

**Investigation into
foreign exchange losses at
the National Australia Bank**

12 March 2004

Mr David Krasnostein
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Melbourne Vic 3000

12 March 2004

Dear Mr Krasnostein

Report on investigation into foreign currency losses

Please find attached PwC's report resulting from our investigation into foreign exchange losses at the National Australia Bank.

Your faithfully

PricewaterhouseCoopers

Craig D Hamer
Partner

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About this report and our investigation

This report presents the findings of the PricewaterhouseCoopers investigation of the \$360 million foreign exchange losses (the losses) incurred by National Australia Bank (the National), which were announced to the market in January 2004.

The scope of our investigation

PricewaterhouseCoopers (PwC) was appointed by the National's Chief Executive Officer which was ratified by the Principal Board. PwC provided status updates to the National's Principal Board Risk Committee. The terms of reference were to:

- investigate the sequence of events and trading activities that led to the losses
- prepare an analysis of the losses and how they occurred, with an initial focus on foreign currency option transactions entered into on or after 1 October 2003
- identify key policies, procedures, systems and control failures within the foreign currency options trading business responsible for the losses
- investigate whether any customer of the National or other third party incurred a direct or indirect loss as a result of the events.

During our investigation we provided periodic updates to the National's Chief General Counsel, the Chief Executive Officer, the Chairman of the Board and the Principal Board Risk Committee. We also liaised closely with APRA and from time to time with Australian Federal Police and ASIC.

We were not asked to establish the amount of the losses. This task was conducted by management and audited by KPMG. We were asked by management to perform a limited review to ensure the procedures used by management were reasonable.

Our investigation was confined to foreign currency option transactions as described above. We did not review the transactions of any other desks within the National's trading activities.

Our investigation

The findings of our investigation are based on facts and, where appropriate, our opinion. We used a number of different methods to obtain the evidence supporting the facts, including:

- analysis of trading records
- forensic acquisition and analysis of electronic data
- analysis of other records, including minutes, internal and external audit reports and communications with regulators
- interviews with staff, directors and third parties
- analysis of telephone recordings.

Our investigation involved conducting formal, recorded meetings with over 45 National staff, some of the National's directors and former directors. We conducted many more informal interviews with National staff and third parties, and reviewed several thousand emails, numerous reports and a database of some 10,000 transactions. In addition, we accessed and analysed the National's tapes that contained recorded telephone conversations of the foreign currency options traders in the dealing room.

Given the limited time in which we were required to complete our investigation, we made judgements as to how to focus our attention and allocate our resources among a number of issues.

The people we interviewed were not under oath or legal compulsion, and we made judgements as to their credibility and the weight that should be assigned to their views and recollections. We have not sought to verify our findings with any of those interviewed, and instead have relied upon the evidence. However, we have confirmed with key people that we have been provided with all relevant reports and information relating to the trading losses.

Due to the sensitivity of the matters in this report and the timeframe of its production, we have not disclosed the content with anybody other than the Principal Board, the National's Chief General Counsel, a partner and staff at one of the firms acting as the National's external legal advisors, the probity and governance advisers to the National (Blake Dawson Waldron) and Deloitte, APRA, and the National's General Manager Corporate Strategy and Investments.

Disclosure statement

PwC is not currently nor has ever been the National's external auditor.

Summarised below are services PwC provides to the National that are relevant to this investigation, together with information on financial interests and business relationships between members of PwC's investigation team and the National.

I PricewaterhouseCoopers

a) PwC's assignments in relation to Corporate & Institutional Banking (CIB), Risk Management, Internal Audit and relevant financial controls

These include:

- a review of CIB's overall IT security framework
- advice on Basel II, IFRS and regulatory compliance
- due diligence in connection with acquisitions
- assistance in the development of financial risk model policies, whistleblower protection policies and a compliance framework for the 'Super 12' project.

b) PwC resources provided to Internal Audit for work in CIB

- In February 2003 PwC was selected as a preferred (but not exclusive) third party provider of resources to the National's Internal Audit function.
- Internal Audit resources provided to CIB in the 16 months to 31 January 2004 represent approximately 3% of total Internal Audit work in CIB.
- PwC personnel worked under the direction and control of a nominated Internal Audit manager of the National. Contractually, PwC did not determine scope or quality control, or review the final conclusions reached on work completed.
- A PwC partner was seconded to the National between December 2001 and May 2002 as acting Head of Technology Internal Audit for the National.
- Jim Power, a PwC partner, acted as Head of Internal Audit for CIB from 13 February 2002 to the end of October 2002.
- A PwC resource was provided for two weeks in September 2002 to assist in the review of some aspects of the IT control environment supporting Horizon, the currency options trading system.
- During 2002 and 2003, work performed included approximately 40 days of internal audit work in the area of foreign exchange trading. The work involved supervised execution of specific audit steps determined by the National.

II Investigation team – Financial interests, business relationships, personal relationships

PwC personnel engaged on this assignment have confirmed that:

- They have no material direct or indirect financial interest in the National.
- They do not have any relationships with the National other than arm's length mortgages, personal loans and credit cards, and investments by the National offered at normal market terms and conditions.
- They do not hold ordinary shares in the National that are material to their net worth.

One of the partners leading the investigation, Craig Hamer, is PwC's relationship partner for the National. His principal responsibility in this role is to ensure the overall quality of professional services provided to the National.

III Other matters

- John Thorn, a former senior partner of PwC who retired on 30 September 2003, was appointed to the Principal Board of the National, in October 2003. He was appointed to the Principal Board Audit Committee on 16 October 2003.
- Geoff Tomlinson, a director on the Principal Board of the National is patron of the PwC Corporate Accountability Council which hosts informal and occasional PwC round table discussions with PwC and non-executive directors of other organisations on topical matters such as corporate governance, accountability and reporting. He receives no remuneration from PwC. Mr Tomlinson was previously a consultant to PwC. His consultancy concluded in June 2002.
- Michael Sharpe, a former senior partner of Coopers & Lybrand who retired on 31 March 1998, is a director of National Australia Trustees Limited, a wholly owned subsidiary of the National. He was appointed in 1996.

Independent review of PwC's relationship with the National

The National engaged Blake Dawson Waldron to consider and advise on matters disclosed above. Further, the National engaged another professional firm (Deloitte) to consider and advise the National on matters set out in I above. Blake Dawson Waldron and Deloitte have provided their opinions to the National.

Contents

	Executive summary	1
1	Background to the losses	5
2	How the losses occurred and were concealed	6
	How the losses occurred	7
	Analysis of the losses	7
	Who was involved	12
	How the losses were concealed	12
	The impact on risk	18
	Who discovered the losses	20
3	What went wrong	21
	The integrity of people	22
	The risk and control framework	22
	Governance and culture	28
4	The currency options business	33
	Board and committees	33
	Corporate & Institutional Banking	35
	Group Risk Management	38
5	Warning signs from relevant reports	40
	APRA40	
	Internal Audit	43
	KPMG	45
	Response to the findings of the AIB report	47
6	Impacts on customers and third parties	50
	Third parties	50
	Customers	51
Appendix A	Terms used in currency options trading	52

Executive summary

This is a summary of PricewaterhouseCoopers' investigation into the A\$360 million foreign exchange loss ('the losses') incurred by the National, announced to the market in January 2004.

Amount of the losses: The losses were calculated by the National and announced during January 2004. The final figure was A\$360 million.

Traders involved: The National staff involved in the currency options trading that led to the losses were Luke Duffy, Gianni Gray, David Bullen and Vince Ficarra. We refer to them as the Traders. They were supervised by Gary Dillon, Joint Head of Global Foreign Exchange.

How the losses occurred: The Traders' activities were contrary to the National's strategy. The risk exposure of the currency options desk to the US dollar increased significantly in late 2003. This exposure resulted in significant losses when the US dollar fell by some ten cents against the Australian dollar.

Analysis of the losses: At 30 September 2001 the value of the currency options portfolio was overstated by approximately A\$4 million. At 30 September 2002, the overstatement was approximately A\$8 million. In both cases the overstatement was concealed by false transactions.

During the financial year to 30 September 2003, the currency options Traders regularly under and over reported profits, concealing the desk's true performance.

During September 2003 new transactions greatly increased the National's exposure to the weakening US dollar. The Traders incurred losses of A\$35 million in September 2003, again concealing these losses by false transactions. This enabled them to achieve an apparent annual profit of A\$37 million, overstating the cumulative position by approximately A\$42 million.

During October, November and December 2003 the Traders continued to exceed risk limits and falsify the true position. Growing exposures, combined with the falling US dollar, increased the 31 December overstatement of the value of the currency options portfolio to A\$92 million.

By the 12th of January 2004, false transactions with a reported value of A\$185 million were included in Horizon (the currency options trading and processing system), and on 13 January 2004 the National made the first announcement of the losses, then estimated at A\$180 million. By the 27th of January 2004, after adjusting for a revaluation of the portfolio, total losses of A\$360 million were announced.

How the losses were concealed: The practice of concealing losses by the Traders started in September 2001, and potentially earlier. Initially, by using incorrect dealing rates for genuine transactions, the Traders shifted profits and losses from one day to another. They called this 'smoothing'. Later they processed false spot foreign exchange and false currency option transactions to conceal trading losses.

Note: In Appendix A we have described some of the technical terms used in the Executive Summary

The Traders entered false transactions in Horizon just before the end-of-day close, at about 8:00am the next morning. Entries in Horizon were the basis for profits and losses included in the general ledger from which financial reports are prepared. The Operations Division started the process of checking transactions at about 9:00am each day. Sometime between 8:00am and 9:00am, referred to as the 'one-hour window', the Traders were able to amend the incorrect deal rates and reverse the false transactions in Horizon to prevent their detection by the checking process. We understand that the Traders discovered this 'window' accidentally during 2000.

In October 2003, the Traders identified that the back office had stopped checking internal option transactions. This provided them with the third method of concealment – entering undetected, one-sided internal currency option transactions.

As a consequence of meeting profit targets in 2003, the Traders received bonuses ranging from A\$120,000 to A\$265,000. Some of the Traders also received bonuses for 2001 and 2002.

The impact on risk: As the currency options desk's losses increased from 1 September 2003, exposures grew larger and riskier. Although the Traders partly obscured the position by the false option transactions, many limit breaches were identified, reported and approved.

VaR limits were breached throughout 2003 and approved by Mr Dillon. Other option risk limit breaches such as vega were routinely approved by Mr Dillon. The number of breaches grew significantly in late 2003 and in January 2004.

Who discovered the losses and how: In early January 2004, a currency options desk employee raised concerns about substantial losses included in the currency options portfolio, with another currency options desk employee. Others, including an analyst attached to the desk, then inquired further over the next few days and discussed the losses with Mr Dillon. Senior management was informed on 12 January 2004 and the National suspended the Traders on 13 January 2004.

What went wrong: Our investigation revealed critical weakness in three areas in relation to the losses:

- Integrity of people
- Risk and control framework
- Governance and culture

Integrity of people

The Traders initially misstated profits and losses by 'smoothing', but this developed into using false transactions to conceal significant losses. They did not behave honestly and we can only assume that they believed they would earn enough profit in the future to recover the concealed losses.

Risk and control framework

Our report details our findings on the National's risk and control framework under the four themes outlined below:

- *Lack of adequate supervision* – the Traders took large, complex and risky positions, while supervision was limited to headline profit and loss monitoring. Through concealment of the losses, CIB management derived misplaced confidence that risks were tolerable. Multiple risk limit breaches and other warnings were not treated seriously, and no effective steps were taken to restrain the Traders.

Warnings from the market about large or unusual currency transactions drew an aggressive response from representatives of the National and the concerns were passed off without proper investigation. In January 2003 letters from APRA received by the Chairman and the EGM Risk Management, did not prompt an adequate response from the National.

- *Risk management failed* – there were flaws in the design, implementation and execution of risk management. Market Risk & Prudential Control (MR&PC) knew about and reported but failed to escalate persistent risk limit breaches effectively.
- *Absence of financial controls* – our investigation identified insufficient procedures to identify, investigate and explain unusual or suspicious transactions. Normal month-end processes lacked adequate cut-off procedures and did not restate results to adjust for cancelled or amended transactions.
- *Gaps in back office procedures* – the back office failed to detect false transactions. This failure was caused in part by the one-hour window between close of day for reporting purposes and back office checking, which enabled the Traders to falsify the true position of the desk. From October 2003, junior back office staff discontinued checking internal currency option transactions. As a result, the Traders were able to process false one-sided internal options transactions without being detected.

Governance and culture

Our investigation of the currency options business gave us wide access to the National's risk and governance processes including the role and actions of the Board and its committees. As a result, we formed a view about aspects of the National's governance and culture, as outlined below:

- *Board oversight* – the Principal Board received risk management information that was incorrect, incomplete or insufficiently detailed to alert them to limit breaches or other matters related to the currency options desk's operations.
- *Principal Board Audit Committee (PBAC)* – reviewed a number of reports from a range of internal and external parties that did not alert them directly to any issues in respect of currency options. After reading the supporting papers, probing of management may have revealed the seriousness of some of the control breakdowns.
- *Principal Board Risk Committee (PBRC)* – the first meeting of the PBRC in November 2003 was not informed of the currency options desk's risk limit breaches, but was reassured that the Markets Division as a whole was well within VaR limits.

Note: In Appendix A we have described the foreign currency terms used in the Executive Summary

- *Group Executive Forum, Group Risk Forum and Central Risk Management Committee* – there was no evidence of escalation of issues relating to the currency options desk to these groups.
- *CIB management* – was aware of significant limit breaches and failed to investigate and take action. CIB management had little confidence in the VaR numbers due to systems and data issues, and effectively ignored VaR and other limit breaches. There was no sense of urgency in resolving the VaR calculation issues which had been a problem for a period of two or more years.
- *Risk management* – MR&PC raised warnings about the currency options desk’s limit breaches and other exceptions. These warnings were not escalated to the CEO or the Board.
- *Internal Audit* – reported on significant currency options issues, but failed to follow up and ensure that appropriate controls and procedure changes had been implemented.
- *The National’s culture* – there was an excessive focus on process, documentation and procedure manuals rather than on understanding the substance of issues, taking responsibility and resolving matters. In addition, there was an arrogance in dealing with warning signs (ie APRA letters, market comments etc). Our investigation revealed that management had a tendency to ‘pass on’, rather than assume, responsibility. Similarly, issues were not escalated to the Board and its committees and bad news was suppressed.

Our investigations indicate that the culture fostered the environment that provided the opportunity for the Traders to incur losses, conceal them and escape detection despite ample warning signs. This enabled them to operate unchecked and flout the rules and standards of the National. Ultimately, the Board and the CEO must accept responsibility for the ‘tone at the top’ and the culture that exists in certain parts of the National.

1 Background to the losses

In January 2004 the National made the following three public announcements relating to losses from the foreign exchange options transactions:

- 13 January 2004 – an initial announcement of losses from unauthorised foreign currency trading activities estimated at A\$180 million.
- 19 January 2004 – an update of the losses was revised to A\$185 million but with a statement that they were not expected to exceed A\$600 million.
- 27 January 2004 – an announcement that the total losses were A\$360 million.

The total amount of losses ultimately announced by the National on 27 January 2004 included the impact of false transactions as well as a further amount of A\$175 million arising from a revised revaluation of the trading book at 19 January 2004.

The foreign exchange losses arose within the National's currency options business which is part of the Markets Division of Corporate and Institutional Banking (CIB). The currency options business consists of a centralised global trading desk, responsible for managing a portfolio of customer contracts as well as trading in currency options contracts in the interbank markets. They also trade actively in spot foreign exchange. The Markets Division of CIB employs some 550 people. The currency options business used a purpose built system called Horizon to record, value and process the transactions.

More details are provided on the National's currency options business in Section 4 – The currency options business.

2 How the losses occurred and were concealed

KEY POINTS

- The losses occurred principally because of an increase in risk-taking in the currency options portfolio, combined with adverse currency movements (particularly in the last four months of calendar year 2003 and early 2004).
- The overstatements of the currency options portfolio value at 30 September 2003 and 31 December 2003 were A\$42 million and A\$92 million respectively. The continued weakening in the US dollar led to an escalation of these losses in early January 2004 to A\$185 million. A revaluation of the portfolio increased the losses to A\$360 million.
- Four currency options traders – Luke Duffy, Gianni Gray, David Bullen and Vince Ficarra ('the Traders') – were aware that significant trading losses had been incurred and concealed at 30 September 2003 and subsequently.
- The practice of smoothing profits and concealing losses had been undertaken by the Traders for over two years, and possibly since 1998.
- The Traders concealed losses by entering various types of false transactions into the trading system, Horizon. Various methods were used which exploited gaps in controls. The key methods were:
 - incorrectly recording genuine transactions
 - entering false transactions
 - using incorrect revaluation rates.
- The size of the positions was partially masked by false transactions but limits were still breached continuously.
- One of the motivations of the Traders appears to have been the desire to achieve budgeted profits and receive bonus payments.
- The foreign exchange losses were revealed by a 'whistleblower' on 9 January 2004 and brought to senior management attention on 12 January 2004.

In this section we describe the sequence of events leading to the occurrence and concealment of the foreign exchange losses. We present our findings under the following headings:

- How the losses occurred
- Analysis of the losses
- Who was involved
- How the losses were concealed
- The impact on risk
- Who discovered the losses

How the losses occurred

The current currency options team commenced trading for the National in 1998 with three dealers, increasing to four in 2000. The team's mandate was to grow both customer business and proprietary trading income. In recent years the strategy for the Markets Division of CIB had been to increase the percentage of customer-based revenue.

Contrary to the strategy, in 2003, risk-based proprietary trading¹ activity grew significantly. So too did the size of the book. At the time of our investigation, the National's currency options business consisted of a large and complex portfolio of spot foreign exchange and currency options transactions². At 30 September 2003 the notional principal of the currency options book was some A\$253 billion. Dealing decisions in the last quarter of 2003 resulted in a large long US dollar position against a range of other currencies. Major losses were incurred when there was a ten cent fall in the value of the US dollar against the Australian dollar.

Analysis of the losses

Set out below is a brief chronological analysis of when the losses occurred. This analysis is based on an examination of the trading and other records and interviews with dealers shows the extent to which there were discrepancies between the actual results of the desk and the profits reported in the monthly management accounts. In accordance with our terms of reference, the investigation focused primarily on the period from 30 September 2003. However, in order to understand when the loss concealment began we have reviewed transactions at various points in time back to October 2001.

Financial year to 30 September 2001

Our investigation identified that as at 30 September 2001 the value of the currency options book was overstated by approximately A\$4 million. This overstatement was concealed by four incorrectly recorded spot foreign exchange transactions.

Financial year to 30 September 2002

Similarly, at 30 September 2002, the value of the currency options book was overstated by approximately A\$8 million. This overstatement was concealed by one incorrectly recorded spot foreign exchange transaction.

Financial year to 30 September 2003

In October 2002 the currency options desk made profits of A\$8.9 million; however, the management accounts reported a profit of only A\$974,000. Accordingly, by 1 November 2002, the loss of A\$7.97 million misstated in the 30 September 2002 statutory accounts had been eliminated.

¹ Proprietary trading means taking risk positions on behalf of the bank, unrelated to customer business.

² Spot foreign exchange is the purchase or sale of one currency for another where a rate is agreed between two counterparties today for physical delivery in two business days. Currency options confer the right but not the obligation to exchange currencies at a pre-determined rate and are bought and sold for a consideration known as an option premium.

During November and December 2002 the results of the desk were correctly reported in the monthly management accounts, and our investigation did not identify any false transactions at 31 December 2002.

Table 2.1 shows the extent to which the results of the desk were falsely reported in each of the months between October 2002 and August 2003. By the end of August 2003 the cumulative overstatement of the value of the portfolio was A\$5.5 million. The false reporting was made possible by incorrectly recorded spot foreign exchange transactions, and involved misstating both profits and losses. This is explained later in this section.

Table 2.1: Comparison of actual and reported results of currency options trading from 1 October 2002 to 31 August 2003

	Monthly actual profit / (loss) A\$'000	Monthly reported profits A\$'000	(Under) / Overstatement of reported profits A\$'000	Cumulative overstatement of portfolio value at each date A\$'000
2002				
At 30 September			--	7,972
October	8,946	974	(7972)	0
November	3,365	3,365	--	0
December	2,837	2,837	--	0
2003				
January	2,792	3,678	886	886
February	2,559	2,650	91	977
March	2,774	1,797	(977)	0
April	(10)	2,567	2,577	2,577
May	(1,292)	4,372	5,664	8,241
June	3,390	4,558	1,168	9,409
July	12,556	7,165	(5,391)	4,018
August	(169)	1,323	1,492	5,510

Activity in September 2003

As at 1 September 2003, the currency options desk had a net long³ spot-equivalent⁴ position of US\$8 million, made up of a short US\$210 million spot-equivalent options position and a long US\$218 million spot position against major traded currencies. If a trading book is long in one currency it is equally short in other currencies. The long net US dollar position was against short positions in a range of currencies including the Australian dollar. In net terms the currency options desk was exposed to a weakening US dollar/strengthening Australian dollar.

During September, new trades, and the revaluation effect of exchange rate movements on existing options, caused the net long position of US\$8 million to increase to US\$271 million. A major decline in the value of the US dollar (by four US cents versus the

³ 'Long' means the desk has bought more than it has sold; 'short' represents having sold more than it has purchased.

⁴ The 'spot equivalent' translates an option transaction into a comparable 'spot' position (in terms of exposure to exchange rate movements) and facilitates an analysis of a portfolio comprising both options and spot transactions.

Australian dollar) resulted in a loss of A\$34.8 million but the Traders reported a profit of A\$1.8 million.

In September 2003, the currency options desk incurred losses of approximately A\$1.5 million on eight separate days. On each of three days (19, 22 and 26 September) losses of over A\$5 million were incurred. This level of loss was significantly in excess of the daily A\$3.25 million VaR⁵ limit for the desk.

The losses, together with the underlying risk positions, were concealed by the Traders, who entered false transactions into the Horizon trading system. This is explained in greater detail later in this section.

Although these false transactions enabled the currency options desk to apparently achieve an annual profit of A\$37 million, the value of the options portfolio was overstated at 30 September 2003 by A\$42 million as follows:

	A\$ million
Total overstatement at 31 August 2003	5.5
False reported profit for September 2003	1.8
Actual losses for September 2003	34.8
Total overstatement at 30 September 2003	42.1

Period from 1 October 2003

During October the currency options desk reduced the long US dollar position from US\$271 million to US\$211 million and, despite a further weakening of the dollar, earned a profit of A\$13.4 million. However, there is evidence that the reported profits might have been misstated by up to A\$10 million due to incorrect revaluation rates being used. Even so, the Traders used false transactions to report profits of only A\$5.7 million.

In November, the long US dollar position increased to US\$363 million. A profit of A\$4 million was made, but a profit of A\$7.4 million was reported. Again the Traders processed false transactions to achieve this result.

During December, further trading and the revaluation effects caused the spot-equivalent position to increase to US\$1,548 million. Not only was this significantly over approved limits, but it also reflected a completely unhedged position, with both the options and spot positions being long US dollars.

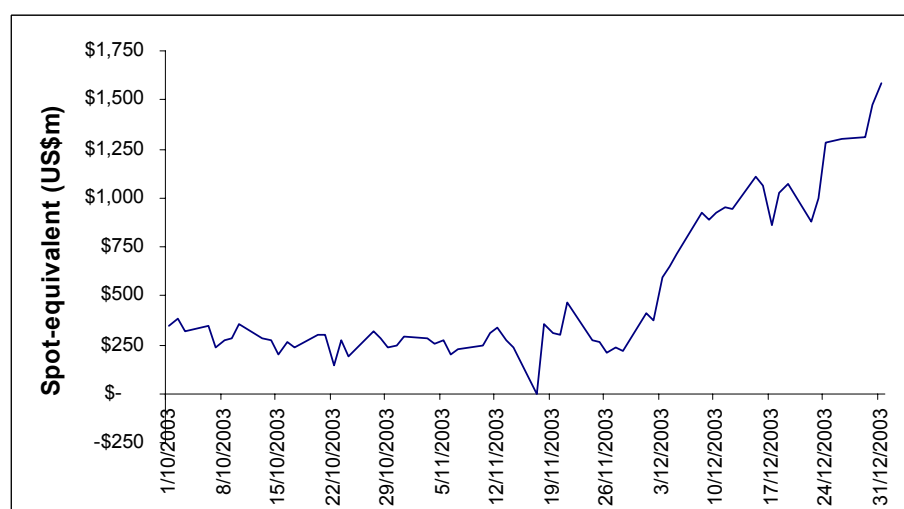
As a result of this large long US dollar position and the fall in the US dollar of approximately three cents in the month, the currency options desk incurred losses of A\$49 million in December. These losses were concealed by false options transactions such that a profit of A\$5.3 million was reported. At the end of December the currency options portfolio value was overstated by A\$91.8 million (see Table 2.2).

⁵ VaR = Value at Risk – a statistical measure of potential future loss based on current exposures and market volatilities, and calculated for a given level of confidence. VaR is the industry standard measure of market risk.

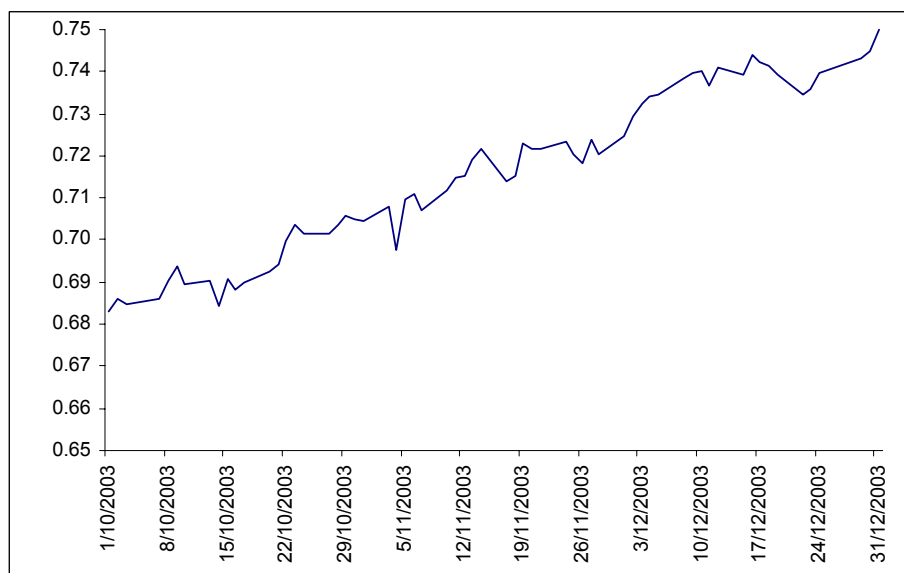
Table 2.2: Comparison of actual and reported results of currency options trading from 1 September 2003

	Monthly actual profits / (loss) A\$'000	Monthly reported profits A\$'000	(Under) / overstatement of reported profits A\$'000	Cumulative overstatement of portfolio value at each date A\$'000
Prior to 1 September 2003				5,510
September	(34,780)	1,761	36,541	42,051
October	13,871	5,774	(8,097)	33,954
November	3,993	7,421	3,428	37,382
December	(49,106)	5,272	54,378	91,760

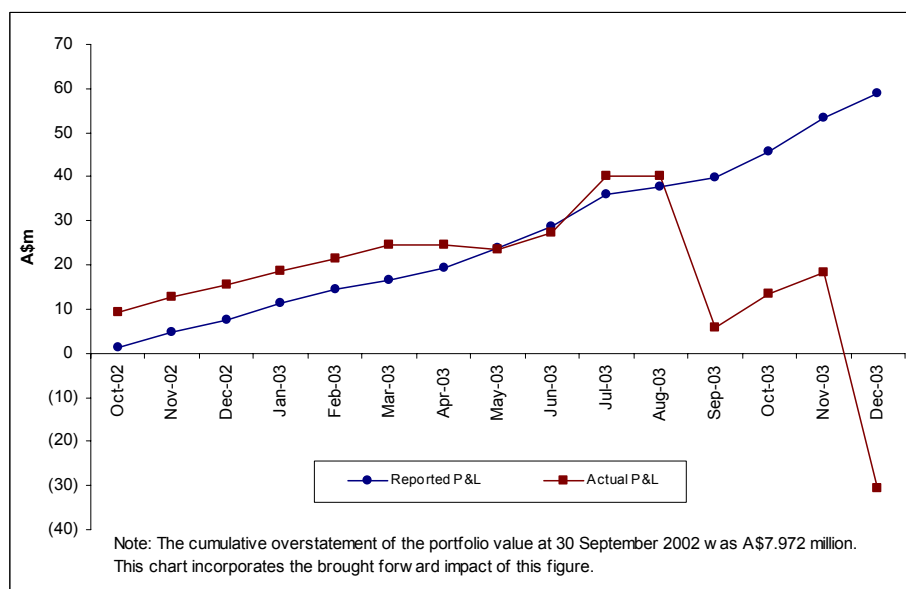
The following charts illustrate the increase in exposure to the US dollar in the period between 1 October 2003 and 31 December 2003 (Figure 2.1), the actual spot Australian dollar to US dollar rates (Figure 2.2), and the cumulative, actual and reported results for the period from 1 October 2002 to 31 December 2003 (Figure 2.3).

Figure 2.1: US\$ equivalent exposures of the currency options desk from 1 October 2003 to 31 December 2003

**Figure 2.2: Australian dollar v US dollar daily spot exchange rates
1 October 2003 – 31 December 2003**



**Figure 2.3: Cumulative actual and reported results of the currency options desk
from 1 October 2002 to 31 December 2003**



As noted above, at 31 December 2003 the currency options desk had unrecorded losses of A\$92 million and a large long US dollar position. By 9 January 2004 the US dollar had declined by a further 2.5 cents against the Australian dollar, and further losses of A\$85 million were incurred. Of this, A\$30 million was incurred by Friday 2 January and a further A\$39 million over the weekend to Monday 5 January.

By 12 January 2004, false transactions with a reported value of A\$185 million were included in the Horizon system.

On 13 January 2004 the National made an initial announcement of unauthorised foreign exchange losses, estimated at that time as A\$180 million. Subsequent announcements on 19 January and 27 January increased the amount of the foreign exchange losses to A\$360 million, including losses arising on the revaluation of the portfolio.

A chronology of the misstatement of the portfolio valuation is set out in Table 2.3.

The losses announced on 27 January 2004 were made up of:

	A\$ million
Unrecorded losses at 31 December 2003	92
Further losses to 12 January 2004	93
Revaluation of portfolio	175
	360

Table 2.3: Chronology of misstatement of portfolio valuation

Key dates	Impact on portfolio valuation
30 September 2001	portfolio value overstated by A\$4.16 million
30 September 2002	portfolio value overstated by A\$7.97 million
31 October 2002	misstatement eliminated
30 November 2002	results correctly reported
31 December 2002	results correctly reported
January – August 2003	profits and losses misreported
31 August 2003	portfolio value overstated by A\$5.5 million
September – December 2003	US dollar falls
30 September 2003	portfolio value overstated by A\$42 million
31 December 2003	portfolio value overstated by A\$91.7 million
12 January 2004	portfolio value overstated by A\$185 million
19 January 2004	portfolio value overstated by A\$360 million

Who was involved

The National staff who were involved in the currency options trading that led to the above losses were Luke Duffy, Gianni Gray, David Bullen and Vince Ficarra ('the Traders'). The Traders were supervised by Gary Dillon, Joint Head of Global Foreign Exchange.

How the losses were concealed

The above analysis of losses, supported by interviews of the Traders⁶, shows that the practice of concealing losses (in some cases profits) and the Traders' true positions started sometime before October 2001.

⁶ Except for Mr Ficarra, all the Traders answered questions at formal taped interviews. We have reviewed a formal written statement from Mr Ficarra.

Initially, incorrect dealing rates were entered into Horizon by the Traders in order to shift profits and losses from one day (or period) to another. This practice was referred to by the Traders as ‘smoothing’ and appears to have been accepted practice by the currency options Traders. Subsequently, two other principal methods of concealment were employed by the Traders: processing false spot foreign exchange and false option transactions.

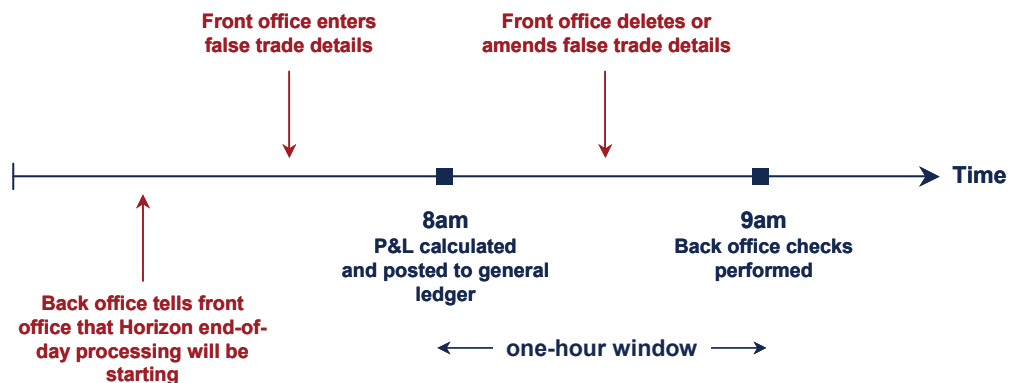
Examination of Horizon and our interviews with the Traders indicate that the incorrect deal rates and false transactions were primarily processed by one Trader. The Traders shared their Horizon system passwords with each other, so it is not possible to be certain whether the entering of the incorrect deal rates and false transactions into Horizon was restricted to one or more of the Traders.

To process and conceal the false transactions in the Horizon system, the Traders exploited weaknesses in the end-of-day procedures. The Horizon end-of-day was generally run at approximately 8:00am the following morning to allow transactions executed in the New York time zone to be captured. The Traders entered false transactions into Horizon just before the end-of-day close. The profits and losses arising from Horizon were posted to the general ledger and used to prepare management reports and ultimately the National’s financial statements. There was a difference of approximately one hour between this end-of-day close in Horizon and the start of the procedures whereby Operations produced the reports that enabled them to carry out checks on transactions. During this period, referred to by some as ‘the one-hour window’, the Traders had time to amend any incorrect details and thereby bypass the deal checking process carried out by Operations.

This process had to be redone each day the dealers wanted to process false trades.

We understand that the Traders discovered the ‘window’, which is illustrated in Figure 2.4, by accident some time in 2000.

Figure 2.4: Horizon processing timeline (the ‘one-hour window’)



Two of the methods of concealment relied on exploiting the time delay between end-of-day close-off of the Horizon system (which provided the general ledger with profit and loss amounts), and the instigation of the deal validation process in back office which utilised data from a second system (which received data feeds from Horizon). The third method capitalised on the fact that, from October 2003, the back office ceased checking ‘internal’ transactions. This enabled the Traders to enter one-sided internal option transactions at off-market rates, thereby masking the true exposures and concealing losses.

Each of these methods is described below.

Incorrect recording of deal rates on genuine spot foreign exchange transactions

The initial method the Traders used to conceal losses appears to have been entering genuine spot foreign exchange transactions into Horizon, with deliberately incorrect transaction rates, just before end-of-day (approximately 8:00am Melbourne time). The incorrect rates were designed to generate false profits (and occasionally losses).

Within the 'one-hour window', amendments were then made to the transactions in Horizon to reflect the correct rates.

The profits or losses recorded in the general ledger were incorrect because they were based on incorrect transaction rates used in the end-of-day revaluation process. The concealment was possible because:

- the transaction rates in Horizon were corrected by the Traders in the one-hour window
- the general ledger was not re-stated as a result of the amendments made by the Traders.

Table 2.4: Examples of amended deal rates

				Rate
Trade no:	1057021-1			
	Initial	AUD 1,000,000	USD 7,500	0.0075
	Correct	AUD 1,000,000	USD 607,500	0.6075
Trade no:	1047603-1			
	Initial	JPY 2,945,000,000	USD 20,000,000	147.25
	Correct	JPY 2,433,600,000	USD 20,000,000	121.65

Entering false one-sided spot transactions

The second method involved creating false one-sided internal spot foreign exchange transactions. These transactions typically recorded a profit in the currency options book but as they were one-sided, did not record a corresponding loss in another book, desk or business unit. Before 8:00am (Melbourne time), a one-sided internal spot foreign exchange transaction was entered in Horizon with no equal and offsetting transaction elsewhere within the National. The transaction rates were off-market, giving rise to an immediate profit from the end-of-day revaluation process. This profit was included in the general ledger as part of the normal processing.

Within the 'one-hour window' the one-sided spot transaction was cancelled or 'surrendered'. Surrendering is a function of the Horizon system that leaves the transaction record in place, but reverses the accounting entries and suppresses it for certain reports. The surrendered transactions do not appear in reports detailing unmatched or 'one-sided' internal transactions. In addition, the back office did not validate or match surrendered internal transactions. Further, there was no cash settlement at maturity (two days later for spot trades), when other back office checks would have detected it as false.

The Traders discussed false spot transactions during several recorded telephone calls from mid September 2003⁷, which we have matched to entries made in Horizon. For example, in one telephone conversation on 25 September 2003, two of the Traders discussed the value of the false transactions that were required to hide the losses in various portfolios. Some of the rates used were significantly off-market. A number of these values can be matched exactly to internal transactions entered into Horizon shortly before end-of-day on 25 September, that are then surrendered immediately after the end-of-day process is complete. Table 2.6 sets out the transactions that were entered into Horizon following that conversation and subsequently surrendered following the closure of Horizon for end-of-day processing.

**Table 2.5: Surrendered false one-sided internal spot transactions
25 September 2003**

Trade no	False profit generated	Currency	Time created	Time surrendered
1075875	5,700,000	AUD	7.12 am	8.02 am
1075876	3,400,000	EUR	7.12 am	8.02 am
1075877	1,677,850	USD	7.13 am	8.02 am
1075878	659,500	USD	7.16 am	8.01 am
1075879	8,451,500	USD	7.17 am	8.01 am
1075880	140,000	NZD	7.19 am	8.01 am

8am
↑
Horizon close-off

The effect of the false transactions was to create a false profit in the general ledger the same day. The following day, when the transactions were surrendered, the false profit was reversed. However, new false transactions were created (and surrendered) on a daily basis to essentially roll forward the false profit or loss and conceal the real position.

We have identified 467 false internal spot transactions in 2003.

Entering false one-sided internal options

The final method, which also initially used the surrendering process, was the creation of false one-sided currency options.

A taped conversation between the Traders indicates that false option transactions were first discussed on 22 October 2003. From that date, regular daily telephone conversations were held between two of the Traders, and occasionally with a third, during which positions would be discussed and false option transactions agreed. These transactions would then be entered into Horizon to obscure the risk positions and record false profits.

Table 2.6 sets out false option transactions that were entered into Horizon and surrendered following the telephone conversation on 22 October 2003.

⁷ In the time available, PwC's analysis of telephone conversations was limited to specific times and to specific extensions from 15 September 2003.

**Table 2.6: Surrendered false one-sided internal options transactions
22 October 2003**

Trade no	Buy/ Sell	Call/ Put	Deal Amount	Currency	Time created	Time surrendered
1078511-2	B	C	300,000,000	AUD	6.20 am	7.39 am
1078511-3	B	P	300,000,000	AUD	6.20 am	7.40 am
1078512-2	B	C	300,000,000	AUD	6.22 am	7.40 am
1078512-3	B	P	300,000,000	AUD	6.22 am	7.39 am

7:37am
↑
Horizon close off

It is apparent from the taped conversations that the Traders initially assumed that back office were checking internal options transactions, and the false options were therefore surrendered in the one-hour window (as with the false one-sided internal spot foreign exchange transactions, surrendering reverses the accounting entries and suppresses it from certain reports). However, from 24 October 2003 the false options transactions were not immediately surrendered. A discussion between the Traders on 6 November 2003 reveals that by this time they were aware that the back office was not checking internal transactions, and that one-sided transactions would therefore not be identified.

By using options with longer maturities rather than spot foreign exchange, there was no need to surrender and roll forward every day. However, the one-sided transactions had to be surrendered prior to maturity, when a cash settlement would be required and the fact that the transactions were false would be discovered.

The principal objective of the false one-sided option transactions appears to have been to obscure some of the risk measures used to monitor trading. We have identified 78 false one-sided internal options in 2003. Many of these transactions gave rise to small profits on initiation ('day-one profits') but a few resulted in day-one profits of significant amounts, and in particular on 15 December one gave rise to a profit of US\$40 million. As market prices moved, further profits and losses were generated from the false one-sided option transactions.

Revaluation of the portfolio using incorrect rates

Based on our interviews of the Traders, incorrect revaluation rates could have also been used to value the currency options portfolio for much of the period from July 1998. The revaluation process of currency options was poorly controlled, with only limited independent checks or reviews on the volatility rates supplied by third parties to value the currency options portfolio. At least two of the Traders prepared schedules containing revaluation rates which were emailed to third parties used by the National. These rates were emailed back to the National unamended. We have not established whether there is any effect on the value of the currency options portfolio at year-end as a result of using these rates but have identified some evidence of the reported results being impacted at other times.

End-of-year profit targets

False one-sided internal spot transactions appear to have been used to ensure the currency options team met profit targets for the financial year ended 30 September 2003. Various taped conversations between three of the Traders in September and October 2003 included comments about the need to make budgeted profits for the year to 30 September 2003, and for losses to remain concealed to ensure that their bonuses would not be affected.

On the morning of 1 October 2003 four false internal spot foreign exchange transactions were entered into Horizon shortly before the end-of-day process for 30 September 2003, and surrendered immediately after (see Table 2.7). These transactions affected the trading results for 30 September 2003 by overstating the value of the portfolio by A\$42 million, which ensured the desk reported a yearly profit just above the budget for the year⁸ of A\$37 million.

Table 2.7: Surrendered false one-sided internal spot transactions 30 September 2003⁹

Trade no	Portfolio	Amount	Currency	Time created	Time surrendered
1076450	Trading\JPY-USD	10,500,000	USD	7.59 am	9.02 am
1076451	Trading\EUR-USD	1,376,140	USD	8.00 am	9.02 am
1076452	Proprietary\AUD-USD	16,244,739	USD	8.01 am	9.02 am
1076453	Trading\NZD-USD	398,875	USD	8.12 am	9.02 am

8:53am
↑
Horizon close-off

The following table (Table 2.8) shows the performance bonuses paid to the Traders for the year ended 30 September 2003. If the above false transactions had not been processed prior to 30 September 2003 and the accumulated losses not concealed during October 2003, we have been informed that these bonuses would not have been paid.

Table 2.8: Bonuses paid to the Traders

Dealer	2003 A\$
Luke Duffy	265,000
Dave Bullen	215,000
Gianni Gray	190,000
Vincent Ficarra	120,000
Total	790,000

⁸ The National has a 30 September year end for financial reporting purposes.

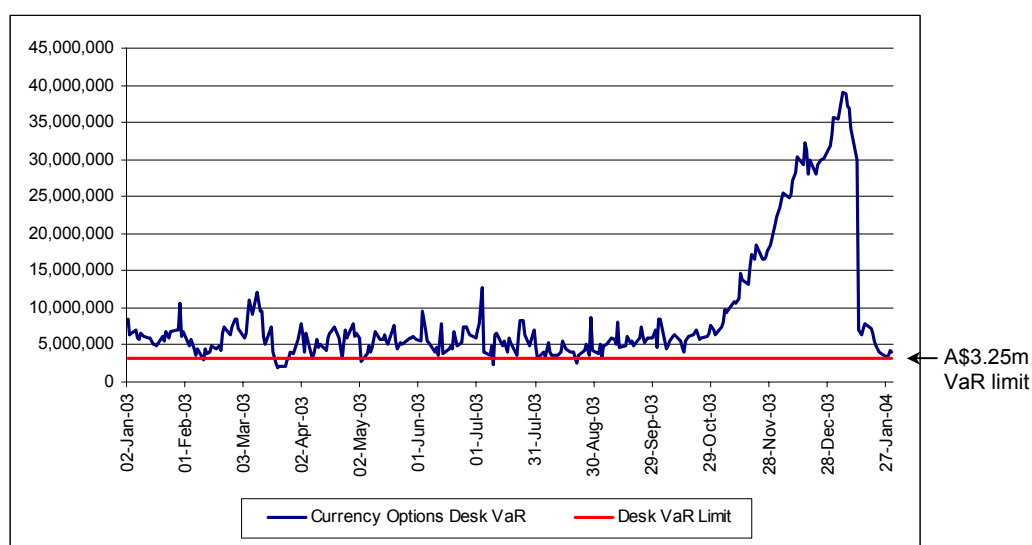
⁹ The transactions are actually recorded on 1 October 2003, but before the 30 September 2003 end-of-day general ledger process.

The impact on risk

Large losses were incurred in the period from 1 September 2003, and during the final part of 2003 positions were taken that grew increasingly large and risky. Although in some cases the true risk position was obscured by the false transactions which were structured by the Traders to achieve this goal, a large number of limit breaches were approved on a daily basis by Mr Dillon, and at various times reported to the General Manager Markets Division (Ron Erdos). A daily summary of limit breaches was sent for a period to Mr Erdos who then delegated the review to the Head of another desk in the Markets Division.

The VaR position records show that limits were persistently breached throughout 2003. The VaR position then escalated significantly in January 2004. Both these points are clearly illustrated in Figure 2.5 below.

Figure 2.5: Currency options daily desk VaR



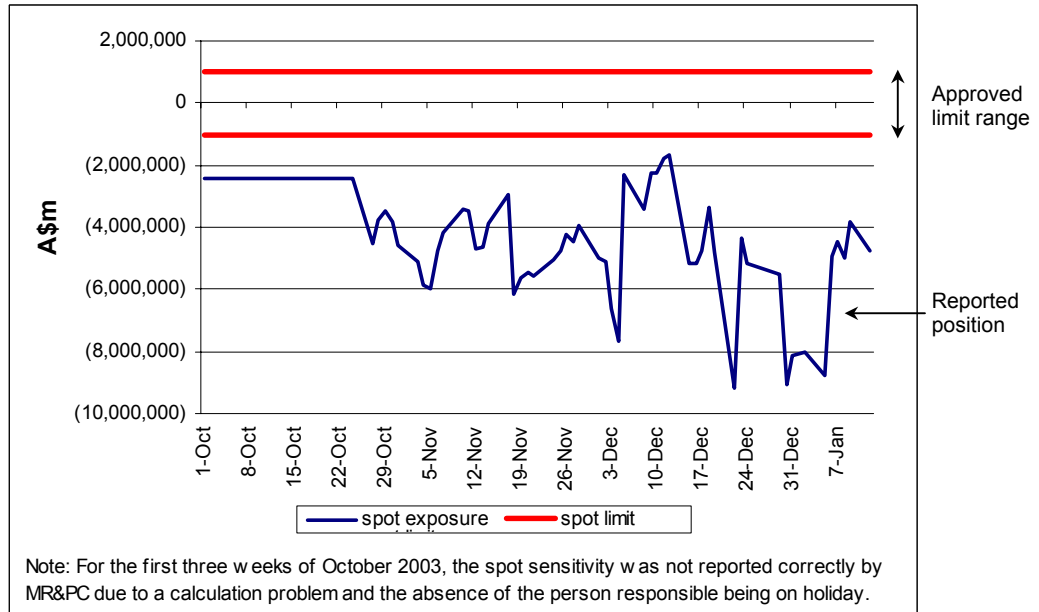
Other options risk limit breaches such as vega (commonly referred to as ‘the Greeks’¹⁰) were also routinely reported to and approved by Mr Dillon and reported to others in the Markets Division as noted above.

It appears that CIB management’s principal focus in overseeing the currency options desk was on the reported results, with less focus on risks and the nature of transactions being undertaken. Since the results were being ‘smoothed’, and losses concealed by means of the false transactions, management derived misplaced comfort that the underlying risks were within acceptable limits.

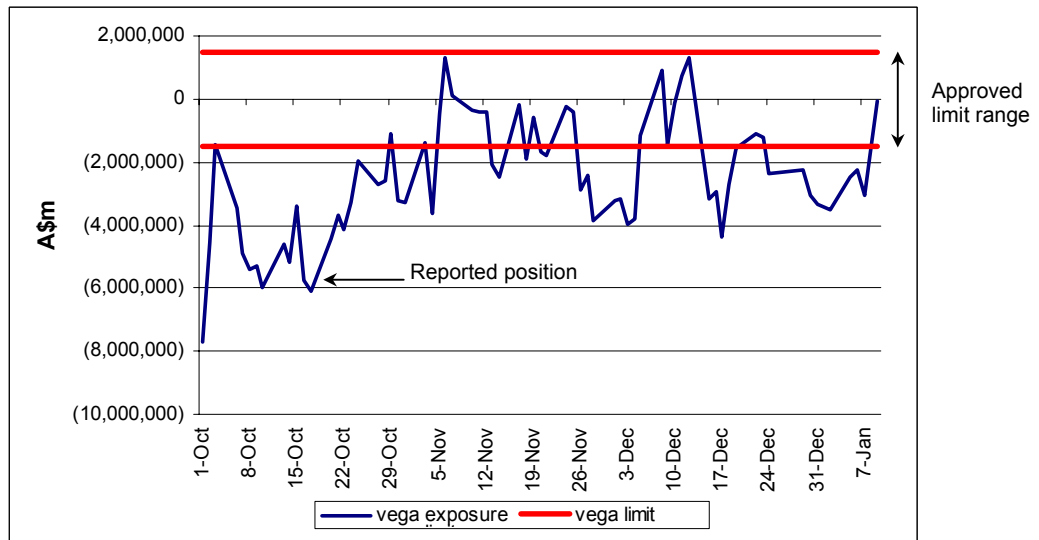
The following charts show reported spot sensitivity and vega positions, and their respective limits, from October 2003 to January 2004.

¹⁰ Options are complex instruments. In simple terms, option values are sensitive to five key variables which are routinely measured and compared against limits. These are strike price; time to maturity; market prices; market volatilities and interest rates. By market convention, the corresponding measures have been labelled with letters in the Greek alphabet, eg delta, theta, gamma etc. Hence option value sensitivities are known collectively as ‘the Greeks’.

**Figure 2.6: Currency options desk spot sensitivity¹¹ (delta)
October 2003 – January 2004**



**Figure 2.7: Currency options desk volatility sensitivity¹² (vega)
October 2003 – January 2004**



¹¹ Spot rate sensitivity measures the impact on portfolio value to a pre-determined shift in underlying spot rates. In the National's case this is a shift of 1.5%. This limit is equivalent to having a spot position of approximately US\$50 million at a 0.7600 exchange rate. In comparison, the National's spot desk position limit was US\$110 million. This is similar to, but not the same as the theoretical measure of delta. This measure should have picked up the escalating spot positions in late 2003 but was disguised by both false options transactions and false foreign exchange contracts. Even with these, the measures were still significantly outside limits. This was a soft limit only (see page 43).

¹² Vega is a measure of the impact on portfolio profit and loss from a change in implied market volatilities used to revalue the options. There is evidence that a series of false options transactions was undertaken to specifically mask this risk measure. However, recorded vega for the desk was still often outside limits after September 2003. This was a hard limit.

Lack of confidence in VaR

The situation was exacerbated by questions over the ability of the risk systems to correctly calculate VaR and the quality of the data used in the calculations. This situation had existed for the last three years. CIB Management's confidence in the numbers was undermined to the point where VaR limit breaches were effectively ignored.

The result was a disconnect between the Board's view on the level of risk appetite and how risk was managed and monitored in CIB.

Who discovered the losses

The process of discovery of the losses and false transactions at the currency options desk started at about 7:00am the morning of Friday 9 January 2004. A member of the currency options team revealed concerns about the true position of the desk to another member of the currency options team. The information was passed to another employee supporting the currency options team. At approximately 11:00am on Friday 9 January 2004, this employee approached Mr Dillon and discussed the matter. This employee later investigated Horizon and discovered a loss in the books of approximately US\$40 million.

The process of discovery proceeded over the weekend of 10/11 January, with various conversations between the Traders, the employee and Mr Dillon. By the evening of Monday 12 January the losses had been estimated by the employee at US\$120 million. Late on 12 January the General Manager Markets, Mr Erdos, was informed of the foreign exchange losses. On Tuesday 13 January 2004 the Traders were suspended by the National.

Forensic analysis of one of the Trader's email files reveals that around 6:30am on Tuesday 13 January 2004, over 14,000 emails were deleted. There appears to be little pattern to the deletion, but these emails have been recovered and reviewed to identify matters relevant to the investigation. We could find no evidence that any similar large-scale deletions were made to the other Traders' email files.

3 What went wrong

KEY POINTS

- The Traders concealed the true position of the currency options portfolio.
- Poor supervision of the Traders allowed them to trade not in accordance with the agreed strategy. The principal focus in overseeing the currency options desk appears to have been on the reported results, with less attention devoted to risks and the nature of transactions being undertaken.
- The controls and procedures in Operations and Finance were inadequate or non-existent.
- Risk limit breaches were routinely reported to and approved by the Joint Head of Global Foreign Exchange and reported to others in the Markets Division. These limit breaches were not investigated properly.
- Risk Management did not escalate properly the persistent limit breaches. The need to resolve issues with VaR were not given sufficient attention and urgency.
- A number of warning signs (APRA, Internal Audit, Risk Management, and the market place) were not properly and fully responded to.
- The culture of the National was one to focus on 'good news' and the Board was not informed of important issues.

The avoidance of excessive risk-taking and of losses from currency options trading requires the consistent operation of a reliable internal risk and control framework to prevent and detect accounting and other errors; an appropriate level of governance to check and oversee how the organisation operates; and people with integrity. Normally, if any one of these aspects breaks down or is weak, the others compensate to prevent serious losses arising. In situations where all three are weak, this then provides the opportunity for losses to arise and not be prevented or detected.

We have referred to a number of authoritative documents and guidance notes to assist in our assessment of 'what went wrong'. These include:

APRA Standards
ASX Council, *Principles of Good Corporate Governance & Best Practice Recommendations*
AFMA SCOR Framework
Committee of Sponsoring Organisations of the Treadway Commission (COSO)
The Basel Committee on Banking Supervision
US OTC Industry Derivatives Policy Group (DPG)
Group of Thirty (G30) Report, *Derivatives: Practices and Principles and Enhancing Public Confidence in Financial Reporting*

However, the most relevant and the most widely used benchmark for derivatives such as currency options are the G30 reports. The reports provide best practice principles for the management oversight, valuation and risk management, as well as systems, operations and controls over derivative activities.

In relation to the foreign exchange losses our investigation identified critical weaknesses in all three areas:

- Integrity of people
- Risk and control framework
- Governance and culture.

The integrity of people

For a number of years the Traders misstated the profit and loss of the currency options desk using the practice of smoothing. The smoothing progressed to concealment of significant losses by processing false transactions to conceal the true position of the currency options desk. They did not behave in an honest manner and concealed losses on the assumption that one day, they would earn enough profit to reverse the previously concealed losses.

The risk and control framework

Most leading financial institutions take an ‘enterprise-wide’ approach to managing risk and ensuring financial control, which also allows for appropriate levels of management discretion within business units. This typically involves a matrix of responsibility between business units, risk management, operations and finance, with each reporting separately to the Chief Executive Officer (CEO).

The allocation of responsibilities between and within these business areas depends on, amongst other things, the business model which the organisation has chosen to adopt, as well as practical considerations such as organisation structure, operating locations and business process design.

Accordingly, there is no one model of risk management and financial control which is best practice. However, there are a number of standards and benchmarks which various bodies have published for regulatory and general guidance purposes.

The National’s approach to risk management, in summary, is to place the primary responsibility and accountability for managing risk and ensuring financial control in the hands of business units. This is reinforced at various levels by analysis, monitoring and reporting procedures executed by Group Risk and Group Finance. This is consistent with the approach taken by many large financial institutions.

We have summarised our findings on the National’s risk and control framework into the following themes:

- The currency options trading activity lacked adequate supervision.
- Risk management failed.
- There was an absence of financial controls.
- There were significant gaps in back office procedures.

The currency options trading activity lacked adequate supervision

The CIB strategy was to build the percentage of customer-based income supported by reduced levels of proprietary trading using the bank's balance sheet. This strategy was also to apply to the currency options desk. However, it is clear from transaction records and other evidence that Mr Dillon and the General Manager Markets Division, Mr Erdos, failed to enforce that strategy in respect of the currency options business. In fact it appears that the Traders reversed the strategy by focusing largely on proprietary trading and large, complex position taking. Supervision of the currency options desk was limited to monitoring headline profit and loss reports, and did not involve gaining a full understanding of the transactions being entered into and the related risks.

We have not seen any demonstration that senior and executive management, other than those in Group Risk Management, had an adequate appreciation of the risks involved in trading currency options.

Day-to-day involvement and supervision of the Traders by Mr Dillon was minimal and there appears to have been little supervision by any other management in the Markets Division, other than a review of reported profits. The fact that relatively stable profits were reported was interpreted by CIB management to mean that the strategy was being followed successfully. There is, however, significant evidence that this was not the case. For example:

- multiple limit breaches were routinely signed off without rigorous investigation or actions taken to reduce positions
- transactions were occasionally undertaken before Product Usage Authorities (PUAs)¹³ had been fully signed off
- warning signs received from the marketplace were ignored or not properly and independently investigated
- although staff appraisals of the Traders contained adverse comments about excessive risk-taking, no effective steps were taken to constrain their behaviour.

The VaR and limit monitoring process

Market Risk & Prudential Control (MR&PC) produces a daily risk report which includes details of risk positions (VaR and 'the Greeks') as well as identifying any limits that have been breached. However, due to the concerns over the reliability of the VaR calculation, the VaR limit breaches in currency options was removed from the front page of the report from April 2002 until just before the discovery of the losses in January 2004. Breaches of other limits were reported every day and with increasing frequency in late 2003. These limit breaches were entered into an excesses database for electronic approval and were approved by Mr Dillon.

¹³ PUAs are discussed further in Section 4

For the three years to October 2003 the VaR calculations performed by Market Risk and Prudential Control (MR&PC) were not able to reflect the ‘smile’¹⁴ in the valuation of currency options, and as a result the VaR produced by the system was known to be unreliable. MR&PC used an external system (Infinity) and needed to upgrade to a new version which could deal with the various option types used by the currency options desk. The system upgrade went into production in October 2003. MR&PC had not been able to upgrade earlier because it was not the only user of Infinity and the decision to upgrade needed the approval and budget of CIB.

Throughout parallel running and during live running of the upgrade, VaR numbers were consistently higher than the agreed limit for currency options (meaning the National’s exposure was greater than approved). The VaR numbers were rejected by the Traders as they claimed the VaR calculation was still unreliable.

No urgency was given to, first, the resolution of the differences between MR&PC and the Traders’ view of the VaR calculations, and second, the many breaches of other limits by the currency options desk. Indeed, the matter was mentioned under “other business” in the October 2003 meeting of the CIB Risk Management Executive Committee (RMEC). In the meeting of the same committee on 13 November the matter was brought forward as an action item on the agenda for the meeting on 21 November. At the 21 November meeting limit breaches were not on the agenda or referred to in the minutes. The issue of limit breaches was also on the agenda for the meeting on 16 December but the presentation was deferred due to other agenda items overrunning. However, the matter was discussed briefly at the end of the meeting.

The minutes of the 16 December meeting record that the General Manager MR&PC (Tzu Ming Lao) and the General Manager Markets Division (Mr Erdos) were “to work on the excesses with the aim of achieving the 31 January ‘04 reduction target as the milestone and to report back to the Committee at the next scheduled CIB RMEC meeting”.

If VaR could not be calculated with confidence, the trading in new transaction types should not have been approved or should have been limited to a small number, each of which should have been carefully scrutinised. This should have placed increased emphasis on other limits such as the Greeks.

If limit breaches were not being investigated properly and VaR could not be calculated reliably, then effective risk management of currency options was not possible and good business sense would require trading to be carefully managed, curtailed or ceased altogether.

It appears that the main focus in overseeing the currency options desk, especially by the General Manager Markets Division (Mr Erdos), was the reported results and the loss referral limit¹⁵. Since the results of the currency options desk were being ‘smoothed’, management derived misplaced comfort that only acceptable risks were being taken. The ‘Greeks’ and other sensitivity limits are at least as important as a VaR limit in an options portfolio, and should have been properly investigated and reviewed by Mr Dillon, Mr Erdos and MR&PC.

¹⁴ The five key factors which influence option values are the strike price, time to expiry, market prices, market volatilities and interest rates. For a given quoted option, it is possible to work out the market volatility from the option price (‘implied volatility’). The ‘volatility smile’ describes a market phenomenon whereby options with the same expiry but different strike prices have different implied volatilities. Therefore, in estimating the market value of an option, it is important to use a volatility parameter which corresponds with its strike price.

¹⁵ Loss referral limits are designed to highlight when cumulative trading losses over a specified period of time reach a certain threshold. They are an important complement to VaR and other limits.

If the underlying transaction details in Horizon had been investigated to understand the risks in the currency options portfolio, it is highly likely the false transactions would have been identified.

Large and unusual activity

The Traders also entered into a number of large or unusual transactions, including deep-in-the-money options¹⁶ and other complex structured transactions. Some of the large and unusual transactions were identified by Operations and referred to MR&PC and others were the subject of market speculation.

For example, on the 9th and 10th of October 2003, the currency options desk sold two in-the-money options to another bank for an aggregate premium of US\$322 million. One of these was identified by Operations as being unusual and was referred to MR&PC, who duly sought an explanation from the Traders. The explanation given was that the deals were done to help fund their cash position and the transaction was cheaper than borrowing the funds internally through the National's funds transfer pricing system. The bank concerned also raised the matter with the National but aside from referring the matter to the EGM Risk Management, the investigation appears to have gone no further. In particular, there was no investigation into why the desk had such a funding need in the first place, or of the commercial validity of the deals.

In March 2002, another Australian bank raised concerns over the size and risk profiles of the transactions being conducted by the currency options desk. In March 2002, Mr Dillon and a member of MR&PC visited the bank that had expressed concern to discuss the unusual nature of some of the transactions executed by the National. Internal National emails as well as correspondence from the other bank indicate that there was an aggressive response, and the concerns were passed off as the other bank not understanding the National's trading strategy and pricing model. Effectively, the message conveyed to the other bank was that if rumours of this nature emanated from them (or the brokers used by the other bank), the National would end its dealing relationships with the bank/broker concerned.

An independent, full and proper investigation into these and similar concerns did not take place. Neither were these concerns reported to the CEO or the Board.

It is clear that MR&PC raised a number of issues with various levels of CIB management, which in many cases were also passed to the Executive General Manager Group Risk Management (Chris Lewis). However, MR&PC did not ensure that such issues were actioned properly or otherwise appropriately resolved.

¹⁶ Options can be bought and sold at different 'strike' prices and the premium varies accordingly. Depending on the relationship between the strike price and the prevailing market rate (exchange rate in the case of currency options), they are referred to as being 'at-the-money' (the strike price equals market rate), 'in-the-money' (the strike price relative to market rate favours the option buyer and this intrinsic value is reflected in the premium paid), or 'out-of-the-money' (the strike price is unfavourable relative to the market; however, because the buyer has no obligation to exercise the option, the premium is reduced rather than extinguished or negated). It is relatively unusual for corporate clients to purchase deep in-the-money options because of the high premium outlay, and most would favour at-the-money or out-of-the-money structures for hedging purposes. Interbank options trading is normally at-the-money due to the higher liquidity.

Risk management failed

It is clear that there were flaws in the design, implementation and execution of risk management. The National's risk management framework places primary responsibility for managing and controlling risk in CIB with CIB management. It appears that the emphasis placed on CIB to take responsibility for managing its risk meant that Risk Management (and in particular MR&PC) could not fulfil an effective policing role. Attempts by MR&PC to enforce limit compliance were effectively ignored and they were not supported by the EGM Group Risk.

The requirement for breaches of desk VaR limits to be reported and approved by no-one higher than the relevant trading and global product head – Mr Dillon in both cases, for currency options – was a clear design flaw¹⁷.

The situation was exacerbated by a lack of clarity in relation to the division of risk management responsibilities between CIB management and MR&PC. It is clear that the business model was not well understood by CIB management, who viewed the independent risk function as having a stronger compliance brief than the Risk Management function exercised in practice. Accordingly, while risk was an acknowledged business concern, there was a tendency to 'push the boundary' on risk in pursuit of revenue targets. This confusion was not helped by the CIB policy manual, which in section 11.01 (General Policy Responsibility and Segregation of Duties) states that "The General Manager MR&PC is the Group's controller of the VaR pool, with specific responsibility for maintaining the integrity of the control framework, daily reporting and monitoring of excesses, and initiating actions to reduce risk positions if the dimension warrants". This is a clear disconnect, in respect of the authority to reduce risk positions, between the CIB policy and the National's risk framework and what happened in practice.

Regardless of how the policy should have been interpreted, the execution of the risk management function and the escalation of emerging issues in relation to the currency options desk failed. The principal failings were:

- For a long period of time, the daily risk report produced by MR&PC identified a large number of limit breaches. MR&PC reported these to the business in accordance with agreed procedures, but did not escalate the continuous limit breaches further.
- Although MR&PC did escalate the breaches of the PUA process, the business still entered into a number of unapproved transactions with relative impunity. In some cases PUAs were used to make good existing limit breaches, or were requested after the event.
- MR&PC relied upon a number of disparate systems to calculate VaR and had acknowledged for three years that the VaR for currency options was not reliable. The resolution of this problem was not given sufficient urgency or priority.
- MR&PC was responsible for confirming the source of certain parameters used to revalue the currency options portfolio. They did not undertake procedures to review the reasonableness of parameters actually received to ensure that they reflected current market conditions and translated into appropriate values.

¹⁷ Only breaches of regional and global VaR were required to be reported to executive management.

There was an absence of financial controls

Our investigation did not find any procedures in CIB Finance to identify, refer and then investigate fully transactions of an unusual or suspicious nature and ensure proper explanations were obtained. In addition, normal month-end processes should have involved proper cut-off procedures (but did not) – in particular, a review of any cancelled or amended transactions in the first few days following the month end. Any of the following basic financial control procedures might have identified the concealed losses:

- investigation of transactions with high ‘day-one’ profit or loss, high premium or deferred premium or transactions done at off-market rates
- analysis of the profit and loss and deal volumes between customer and proprietary trading
- analysis and corroboration of profit and loss drivers, market price movements and the size, nature and risks of the portfolio
- analysis of portfolio, customer, deal type concentrations
- review of the revaluation rates used at month-end.

It is not clear who had responsibility for the above controls, but it is apparent that controls either did not exist or did not operate effectively. Typically such controls are performed by a function which reports to the CFO.

In the National, finance functions are embedded in the business units like CIB, with dual reporting lines to the business unit EGM and the Chief Financial Officer (CFO).

There were significant gaps and omissions in back office procedures

Operations (or ‘back office’) is the CIB division responsible for processing all transactions in the Markets Division, including verification, confirmation, settlement, reconciliations and end-of-day processing. Operations is structured to align with the trading desks, and a dedicated team supports the currency options desk.

In respect of currency options, Operations is responsible for checking transactions as recorded in Horizon, confirming all external transactions, and, until October 2003, checking internal transactions (ie transactions between National entities and between National desks).

In respect of spot foreign exchange transactions, the Operations validation procedures for the currency options desk were not designed properly in that they were based on information that was produced approximately one hour after the daily profit and loss was determined. This window gave the Traders the opportunity to enter false transactions, which were reflected in the reported results, and then amend or surrender them so that they were not included in the information used for Operations’ validation purposes. This was repeated on a daily basis without detection. Operations did not check that amended or surrendered transactions were valid. Specifically, there was no checking of surrendered internal transactions as the assumption was that they were automatically matched and no checking was necessary.

In early October 2003, losses were experienced in currency options because a genuine internal transaction between the currency options desk and the forward foreign exchange desk had been incorrectly entered into Horizon. At this time discussions took place between traders on various desks and Operations about the process of checking internal transactions. Management in Operations considered that they were merely responsible for ensuring that internal transactions were equal and opposite, not that they were valid. There was an exchange of emails between one of the Traders and Operations management, following which an email was sent by Mr Duffy to a number of front office staff, reminding them that they were responsible for entering internal trades correctly. An extract of the email stated:

“...The currency options back office does not check internal deals. At least in the short term, this situation will not change. This means ... input errors will not be picked up by back office.”

This email was copied to the junior staff in Operations but not the managers in Operations by way of a group email list.

For reasons that are not clear to us, the junior staff in Operations interpreted Mr Duffy’s email to mean that they were no longer required to carry out any checks on internal transactions in Horizon, including checking that internal transactions were equal and opposite. This was not discussed with the managers responsible, who were unaware that their staff had stopped following agreed procedures. As a result of this unauthorised change in procedure, the Traders were able to process false one-sided internal options transactions without them being detected.

Governance and culture

Although our investigation has concentrated on a small part of one business unit within the National, it has given us access to the workings of the Board, its committees and some group-wide functions, such as finance, internal audit and, importantly, risk management. This access has allowed us to form a view of certain aspects of the National’s governance and culture, and we summarise our findings below.

Board oversight and governance

The Board is ultimately responsible for any financial loss or other reduction in shareholder value suffered by the organisation. It has a duty to shareholders to ensure that the requisite systems, practices and culture are in place to manage all the risks to which the organisation is exposed. It discharges this responsibility directly and through various committees and by its supervision of management. A number of reports which could have identified matters relevant to the foreign currency losses were submitted to the Board, committees of the Board, and management groups. These are summarised in the following paragraphs.

Board

The most relevant report provided to the Board was a Risk Management Monthly Board Report. This report did not provide information at a level of detail sufficient for the Board to have identified limit breaches or other issues with the currency options desk. However, we would expect to have seen a comment at some point in 2003 that there were difficulties in calculating VaR, and that limit breaches were occurring. In addition, in April 2002, when VaR for currency options was removed from the daily management report due

to issues relating to accuracy and reliability, we would have expected this to be noted in the report. Furthermore, one of these reports, dated November 2003, stated that in relation to currency options there was a long Australian dollar position, when in fact the records at the time show a large short position. Correct reporting of the position could have prompted discussion of the situation at the 15 December 2003 Board meeting.

PBAC

The Board delegated the evaluation of the adequacy and effectiveness of risk management and financial control, and other internal control systems, and the evaluation of their operation, to the Principal Board Audit Committee (PBAC) until the establishment in August 2003 of the Principal Board Risk Committee (PBRC).

The PBAC met on a regular basis (eight meetings in 2002, seven meetings in 2003 and four meetings in the three months to December 2003). The PBAC considered a range of matters within their charter including risk management up to and including the 6 November 2003 meeting where a presentation under the heading of 'Risk' included the APRA Tripartite Arrangements.

Information provided to PBAC over the last two to three years contains no reports alerting PBAC to issues relating to the National's currency options business. PBAC received directly a range of reports, in particular the January 2003 APRA letter and the report on the learnings from option losses suffered by AIB. Having read these reports, probing of management may have revealed the seriousness of some of the control breakdowns that existed in relation to the currency options business, such as the inability to reliably calculate VaR and the numerous limit breaches.

PBAC receives details on any high risk issues raised by Internal Audit as well as copies of the reports from the external auditors, KPMG. PBAC also receives reports from Risk Management, Compliance and others on an ad hoc basis.

Reports submitted to PBAC

The APRA letter

PBAC requested and received copies of the APRA letter after it had been received in January 2003 and replied to by ECM Risk in February 2003. From the summary submitted to PBAC, the impression gained would have been that the matters raised were relatively minor and were being addressed. This is consistent with the introduction to APRA's letter which notes that overall they did not identify any issues causing significant concern. In fact, the detail of the letter raised issues which were highly relevant to the foreign exchange losses which were subsequently incurred.

Internal Audit reports

Throughout the last five or so years a number of reports were prepared by Internal Audit on the trading activities and controls over the currency options desk. The most significant was an Internal Audit report issued in December 2001, which identified a number of important control weaknesses in currency options. However, because of the introduction of a new Internal Audit rating system, the Internal Audit report prepared for the quarter ended 31 December 2001 and presented to PBAC did not include the relevant issues identified in the 2001 report.

KPMG reports

KPMG reports received by PBAC identified a number of issues relevant to the foreign exchange losses from the audits conducted in 2001 and 2002. These issues were rated as minor and therefore would not have attracted the attention of PBAC. In relation to 2003, the reporting to PBAC by KPMG before the clearance of the 2003 financial statements in November did not raise any significant issues in relation to limit breaches. By the time the draft management letter was issued to management on 10 December 2003 and the final management letter was issued to PBAC in February 2004, a number of 3-star (major) issues in relation to currency options were highlighted. KPMG did not raise issues related to the absence of financial control over currency options.

Report on 'learnings' from the AIB report

PBAC also received a report in May 2002 on the learnings from foreign currency losses at AIB. The minutes of the meeting identify that, unlike AIB, the National uses VaR and other sensitivity measures to ensure that variations from the normal expected trading ranges are identified. However, there were known inaccuracies in the VaR calculations at that time, and this was not reported to PBAC.

PBRC

The PBRC was established in August 2003 but met for the first time only in November 2003. At the first meeting a market risk presentation indicated that the Markets Division business was well within VaR limits, and no mention was made of limit breaches. This may have been true of the business as a whole; however, at the time of this meeting there was considerable discussion between the Markets Division and MR&PC about the extent of limit and VaR breaches, particularly for the currency options desk. This was not reported to the PBRC.

CIB management

Three reports from Internal Audit on global foreign exchange (May 1999, December 2001 and January 2003) were issued to CIB management, which contained significant matters in relation to currency options in 1999 and 2001. It is apparent from email correspondence at that time that senior CIB management did not treat these issues as seriously as they deserved and indeed tried to dismiss them in the context of building a currency options business.

Numerous limit breaches and PUA exceptions were reported to CIB management. A summary of the daily limit excesses was sent by MR&PC to the General Manager Markets (Mr Erdos), who delegated the review to the Head of Money Markets. No action was taken to investigate the limit breaches properly.

Risk Management

MR&PC had a significant number of problems with the currency options desk which arose on an almost daily basis. For example:

- numerous and multiple limit breaches
- exceptions to the Product Usage Authority (PUA) process

- warnings from other market participants
- discussions with and letters from APRA.

MR&PC raised these issues with senior management in the Markets Division and the EGM Risk Management, but no concerted effort was made to ensure that items were fully investigated and followed up. It is apparent that MR&PC was often pressured to approve transactions and did not do so. However on at least one occasion, Markets Division management approved the transactions despite MR&PC's objections.

In most trading environments a healthy tension exists between the dealers and those engaged in risk management processes. The Traders were seen by many in the National, including junior traders on the desk, as having an aggressive and arrogant attitude. This attitude was a particular problem for MR&PC and it is clear from our interviews and an examination of certain emails that there was considerable tension between the Traders, Mr Dillon, and MR&PC. Much of this tension was around the PUA process (explained in Section 4) and limit breaches noted previously.

The perception of MR&PC held by the Traders, Mr Dillon and Mr Erdos was that they were slow, incapable of making decisions, and reported irrelevant limit breaches.

The tension continued through most of 2003 and resulted in a key MR&PC member effectively changing role because of an inability to work with the Traders and Markets Division management. This change was known to the Executive General Manager Group Risk Management (Mr Lewis), and the General Manager Markets (Mr Erdos).

Internal Audit

Internal Audit reports into global foreign currency exchange, especially the ones issued in May 1999 and December 2001, identified significant issues relating to currency options. As issues are progressed, Internal Audit's practice was to reduce the ratings and mark those issues as complete once an action plan has been prepared. Internal Audit did not follow up the results of the action plan to ensure an appropriate control had been implemented. For example, the need to revise currency options limits is marked as complete in June 2003 on the basis of the limit structure being finalised and the implementation of a new risk engine. The risk limits were still being breached in October 2003, the month in which the upgraded risk engine was implemented. In our view this item was not complete.

It is also unclear how the issues identified in the 2001 report on global foreign exchange, initially rated as 3-star, were not re-assessed as 3-star plus under the revised rating system. As 3-star items they were not reported to PBAC.

The culture within the National

We believe that the culture (or the tone at the top) is highly relevant to an understanding of 'what went wrong'. We have evidence, from our interviews and meetings, emails and voice recordings from the currency options desk, of the culture that exists within the currency options desk, the Markets Division, CIB, and the National.

We make these comments understanding that we have only been exposed to a small part of the National's overall business focused in currency options and related areas.

Focus on process

First, there is a focus on process, documentation and procedures manuals, rather than on understanding the substance of issues, taking responsibility and resolving matters. This is apparent in the way Finance, Operations and MR&PC were focused on process and production, with no-one really attempting to understand the nature of the business being conducted. For example, the fact that the currency options desk was reporting large monthly profits in the last quarter of 2003 was not identified as unusual, when there was a significant (and increasing) exposure to the US dollar and the US dollar was weakening.

Abrogation of responsibility

Second, the behaviour of the management in the organisation is that responsibility is 'passed on' rather than assumed. Evidence of this is apparent in Risk Management, which raised issues relating to the currency options desk to CIB management but did not make sure that the CEO or Board were notified when the matters continued over an extended period.

Impact of the culture

The Board and former CEO were attempting to change the culture of the National and promote a more transparent and less arrogant organisation. However, it is clear from a number of matters noted in this report, that significant issues were not escalated to the Board (or its committees) and it seems that there was a focus on suppressing any bad news rather than engaging in a full and frank dialogue. As a consequence, recurring problems such as the limit breaches that the currency options desk incurred were not mentioned to the CEO, the Board or its committees, even when external agencies such as APRA had raised them.

The Board, PBRC and PBAC assumed what was presented to them was a correct and complete analysis of the situation. It was not unreasonable for them to make this assumption but ultimately the Board and CEO are responsible for the culture in the organisation. The Board and CEO must accept responsibility for the 'tone at the top', and for the environment in which management did not report openly on issues in the business.

Meetings with staff and external third parties more directly connected with the Traders reveal that the culture surrounding currency options provided the opportunity for the Traders to trade, incur losses, conceal those losses, and for them not to be detected despite warning signs. Some of the Traders treated aggressively anyone who questioned their activities, and this included MR&PC, Internal Audit, third parties and other members of the Markets Division.

It appears that CIB and Markets Division management either allowed this culture to exist or took no action to prevent it insofar as it related to the currency options desk. Essentially this allowed the Traders to operate unchecked and flout the rules and standards of the bank.

4 The currency options business

KEY POINTS

- The governance of the National is the responsibility of the Board and its committees supported by a large number of management committees including many dealing with risk management.
- The National's Board approves the strategy and the operational plan and is ultimately responsible for the culture of the organisation.
- CIB's strategy for the last 18 months, has been to move away from proprietary trading and focus more on customer business. The development of the currency options desk was part of this strategy.
- The National's VaR limit approved by the Board was A\$80m, of which A\$3.25 million was allocated to the currency options desk.
- CIB had its own back office (Operations Division) and was supported by Group Finance and Group Risk Management.
- MR&PC (part of Risk Management) was responsible for the overview and monitoring of risk management within CIB. However, there was no formal requirement for limit breaches on the currency options desk to be rectified once approved by the Joint Head of Global Foreign Exchange. MR&PC considered that it was not empowered to enforce limit compliance.

In this section we provide a background and context for the losses by explaining the governance structure of the National, the structure of the business unit within which the currency options trading desk operated, and the risk management and controls structure that existed within the business unit.

Board and committees

The National is governed by the Board of Directors and managed by the CEO, who is also a member of the Board.

Corporate governance is discharged by the Principal Board, supported by a number of relevant Board and senior management committees, as well as through the defined roles and responsibilities of the Executive General Managers.

The Board and Board committee structure is set out in the table below which is extracted and paraphrased from the Corporate Governance section of the National's Annual Financial Report 2003.

Table 4.1: Board and Board committees

Board / Committee	Key responsibilities
Board of Directors (Principal Board)	<p>Overall responsibility for corporate governance including:</p> <ul style="list-style-type: none"> ▪ safeguarding stakeholder interests ▪ reviewing and approving future strategy ▪ reviewing past performance ▪ reviewing and monitoring the integrity of external reporting ▪ reviewing and monitoring risk management and compliance ▪ appointing senior and executive management, and determining their performance and remuneration ▪ monitoring and influencing the culture, reputation and ethical standards of the Group ▪ monitoring its own composition and performance
Principal Board Risk Committee (PBRC)	<p>PBRC was established in August 2003 and its responsibilities include:</p> <ul style="list-style-type: none"> ▪ reviewing the Group's risk profile within the context of the Board risk / return profile ▪ implementing and reviewing risk management and internal compliance and control systems throughout the Group ▪ review and set VaR limits
Principal Board Audit Committee (PBAC)	<p>PBAC is responsible (since August 2003) for review and oversight of:</p> <ul style="list-style-type: none"> ▪ the integrity of the accounting and financial reporting processes of the Group ▪ the Group's external audit ▪ the Group's internal audit ▪ compliance with applicable accounting standards to give a true and fair view of the financial position and performance of the Group <p>Until August 2003 PBAC also had responsibility for:</p> <ul style="list-style-type: none"> ▪ evaluating the adequacy and effectiveness of the company's and the Group's risk management and financial control and other internal control systems and evaluating the operation thereof

The key responsibilities are those most relevant to the foreign exchange losses.

Management is accountable to the Board via the Managing Director and Chief Executive Officer at the time, Frank Cicutto. Mr Cicutto's direct reports included the Executive General Managers (EGMs) responsible for CIB (Mr Scholes), Finance (Richard McKinnon), and Risk Management (Mr Lewis) along with other EGMs who met regularly in the Group Executive Forum (GEF).

In addition to their respective executive roles, the above officers, and others, were members of a variety of management committees and other forums focusing on general financial and risk management issues.

In relation to risk management, the key executive bodies include the Group Risk Forum, the Central Risk Management Committee (CRMC), and the Risk Management Executive Committee (RMEC) of CIB.

The Group Risk Forum is the principal executive body for risk policy decision making. The Group Risk Forum is supported by the CRMC which has an operational focus.

Delegations and limits

Management acts within a framework of delegation and limits ultimately derived from the authority of the Board. One such delegation is that the CEO has the authority to approve market risk exposures up to a global VaR¹⁸ limit of A\$80 million which has been constant for the last four years. In turn, the former CEO allocated A\$50 million of this to the EGM CIB and this limit is further subdivided between the divisions, business units and trading desks that make up CIB. The currency options desk has an allocated VaR limit of A\$3.25 million.

Corporate & Institutional Banking

The National has traded currency options for many years as part of what is now Corporate & Institutional Banking (CIB), formerly Wholesale Financial Services. CIB is the business unit responsible for relationships with large corporate clients, banks, other financial institutions and government bodies. Its services and products include debt financing, financial risk management products, and investor services and products. CIB employs some 2,600 people and generates some A\$1,000 million in net profits before tax (some 20% of the National's profits).

Approximately half of CIB revenues are generated by the Markets Division, which is the business segment that focuses on providing clients with a range of traded financial products and risk management solutions. These include foreign exchange, money markets, commodities and financial derivative products, traded globally through a dedicated 24-hour dealing capability.

The National takes on a market-making¹⁹ role in many of these markets, as well as engaging in proprietary trading. CIB is responsible for managing the resulting market risk profile from this activity.

The foreign exchange business has two main trading desks: the currency options desk, where the foreign exchange losses arose, and the spot foreign exchange desk. The currency options desk consisted of seven people including the Traders. Its budgeted profit for the year ended 30 September 2003 was A\$37 million (A\$43 million in 2004).

Following the arrival of the current EGM CIB (Mr Scholes), the strategy for CIB moved to one more focused on sales of products to corporate and institutional customers. Market making and proprietary trading is still needed, to support the price competitiveness and execution capability for the customer business, as well as being a source of revenue in its own right. However, it is clear from the 2004 plan that a further reduction in proprietary trading from the level in 2003 was anticipated.

¹⁸ The global VaR limit was reduced to A\$50 million on 26 January 2004 in response to the losses.

¹⁹ Market-making means simultaneously offering to buy or sell.

Employment of the new currency options team

Gary Dillon commenced employment with the National in July 1998. Mr Dillon was recruited to lead and develop the National's currency options business. Luke Duffy and Gianni Gray were recruited by Mr Dillon in October 1998 as Chief Dealer and Senior Dealer Currency Options respectively, with Mr Gray commencing his employment in London but moving to Melbourne in July 2000. Mr Dillon, Mr Duffy and Mr Gray had all worked together previously. David Bullen was recruited as a Senior Currency Options Dealer in February 2000. Vincent Ficarra started with the National in February 2002 as a Junior Currency Options Dealer.

In October 2002, Mr Dillon was appointed Joint Head of Global Foreign Exchange based in Melbourne, focused on options. At the same time, Mr Duffy was appointed Head of Currency Options. In March 2003, Mr Gray moved back to London with a junior trader who joined the National in October 2000, but they continued reporting to Mr Duffy in Melbourne.

Development of options trading activity

By July 2000 the currency options desk operated on a 24-hour basis with traders in Melbourne and London. It traded actively in the interbank market as well as running a book of customer business. The National's branches and subsidiary banks throughout the world originated customer business and passed it to the currency options desk.

These activities included many of the complex and innovative transaction types that characterise options markets. The currency options desk was authorised to deal in 43 currency pairs²⁰ but concentrated primarily in five currencies.

2004 strategy for the currency options business

CIB's strategy, prepared in July 2003, anticipates that in the year to 30 September 2004 trading income will be only 30 percent of total foreign exchange income. This plan does not contain any specific details for the currency options business, but the clear message is that growth is to be generated from sales to corporate and institutional clients, although some growth in trading income is also expected.

However, a review of the activity in the currency options desk reveals a high level of interbank transactions which is inconsistent with a focus on corporate customer business. While this is not conclusive evidence of a lack of customer focus, a high proportion of the transactions by nominal value were with other major banks in the foreign exchange market.

Horizon system

The original trading system used by the National, Devon, was seen by the currency options desk as not having the functionality required for transactions envisaged for the future, and a new system was designed and introduced in 2000. This system, Horizon, was also designed to streamline processes between front office, back office and finance.

²⁰ 'Currency pairs' are the two currencies that are exchanged in a spot foreign exchange or currency option transaction.

Horizon was a custom-built system developed by an external software company. The software company was small but had developed a foreign exchange options system at another major Australian bank.

Horizon contained a valuation model which enabled the dealers to reflect all market parameters in the option values, including volatility for each strike price ('the smile').

Testing and implementation

We were advised by the National that, as part of the implementation of Horizon, a significant amount of testing was done which involved the preparation of test scripts and the comparison of predicted results to actual results. To test the formulas used to value options and the related Greeks, predicted results were derived from other models and compared to the results generated by Horizon, confirming their accuracy. This work was reviewed by MR&PC. The National was unable to locate details of the testing performed for the implementation of Horizon, and we are therefore unable to conclude on the completeness, accuracy or appropriateness of testing of the new system.

New product development and approval

The currency options desk was engaged in developing a number of complex transactions and structures. The National has a three-step process to approve new products and initiatives:

- A strategic risk assessment (SRA) is required for a new business to confirm the strategic fit and alignment with existing businesses as well as the regulatory and reputational impacts.
- Once an SRA is in place, a risk management document (RMD) is required to address operational and implementation issues for a new product within an existing business. The RMD gives details of risks and mitigation, with sign-offs required from key functional areas such as risk, legal and regulatory as well as the relevant business unit.
- Finally, before a transaction can be undertaken, a Product Usage Authority (PUA) is required. PUAs can be signed off by up to 10 people but a minimum of a global product head and heads of relevant regional operations and finance divisions, the division head and the Head of MR&PC are required to sign off. The PUA provides specific information about the risk characteristics of the product, including the business rationale, compliance with operational capabilities, and legal/tax considerations.

In some instances, however, the currency options desk engaged in transactions before such approvals were granted.

Operations

Reporting directly to the EGM CIB is the back office, or Operations²¹ division, which is responsible for the processing of all transactions in the Markets Division. Operations is structured in teams that align with the different trading desks. Each team performs a range of controls and checking that includes verification, confirmation, settlement, reconciliation and end-of-day processing. The Operations team that was responsible for currency options consists of four employees.

²¹ Operations consists of 138 employees.

Finance

The Finance function of the National reports directly to the CFO. Like some other support functions, Finance operates on a shared services model that includes an embedded team in operational business units.

The CIB Finance team of 95 employees is responsible for planning and decision support, management reporting and financial control of CIB including the foreign currency options business in the Markets Division. The General Manager CIB Finance reports to the National's CFO with a 'dotted line' to the EGM CIB.

In conjunction with the respective desks and businesses within CIB, the Finance team prepares annual financial plans for approval by executive management and the Board.

Management reporting includes the preparation of the daily revenue report (DRR) and monthly management accounts. The DRR is circulated to, among others, the CIB leadership team, MR&PC and Operations. Included in the DRR is a brief commentary on accounting-related matters for the day such as explanations of variances between the source system and general ledger. The DRR does not include commentary on transactions that have a noticeable impact on the profit and loss nor a split of income between sales and trading to monitor whether the business is operating consistently with the approved strategy. The performance of the currency options business is aggregated within the foreign exchange business as a whole.

CIB Finance is also responsible for the preparation and distribution of the monthly management accounts and performance pack to the CIB leadership team, and in a summarised format each quarter to the Board.

Group Risk Management

The National has an enterprise-wide risk management model whereby each business unit is responsible for the identification and quantification of the particular risks it is exposed to and the implementation of appropriate procedures and controls²². In line with this, the primary responsibility for managing risk in currency options was in CIB.

However, the overview and monitoring of the risk management process throughout the group is undertaken by Risk Management, which includes a number of areas, but the most relevant for the market risk in currency options is MR&PC. Internal Audit was also involved in monitoring controls within CIB.

MR&PC

MR&PC is responsible for measuring and reporting the risk arising from the Markets Division's activity, including the transactions in Horizon, to various levels of CIB management. The National had a system of limits covering a number of parameters.

²² Source: Annual Financial Report 2003

There was no clear formal requirement for limit breaches to be rectified by the business, only for them to be approved. MR&PC considered that they had no mandated authority to enforce limit compliance. The control was a graduated reporting and approval structure whereby:

- desk / product limit excesses were required to be approved by the desk head/global product heads
- regional limit excesses were required to be approved by the Markets Division (Mr Erdos)
- global limit excesses were required to be approved by EGMs, the CEO and the Board.

The National was developing a revised limit structure including warning levels (known as 'soft limits') as well as limits ('hard limits'). The distinction between hard and soft limits was never formally included in National policy, but was instituted on a trial basis in currency options with the intention of it being rolled out to other desks by March 2004.

Internal Audit

Internal Audit is a group-wide function that is an important element of the enterprise-wide risk management framework. The Head of Internal Audit reports to PBAC, Central and Regional Risk Management Committees, the CEO and the EGM Group Risk Management.

The Internal Audit work plan for the year is performed by a team of over 100 people assisted by two of the three major auditing firms (excluding KPMG, the National's auditors). A risk-based approach results in a cyclical work plan, whereby operations are reviewed with reference to their relative size and importance to the National, and the findings and ratings from previous reviews. The work performed focuses on the design of internal controls as well as their effective operation and compliance with National's policies and procedures.

5 Warning signs from relevant reports

KEY POINTS

APRA

- Following a review of market risk performed from 26 to 30 August 2002, APRA wrote to the National on a number of issues, but most relevantly, comments on risk limit breaches and a lax approach to limit management. Several internal National emails relating to this were generally critical of the APRA review, and played down the significance of the APRA findings.
- A briefing paper prepared for PBAC does not reflect the seriousness of the comments in the APRA letter.
- The report submitted to PBAC in support of the APRA Section 310 declaration did not include details of limit breaches which were known to management.

Internal Audit

- Internal Audit conducted reviews of currency options at appropriate intervals and issued reports containing a number of important findings.
- The ratings given by Internal Audit to the issues were below the level which required reporting to PBAC. It is not clear how the ratings were determined by Internal Audit as being below the PBAC reporting threshold. In addition, the follow-up of items was inadequate as matters were cleared when the underlying issues remained unresolved.

KPMG

- KPMG, the National's external auditor, identified issues related to currency options since at least January 2002, but these issues were rated 'Minor' until the management letter issued in February 2004.

In this section we discuss reports that were presented to the National that could or should have provided indications about the Traders' activities.

APRA

APRA regularly corresponds with the National on a range of supervisory issues. The correspondence that is relevant to our investigation is a review of market risk performed from 26 to 30 August 2002, resulting in reports to the EGM Group Risk Management, Mr Lewis, and the Chairman of the Board, Charles Allen, on 16 January and 17 January 2003 respectively.

While the APRA report was critical of several matters, it stated:

"...Overall, we did not identify any issues during the visit causing us significant concern at the current time, however, there are some issues noted below that we expect the Bank to address promptly owing to potential for those issues to give rise to significant problems in the future..."

The key findings relevant to currency options were:

- lax approach to limit management
- culture of non-adherence to risk management policies
- valuation rates were captured by the dealers and passed to MR&PC
- problems with interfaces to Infinity risk engine
- no formal model validation or back-testing for the approved VaR model
- stress testing was inadequate and processes for determining region-specific tests differ across regions.

Mr Lewis responded to APRA's letters on 26 February 2003. The Board minutes indicate that this response was not tabled at the Board.

The PBAC meeting of 6 March 2003 was informed that an APRA report on market risk had been received and responded to by management. PBAC noted it had not seen the APRA letter nor the response, and requested that these be circulated at the next PBAC meeting. At the PBAC meeting of 8 May 2003 a memorandum submitted by Mr Lewis was tabled, with the APRA letter of 16 January 2003 and the National's response of 26 February 2003. The PBAC minutes record that "A summary of key points raised by the regulators and the National's response in each case was contained in Mr Lewis's memorandum and noted by the Committee".

We have identified several internal National emails relating to the APRA review. The general theme of this internal correspondence is aimed at criticising the APRA review and playing down the significance of the APRA findings. This correspondence included some from individuals who had previously raised concerns over the risk management process over currency options.

In our opinion the memorandum understates the contents of the APRA letter. For example, in relation to limits the APRA letter states:

"APRA believes that the National's approval to limit management is somewhat lax and not as proactive as it should be."

"While, in themselves, the size and nature of breaches are not significant, we are concerned that lack of clarity over the nature and ownership of limits may be reflective of a culture with the Bank that does not require strict adherence to limit frameworks, potentially leading to more significant limit breaches in the future."

These are summarised in the memorandum as:

*"**Limit usage** – APRA formed the view that the market risk framework was not as proactive as it could be. APRA commented that while the size and nature of limit breaches were not significant in themselves, they considered that more clarity and accompanying controls should be reviewed by the Bank."*

In our view this does not reflect the seriousness of the comments in the APRA letter and in particular the 'lax approach' and 'culture' matters identified. The summary also contains no details of any actions being implemented by the National to resolve the issues raised by APRA or the position of limit breaches at the time.

APRA review, August 2003

In August 2003 APRA updated its review of the previous year and on 4 November 2003 issued a letter to Mr Lewis. A copy was not sent to the Chairman and has not been passed to PBAC. The emphasis of the APRA review is best summarised by the following paragraph in the report:

"...In summary, we recognise that many of the key issues identified in our earlier review, including limit management and information technology, have been substantially progressed in the past year. Nevertheless, our findings reflect that there is still some work to be done in these two areas and we have asked that these matters continue to be given priority and APRA be kept advised of progress".

On 12 December 2003, the General Manager of MR&PC (Mr Lao) replied to the 4 November APRA letter copying Mr Lewis. In his reply to APRA Mr Lao addressed each of the matters raised including the limit usage framework. His reply states:

"Following APRA's feedback during August 2002, the National initiated a soft/hard limit structure which has provided greater delineation between non-negotiable limits and other risk metrics in the market risk limits framework".

This reply does not address the status of limit breaches which at the time amounted to some 866 in the month of October 2003. It does, however, seem consistent with the approach adopted by MR&PC and CIB, that resolution of the limit breaches be resolved by Mr Erdos and Mr Lao by the next CIB Risk Management Executive Committee meeting scheduled for January 2004.

The issue of limit breaches was first raised in August 2002 by APRA and the matter had not been resolved over one year later.

APRA declaration

The National is required to adhere to Prudential Standards issued by APRA. Under one of these, APS 310 paragraph six, the National is required to provide APRA, within three months of the financial year, with a declaration from the CEO endorsed by the Board. The declaration attests that in the past financial year:

- key risks have been identified by board and management
- systems to monitor and manage key risks have been established by board and management, including prudent limits
- these systems are operating effectively and are adequate
- risk management systems descriptions provided to APRA are accurate and current.

The EGM Risk Management submitted a report to the joint Board and PBAC meeting on 6 November 2003 in support of the annual declaration. The Board meeting minutes note that PBAC “had endorsed the attestation and the Risk Management Systems Descriptions”. The Board then authorised the CEO to sign the declaration. Consistent with the PBAC minutes, the PBAC “noted the report and recommended to the Board that it endorse the annual declaration from the CEO”.

The report was signed off by the National through their Requisition on Management (RoM) process. Specifically, a number of questions were asked of management to identify exceptions in relation to adequacy of risk management systems and procedures. The inadequacies in risk management systems and procedures known by management at the time were not included in the report. For example, the large number of limit breaches and the inability to calculate VaR.

Internal Audit

Internal Audit uses a risk-based approach to determine the scope and frequency of audit work and the areas of National’s operations they review. These are the reports Internal Audit issued following reviews of currency options:

- Global Foreign Exchange, May 1999, which included specific work in the currency options area
- Global Foreign Exchange, June 2000, which did not include work on currency options because of systems changes taking place
- FX Options Horizon Development, September 2000
- Global Foreign Exchange, December 2001, which included specific work on currency options
- Global Foreign Exchange, January 2003, which included specific work in the currency options area.

The next Internal Audit review was planned for January 2004.

Global Foreign Exchange, May 1999

In their May 1999 report, Internal Audit rated currency options as unsatisfactory, with five 3-star issues. Three-star issues at that time were defined as “Serious matters for the attention of the Managing Director and reportable to the Board Audit Committee”. The main weaknesses they identified were the inability to reconcile the profit and loss between the front and back offices; no volatility smile included in revaluations; and no independent monitoring of risk concentrations.

The minutes of the PBAC for the meeting on 21 July 1999 recorded that “The Global Currency Options review identified significant issues. Robert Thurley [then the Head of Internal Audit] outlined the matters arising and corrective action taken by management as detailed in the Quarterly Audit Report”. However, the quarterly audit report stated that the review was unsatisfactory and that the 3-star issues “essentially arise from an inadequate control framework surrounding the unique characteristics of dealing in currency options”.

It seems clear from the minutes that the seriousness of the matters in the report was not fully explained to PBAC. However, the review was undertaken before the implementation of Horizon in July 2000. The June 2000 quarterly audit report to PBAC refers to the significant weaknesses in May 1999 and states that substantial efforts to rectify them had been made by management. The implementation of Horizon is flagged as the next major review. There is a comment that a status update of the weaknesses will be provided on a quarterly basis to the appropriate audit committee. Our investigation did not identify any further status updates.

FX Options Horizon Development, September 2000

The September 2000 Internal Audit report on the Horizon system noted that the most recent report on currency options (in May 1999) resulted in an unsatisfactory assessment. The September report said that Horizon would mitigate several of the weaknesses raised in the 1999 report, but would not immediately address the volatility smile nor some of the broader computer security strategy and framework issues within CIB.

The Horizon system development audit was rated as “good” and the report indicated that a post-implementation review would be performed. However, our investigation did not identify any further Internal Audit post-implementation reports on the matter and we do not believe this review was undertaken.

Global Foreign Exchange, December 2001

This report gave the Australian foreign exchange business (which included currency options) an overall rating of adequate. However, the report did contain two 3-star issues in relation to currency options:

- Continuous limit breaches (for 61 out of 61 days). The report noted that “The Global Head of Foreign Exchange approved each of the limit breaches. However, there was nothing documented to either explain the daily limit breaches over this period as they occurred, or suggest any alternate strategies or timeframe to rectify the breach”.
- Incorrect VaR numbers being produced (by Infinity as no volatility smile was used).

In addition, the report commented that major revaluation rates were being sourced by the front office from only one broker (rated 2-star).

The December report defined 3-star items as “Serious matters for the attention of Managing Director and reportable to the Principal Board Audit Committee”. However, the Global Internal Audit (GIA) quarterly report for 31 December 2001 submitted by Mr Thurley to the 14 February 2002 PBAC meeting said:

“To assist the Committee in its duties, GIA proposes the introduction of a ‘three star plus’ for all issues in the range of A\$5 to A\$30 million in place of the current A\$1 to A\$30 million.

The quarterly report has been prepared using this distinction on a trial basis. It reduces the number of matters for PBAC consideration from 70 to 21, including the two current four star issues.”

As a result of this new rating system, the two 3-star issues in currency options were not reported to PBAC. It is not clear to us how the monetary values for these items were assessed by Internal Audit as below \$5 million.

Global Foreign Exchange, January 2003

The January 2003 report did not highlight any significant matters in relation to currency options. However, there are a number of items of relevance to the unauthorised foreign exchange transactions.

In particular, the report raises an apparently new issue “Currency options desk operating limits need to be reviewed”. As with the “Continuous limit breaches” in the previous report, the report makes it clear that limits are still being breached. The report states: “The number of excesses observed in the spot sensitivity limit indicated either the limit was not respected by the desk or it was not accurately reflecting the risk profile desired”. This was rated as 1-star (such matters are only reported to business unit management).

The agreed management action for this issue was “1. Market Risk would finalise the new limit structure for the currency desk; 2. Data feed issue for Infinity Risk Engine would be corrected with the implementation of Cartoo (sic) Project²³”.

It appears that a widely held view was that the limit breaches were caused by the design of the limits rather than by a disregard for the limits, and with better designed limits the excesses (which were fewer than in the previous report) would be largely eliminated. For this reason it seems that the matter was not treated as seriously as it clearly deserved.

Given that multiple limit breaches were still occurring, in our opinion the issue was not resolved and should not have been closed. In addition, given the serious nature of the item (as evidenced by the wording of the reports on limit breaches in currency options), it should not have been graded as 1-star.

In summary, Internal Audit identified significant control weaknesses in their 1999, 2001 and 2003 reports. However, the 2001 and 2003 items relating to limit breaches and VaR were not reported to PBAC.

KPMG

KPMG is the National’s external auditor. We have not had access to their detailed audit strategy or working papers and we have based these comments on copies of correspondence provided to us by the National.

In recent years KPMG has issued letters at the completion of each audit (‘management letters’), to communicate any major control weaknesses or other matters arising from their audit. They also attend most PBAC meetings, and before signing the Independent Auditor’s Report they provide PBAC with an update of risks, areas of audit focus etc. Included in these updates is a section on the status of management letter points. Below are some relevant examples.

²³ The Cartoo project referred to is in fact the Gentoo project to upgrade the Infinity system to enable it to correctly calculate VaR.

Matters for Management Attention – January 2002

The report identified a number of issues, all graded as “Minor”, in relation to options (which included currency options). The relevant items were:

- valuations at mid-market may overstate fair values of derivatives
- no ‘smile’ was used for certain currency options which might lead to mispricing
- market risk is primarily focused on reporting and compliance tasks and insufficient effort is devoted to the “crucial task of identifying and assessing portfolio risks”
- the results of stress testing and scenario analysis were not discussed with executive management or presented to the board.

Matters for Management Attention – February 2003

This report adopted the Internal Audit rating system for issues. A number of the issues included are relevant to currency options and all, with one exception, are rated 1-star. The only 2-star rated item was that certain exotic derivatives were not included in the VaR model used for exposure measurement and calculation of regulatory capital.

The main emphasis in the KPMG report, however, is on the regulatory capital implications, not that risk reporting may not reflect all the risks in the portfolio.

In relation to the UK operations a number of VaR breaches were noted, some of which were due to discrepancies between the valuation of positions by the National’s London and Melbourne operations.

Report to PBAC – 6 November 2003

A report to PBAC, dated 30 October 2003, provided a summary of audit issues and status of the audit for the year ended 30 September 2003. It included a section entitled “Status of Management Letter Points” which contained six items related to CIB (including two technology matters). The two most significant in relation to currency options are “Analyse VaR breaches on FX desks to ensure nostro related” and a comment to “Conduct a bid/offer valuation of trading derivatives to ensure they are allowed for at fair value”.

The minutes of the PBAC meeting record that:

- *KPMG’s assessment of the key business risks had not changed and no major audit findings had arisen from these risks.*
- *Significant audit issues have been discussed with management and appropriately resolved.*

KPMG – Matters for Management Attention Draft 10 December 2003 (not to PBAC) Final 2 February 2004

The draft management letter issued on 10 December 2003 to management contains two matters relevant to currency options, both rated as 3-star issues.

The first is that derivative positions are marked to market at mid rates and an exercise should be performed to quantify the impact of using bid/offer rates.

The second addresses market risk limits and states that “the frequency of limit breaches within the dealing room is indicative of a systemic issue”, and further comments that it is unclear whether the causal factor is the alignment of allocated limits with risk appetite, calibration of the VaR model, trading room culture, infrastructure issues, or a combination of two or more factors.

The comment in the status report dated 30 October 2003, which was discussed at the 6 November 2003 PBAC meeting, does not reflect the draft management letter issued in relation to limit breaches. As noted above, the status report was written in terms of VaR breaches being related to ‘nostro accounts’ and not potential issues with the frequency and reasons for limit breaches as included in the management letter.

The final management letter, dated 2 February 2004 issued to PBAC, also highlights three (rather than two) 3-star issues in relation to currency options. The need to review the use of bid/offer, and the market risk limit breaches matters, remain 3-star and broadly reflect the wording in the draft letter. However, a comment that breaches of VaR limits are not reported to the Risk Management Executive Committee as a matter of course was changed from 2-star to 3-star, which the letter acknowledges was a result of the currency option issues.

APRA annual tripartite Target Review Report – 2003

At the PBAC meeting on 6 November 2003, KPMG presented a report titled “Adequacy and Effectiveness of Compliance Functions” dated October 2003 under a PBAC memorandum titled “APRA Tripartite Targeted Review”. The purpose of the report was to discuss the findings of the 2003 review. This report was prepared in conjunction with the National’s Internal Audit department and two business units were selected for testing, being Cards Australia and Debt Markets. The overall conclusion was that they were satisfied that the National compliance function was adequate and effective. The minutes of PBAC record that the report will be issued to APRA in November 2003.

While the review was on compliance and focused its testing on Cards Australia and Debt Markets, it raised as part of key findings under APS 113 – Capital Adequacy: Market Risk, that from APRA’s review of the market risk structure “numerous limit breaches were noted with limited follow-up and explanation of breaches”. The comment then discusses most breaches were “so-called soft limits”. It also states that “whilst management has agreed actions to be taken to enhance this process our review identified that management’s actions had not yet been implemented. We noted that large volumes of soft limit breaches continued to occur without sufficient investigation and escalation”.

This comment was contained on page 32 of a 78-page report, and based upon our interviews of directors was not raised during the meeting as an issue for their attention.

Response to the findings of the AIB report

As Jim Power had a role in the preparation and presented to PBAC the AIB memorandum referred to in this section, it is not appropriate for us to give any opinion in respect of this section of our report. Accordingly, Deloitte have reviewed this section and have provided an opinion to the Bank in respect of this section. PwC have reviewed the Deloitte opinion.

In response to the March 2002 release of a public report (dated 12 March 2002 by Promontory Financial Group and Wachtell, Lipton, Rosen and Katz) into currency trading losses suffered by AIB, PBAC requested a memorandum on the lessons that the National could learn from AIB's experience. This memorandum was prepared by the General Manager Services, CIB (Bruce Rose) and was presented to PBAC in May 2002.

Content of the memorandum

The memorandum was based on a number of inputs including internal workshops and two internal National documents titled "AIB Allfirst Currency Trading Losses and Control Breakdowns and Implications for NAB" and "Allfirst recommendations". These documents provide a detailed list of control breakdowns and recommendations identified in the AIB report, with corresponding lists of National controls in the UK to mitigate similar breakdowns, and a list of Internal Audit approaches to validate specific controls.

Mr Rose requested and directly received comments from various employees on their view of the National's procedures and controls. Numerous responses were received. However, Mr Dillon's response included the following:

"Both documents generally refer to the relevant section in the Policy manual and use that as a degree of comfort that we have our bases covered. However, the policy manual is a broad (and to some extent high level) document and makes a lot of statements which may or may not be adhered to in practice."

Mr Dillon further states:

"... I think the real test of our level of control is in the detail of the specific business structure in place. This is where I believe the NAB currency option business platform (sales/front office/back office/accounting), set up to accommodate the global currency option business, is far superior to others in the market, and most others internally."

A reply was also received from Kevin Bakhurst from Finance, relating to the Markets Division Melbourne back office control, in which he says that the daily profit and loss analysis for large movements is "not an effective tool" because significant profit and loss differences arose from the use of different systems in the front and back offices. In addition he states that the profit and loss is not reconciled daily to the general ledger, but monthly. The AIB report notes the importance of this control and the need to explain large daily profit and loss movements.

Many other issues raised in the AIB report were not addressed in the memorandum, including, for example:

- the extent of proprietary trading and how to monitor and control it
- the involvement of the Chairman and CEO in the risk infrastructure and regular reporting to them to monitor the trading business
- how reports from supervisory agencies should be treated
- excessive reliance on VaR
- ignoring other risk information available
- that all transactions should be checked for reasonableness of market price and economic rationale

- proper limits need to be in place
- the need for several senior managers in a unit to understand the intricacies of proprietary trading before it is undertaken.

Key points in the memorandum

The memorandum presented to PBAC was a seven-page document divided into sections titled Key Control Breakdowns, Learnings, Actions to be Taken, and a Recommendation. There were five key control breakdowns identified comprising “Confirmations” and “Revaluation Rates”, “Internal Audit and Risk Control Resources”, “Inadequate Supervision” and “Segregation of duties”.

Under actions to be taken, the memorandum included the following statements:

“The National’s operating model will not prevent a fraud however it is extremely unlikely that a material fraud of this nature would go undetected for any length of time”

“Wholesale Financial Services and Group Risk Management are collaborating through a number of workshops to stress test and refine our control environment in the wake of the AIB/Allfirst loss”

At the time of the PBAC meeting Mr Rose was unavailable and Jim Power presented to PBAC. The minutes of the meeting state that Mr Power noted that the underlying cause of the Allied Irish Bank’s losses was a flawed corporate governance model which allowed a number of control breakdowns to occur without the detection of the losses.

The minutes conclude:

“Mr Power noted that management acknowledged that treasury trading is a high risk function, however, the overall conclusion was that the National has appropriate controls to identify control breakdowns on a timely basis to ensure that any losses are minimised”

Mr Rose’s memorandum clearly acknowledges that the National’s operating model will not prevent fraud but would detect material fraud after a period of time.

An entry in the minutes of the National’s Board meeting on 6/7 May 2002, following the PBAC meeting, states:

“A report concerning Allied Irish Bank’s FX losses had been reviewed and it was noted that the Group had appropriate controls in place to identify control breakdowns on a timely basis to ensure that any FX losses are minimised.”

6 Impacts on customers and third parties

KEY POINTS

- Our investigation did not reveal any adverse (or unduly beneficial) impact on customers or third parties from the National's currency options losses.
- Although our investigation identified high levels of spot trading and complex options transactions, the interbank dealing of the Traders does not suggest collusion.

Third parties

We focused our investigation only on interbank counterparties and third party suppliers used by the currency options desk.

Interbank counterparties

Our investigation identified an unusually high volume of spot transactions as well as a number of complex option transactions with interbank counterparties. However, with a limited number of exceptions, the dealing on the interbank market does not appear unusual. The exceptions were investigated further for the purposes of identifying trends, evidence of off-market pricing, or other features that might suggest collusion or other improper activity by third parties. While we identified some amendments to interbank deals, they appear isolated and we do not consider them to warrant extensive further investigation.

Third parties

We considered whether third party suppliers to the currency options desk may have contributed to the control failures and/or benefited from the losses incurred by the National.

CIB was required under Risk Management policy to obtain certain option revaluation rates (ie volatilities) from an independent third party which would be verified by MR&PC. Before 2003 two suppliers were used for this purpose, although from early 2003 the rates were provided by one only. Our analysis of the Traders' email files shows that these rates were usually supplied by one particular person at the supplier.

There is some indication that the Traders sought to influence the volatility rates supplied, by specifying rates for the suppliers to provide back to them. Two of the Traders stated that they prepared a spreadsheet of the required revaluation rates and emailed this to the supplier. Later in the day the spreadsheet was emailed back to the Traders and MR&PC.

We have recovered emails which support the Traders' contention that the revaluation rates were prepared by them and returned by the suppliers unamended. We do not believe that MR&PC conducted any scrutiny of these rates.

Customers

Nothing has come to our attention during our investigation to suggest that any customer of the National incurred a direct or indirect loss as a result of the action of the Traders.

Appendix A Terms used in currency options trading

At-the-money option	an option where the strike price is equal to the current forward rate
Call option	a contract that confers the right but not the obligation to purchase a specified item from another party at a fixed price at a future date. The party that purchases the call option (the buyer) is said to be 'long a call', the seller (or writer) of the option is said to be 'short'
Currency pair	the two currencies that are exchanged in a foreign exchange or currency option transaction
Delta	the theoretical measure of the sensitivity of the option price to a change in the price of the underlying currency (usually expressed as a percentage)
In-the-money option	an option where the strike price is favourable compared to the current forward rate. For the buyer of a call option, this means the strike price is lower than the prevailing forward rate
Off-market rate	a rate that differs significantly from an observable publicly available market rate
Out-of-the-money option	an option where the strike price is unfavourable compared to the current forward rate. For the buyer of a call option, this means the strike price is higher than the prevailing forward rate
Put option	a contract that confers the right but not the obligation to sell a specified item to another party at a fixed price at a future date. See Call option
Revaluation	the value of a financial instrument (eg an option) calculated by applying the current market rate to the existing contract in order to measure the current market value. Option portfolios are usually revalued daily, and changes reported as profit and loss
Spot equivalent position	the delta of an option multiplied by the face (or notional) value of the option; also called the delta equivalent position
Spot foreign exchange	the purchase or sale of one currency for another where a rate is agreed between two counterparties today for physical delivery in two business days
Spot rate	the rate at which one currency is exchanged for another today for delivery in two days' time
Spot sensitivity	for limit reporting purposes, the National defines its own 'spot sensitivity' measure that quantifies the percentage change in the option portfolio value (including both options and spot and forward currency positions) resulting from a 1.5% change in underlying spot rates (all currency pairs). This definition is unique to the National
Strike price	the price at which the holder of an option can exercise the option; also called exercise price
Value at Risk (VaR)	a risk measure that estimates the potential loss arising from adverse movements in market prices over a defined holding period (eg one day) with a specified level of confidence (eg 95%).
Volatility	a measure of how widely prices deviate from the average price over a defined period