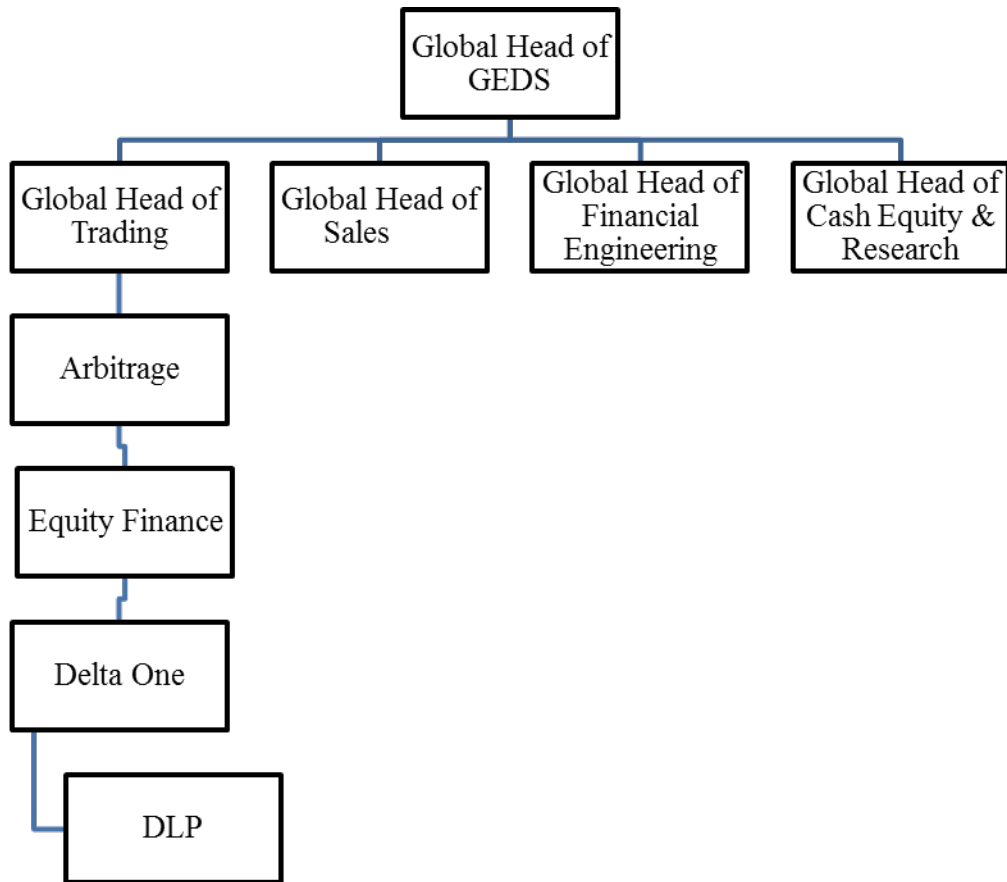


Figure 3: Organizational Hierarchy within GEDS (source: General Inspections Department, 2008)



Table I: The Range of Products Traded or Sold by GEDS

Categories of Products	Description of Product
- Structured Products	Various investment products derived from different underlying assets (equities, indices, mutual funds) developed by teams of traders, financial engineers and salespersons. Clients are primarily retail and institutional investors.
- Flow and Listed Products	Warrants, certificates of deposit, convertibles and index tracking instruments for private and professional clients.
-Secondary Equities, Cash and Research	Financial analysis and execution of equities transactions (brokerage).
-Proprietary Volatility Trading	Flow trading (inter-bank counterparty and provision of liquidity in the Over the Counter and listed options markets). Quantitative trading (position taking on quantitative analysis criteria). “Special” trading (pricing of derivatives for corporate. Arbitrage trading (taking opposite positions in a company’s debt and its listed equity).
-Proprietary Arbitrage Trading	Index arbitrage (sale/purchase of a basket of equities in relation to an index (e.g., CAC-40, DAX), intended to replicate the sale/purchase of a futures contract on the same index). Borrowing/lending equities. Arbitrage of relative values (risk arbitrage, fund arbitrage, hedge funds). The DLP trading desk was located in the Index Arbitrage sub-area of the Arbitrage Proprietary Trading area of GEDS.

Appendix A: Report of the General Inspection Department

On January 24, 2008, the General Inspection department of Société Générale was instructed by the Executive Committee of the Bank to investigate the fraud committed by Kerviel. The purpose of the assignment was: 1) to describe the mechanism used to perpetrate the fraud; 2) to search for Kerviel's motives and any potential accomplices; and 3) to identify the malfunctioning of control procedures and responsibility for the late detection of the fraud (General Inspection Department, 2008, p. 1).

The Mechanism Used to Perpetuate the Fraud

The report indicates that the fraud began in 2005 and included the following events:

- 2005 and 2006: Kerviel engaged in some fraudulent transactions (up to EUR fifteen million on positions between June 2005 and February 2006, and then up to EUR 135 million from February 2006 onwards, primarily in equities).
- 2007: From late January onwards Kerviel took short position on index futures reaching EUR twenty-eight billion on June 30, 2007, which was unwound in August, then building up a new short position in September reaching EUR thirty billion on October 31, 2007, and unwound in November. At the same time, he took positions on equities which reached up to EUR 370 million, depending on the month. Total profits of EUR 1.5 billion realized.
- 2008: Between January 2 and January 18 he took a EUR forty-nine billion long position on index futures, which was discovered on January 20 then unwound by Bank Management between January 21 and January 23, leading to losses of EUR 6.4 billion (which, taking into account the EUR 1.5 billion profit at December 31, 2007, gave a global loss of EUR 4.9 billion).

The report indicates that the fraud was concealed through three primary techniques:

- The entry and then cancellation of fictitious transactions. Kerviel recorded false transactions in the middle office accounting systems so that they would be taken into account in the calculation of risks and valuations. He set the parameters of these transactions in such a manner so as to use them to cover the fraudulent positions actually taken elsewhere. There were 947 transactions of this type identified.
- The entry of pairs of fictitious reverse transactions (purchase/sale) involving equal quantities of the same underlying asset at different prices, with the aim of hiding realized earnings. There were 115 transactions of this type identified.
- The booking of intra-monthly provisions that temporarily cancelled the earnings. Kerviel made use of an computer function, normally limited to use by trading assistants (i.e., the middle office) for the purpose of correcting trades, which modified the valuations calculated by the front office (i.e., trader's system). Kerviel posted correcting entries in order to conceal the amount of earnings generated by his fraudulent positions during a given month (provisions were checked at month end only). Nine transactions of this type were identified.

Appendix B: Report of PricewaterhouseCoopers

In a report prepared at the request of the Board of Directors of Société Générale issued in May 2008,⁵ PricewaterhouseCoopers (PwC) indicated that the breakdown in internal controls over the bank's trading information systems was due to a mismatch between the resources allocated to internal controls and a lack of supervision which diminished the effectiveness of the controls. Despite a significant amount of investment in internal controls over the bank's trading information systems, the information systems were unable to keep pace with the growing complexity of the trading environment or to process transactions correctly and efficiently. A heavy reliance on manual processing by back-office operating staff meant that some of the internal controls were not operating effectively. PwC further concluded that it was flaws in the control environment which led to ineffectiveness in the control activities. There were flaws in the design, implementation and supervision of controls which reduced their effectiveness. In terms of design, the shortcomings were apparent at several different levels:

- Several key controls that could have identified fraudulent activities were lacking.
- Because controls were split between several different units within the same function or sometimes between several different functions, and because procedures were insufficiently explicit, this made it difficult to obtain an overview of the situation and to gain an appropriate insight into the exceptions identified. The lack of a systematic procedure for centralizing and escalating red flags to the appropriate level in the organization further exacerbated the problem.
- Procedures did not appropriately reflect the requirement in the group directive to analyze risks, results and positions. In practice, this role, which would have enabled an overview of the operations of the Delta One Listed Products desk, was not carried out. Additionally, there is no explicit reference to the monitoring of cash-flows as a component of the internal control system which could have represented an additional red flag regarding the genuine activity of this desk.
- In terms of implementation, there was a lack of awareness of the risk of fraud, with the focus being instead to ensure that transactions were properly executed from an operational standpoint. This led to confusion between: 1) the production of exception reports and resolution of discrepancies; and 2) the performance of controls designed to validate the accuracy of the explanations given and corrections put in place.
- In terms of supervision, the internal control system was slow to react in order to remediate the most sensitive issues, despite the fact that some weaknesses in internal control exploited by Kerviel had been identified by the General Inspection Department as an area in need of remediation.
- In practice, the combination of these weaknesses in the operations processing chain (initiation, recording in the accounts, monitoring of limits and reconciliation) allowed the Trader to conceal his speculative positions. Management supervision was found to be lacking with regard to the Delta One team, in terms of both trading activities and management of individuals. The Trader's line managers and superiors did not perform the necessary analyses of schedules (detailing positions, valuations, earnings and cash flows) that would have revealed the true nature of his activities. Front office activities developed against the backdrop of a strong entrepreneurial culture based on trust. The surge in Delta One trading volumes and profits was accompanied by the emergence of unauthorized practices, with limits regularly exceeded and results smoothed or transferred between traders. The control environment did not encourage the development of a strong support function that was able to assume the full breadth of its responsibilities in terms of transaction security and operational risk management. An imbalance therefore emerged between

⁵ This section is derived from a report prepared by PricewaterhouseCoopers in May 2008 (PricewaterhouseCoopers, 2008).

the front office, focused on expanding its activities, and the control functions of the back office which were unable to develop the critical scrutiny necessary for their role.

Appendix C: Techniques used by Kerviel in Order to Conceal his Fraudulent Activities (source: Report of the General Inspections Department)

1) Recording fictitious trades canceling positions and earnings generated by fraudulent positions:

Kerviel entered one or several false transactions into the systems so that they would be taken into account in risk and valuation calculations. He defined the parameters of these transactions such that they covered the fraudulent positions actually taken elsewhere.

There were 947 transactions of this type.

2) Recording pairs of fictitious transactions matching each other:

Kerviel entered pairs of fictitious reverse transactions (purchase/sale) concerning equal quantities of the same underlying asset for different prices in order to conceal the realized earnings without creating a directional position (the balance being zero).

For example: on March 1, 2007, purchase of 2,266,500 SOLARWORLD shares at EUR sixty-three and sale of 2,266,500 of the same shares at EUR fifty-three, which leads to fictitious negative earnings of EUR -22.7 million without creating a position.

There were 115 transactions of this type.

3) Recording provision flow (“*flux pro*”):

Kerviel used the option, in principal reserved for trading assistants (but without any technological protection preventing access by traders) to correct modeling bias, to enter positive or negative provisions modifying the value calculated by the Front Office system. He entered such flows to conceal the amount of earnings generated by his fraudulent positions.

There were nine fraudulent provision flows identified.

References

- Abolafia, M. 1996. *Making Markets: Opportunism and Restraint on Wall Street*. Cambridge, MA: Harvard University Press.
- Albrecht, S. 2014. Iconic Fraud Triangle endures: Metaphor diagram helps everybody understand fraud. *Fraud Magazine*, July/August, <http://www.fraud-magazine.com/article.aspx?id=4294983342>
- Allen, P. 2008. I just got a bit carried away, says trader behind eur5bn fraud, *The Mirror* (online), 6 February.
- Beasley, M.S., Buckless, F.A., Glover, S.M. and Prawitt, D.F. 2015. Case 5.7- Société Générale. *Auditing Cases: An Interactive Learning Approach, Sixth Edition*, 195-204. New York: Pearson.
- Bierstaker, J. 2009. Differences in attitudes about fraud and corruption across cultures: Theory, examples and recommendations. *Cross Cultural Management: An International Journal*, 16(3), 241–250.
- Bourdieu, P. 1977. *Outline of a Theory of Practice*. Cambridge, UK: Cambridge University Press.
- Bourdieu, P. and Passeron, J-C. 1990. *Reproduction in Education, Society and Culture*. Thousand Oaks, CA: Sage.
- Carnac, P. and Dykman, C. 2011. The Tale of Two Banks: Société Générale and Barings. *Journal of the International Academy for Case Studies*, 17(7), 11-32.
- Comstock, C. 2009. The adventures of Jerome Kerviel: he appeals trial for committing the largest-ever trading fraud by a single person. *Forbes.com*, <http://www.forbes.com/2009/09/02/jerome-kerviel-fraud-societe-generale-markets-faces-legal.html>, accessed September 2, 2009.
- Cressy, D. 1973. *Other People's Money: Study in the Social Psychology of Embezzlement*. Belmont, CA: Wadsworth Publishing Co.
- Dorminey, J., Fleming, A.S., Kranacher, M-J. and Riley, R. 2010. Beyond the fraud triangle: enhancing deterrence of economic crimes. *The CPA Journal*, July: 18-23.
- Eyal, J. 2008. Breaking the bank, French style. *The Straits Times*, 2 February.
- Fritz-Morgenthal, S. and Rafeld, H. 2010. Breaking down the biggest trading fraud in the history of banking. *Risk Professional*, June, 47-52.
- Gatinois, C. and Michel, A. 2008. Société générale : de nombreuses zones d'ombre demeurent. *Le Monde*, January 26.
- Gauthier-Villars, D., Mollenkamp, C. and Macdonald, A. 2008a. French bank rocked by rogue trader. *The Wall Street Journal*, January 25: A1.
- Gauthier-Villars, D. and Meichtry, S. 2008b. Kerviel felt out of his league. *The Wall Street Journal*, January 31: C1.
- General Inspection Department. 2008. *Mission Green: Summary Report*. Paris: Société Générale.
- Hanes, A. 2008. Suspect - a fragile being: trader's best intentions can go wrong. *National Post*, 25 January, A3.
- Jolly, D. and Clark, N. 2008. Greater details emerge of bank's 4.9 billion loss. *International Herald Tribune*, 28 January.
- Kennedy, S. 2008. France's SocGen hit by \$7.1 billion alleged fraud. *Marketwatch.com*, 24 January.
- Kerviel, J. 2010. *L'engrenage: Mémoires d'un trader*, Paris: Flammarion.

- Knapp, M.C. and Knapp, C.A. 2011. Société Générale: an instructional case focusing on international accounting and auditing issues. In Knapp, M. (ed.) *Contemporary Auditing: Real Issues and Cases, Eighth Edition*, Mason, OH: South-Western.
- Kranacher, M-J., Riley, R. and Wells, J. 2010. *Forensic Accounting and Fraud Examination* New York: John Wiley & Sons.
- Le Monde. 2008. Société générale : de nombreuses zones d'ombre demeurent. *Le Monde*, January 26: 1.
- Menon, T., Morris, M.W., Chiu, C.Y. and Hong, Y. 1999. Culture and construal of agency: Attribution to individual versus group dispositions. *Journal of Personality and Social Psychology*, 76, 701-717.
- Nelken, D. 1994. White collar crime. In Maguire, M., Morgan, R. and Reiner, R. (eds.), *The Oxford Handbook of Criminology*, Oxford: Clarendon Press: 355-392.
- Peterson, J. 2008. Societe Generale's 2007 Annual Report. *jamespeterson.com*, 17 March.
- PricewaterhouseCoopers. 2008. *Société Générale: Summary of the PwC Diagnostic Review and Analysis of the Action Plan*. Paris: PricewaterhouseCoopers.
- Routier, A. 2008. Jérôme Kerviel maintained close relations with his accomplice. *Le Nouvel Observateur*, 14 February: <http://www.nouvelobs.com>
- Schwartz, N.D. and Bennhold, K. 2008a. A trader's secrets. A bank's missteps. *The New York Times*, February 5, BU 1.
- Schwartz, N.D. and Bennhold, K. 2008b. In France, the heads no longer roll. *The New York Times*, February 17, BU 1-7.
- Wells, J.T. 2008. *Principles of Fraud Examination*. New York: Wiley.
- Wolfe, D.T. and Hermanson, D.R. 2004. The fraud diamond: considering the four elements of fraud. *The CPA Journal*, December.