



INTERNAL AUDIT DIVISION

REPORT 2016/135

Audit of cash management in the
Investment Management Division of
the United Nations Joint Staff Pension
Fund

The Investment Management Division needed
to strengthen controls in cash management,
particularly in the area of foreign exchange
operations

15 November 2016
Assignment No. AS2016/801/03

Audit of cash management in the Investment Management Division of the United Nations Joint Staff Pension Fund

EXECUTIVE SUMMARY

The objective of the audit was to assess the adequacy and effectiveness of governance, risk management and control processes over cash management in the Investment Management Division (IMD) of the United Nations Joint Staff Pension Fund. The audit covered the period from 1 January 2015 to 29 February 2016 and it included cash flow forecasting and foreign exchange operations.

IMD needed to strengthen controls in cash management, particularly in the area of foreign exchange operations. IMD also needed to improve its cash flow forecasting and extend the cash forecast beyond the five-day period to effectively manage its cash portfolio. To improve foreign exchange operations, IMD needed to develop clear and well-defined guidelines, enhance controls over monitoring and oversight of trades, analyze transaction costs, and assess the use of competitive bidding in executing foreign currency trades.

OIOS made nine recommendations. To address the issues identified in the audit, IMD needed to:

- Consider its currency risk, portfolio allocation strategy and operational requirements in performing cash flow forecasting to effectively manage the cash portfolio;
- Establish and document the amount of operating reserves as prescribed in the Investment Procedures;
- Clarify in its Investment Policy, Investment Procedures and Risk Management Manual whether trading and investment in foreign currencies within the cash and short-term portfolio is an authorized investment activity;
- Develop Standard Operating Procedures outlining the trading practices for foreign exchange trades;
- Employ the two-person rule in foreign exchange trading to prevent erroneous trades;
- Conduct a risk/return analysis to support its decisions to sell foreign currency with negative interest rates;
- Develop tools or mechanisms to periodically analyze and monitor transaction costs to assess the execution quality of foreign exchange trades;
- Conduct an assessment of the use of FXall for competitive bidding versus non-competitive execution of foreign exchange trades to ensure whether there is a size threshold which favours the two methods of trading; and
- Include the foreign currency trades in its quarterly trade turnover reports to be able monitor the turnover ratios of foreign currency trading.

IMD accepted the recommendations and initiated action to implement them.

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Audit of cash management in the Investment Management Division of the United Nations Joint Staff Pension Fund

I. BACKGROUND

1. The Office of Internal Oversight Services (OIOS) conducted an audit of cash management in the Investment Management Division (IMD) of the United Nations Joint Staff Pension Fund (UNJSPF).

2. The Fund comprises the Secretariat, with the responsibility for pension plan administration, and IMD, with the responsibility for the investment of the Fund's assets. The management of the investments of the Fund is the fiduciary responsibility of the Secretary-General of the United Nations. The Secretary-General has delegated this responsibility to Representative of the Secretary-General for the Investments of UNJSPF, who in turn is assisted by IMD and advised by the Investments Committee.

3. The Fund invested in a global portfolio of investments comprising equities, fixed income, real assets, alternative assets, and cash and short-term assets. As at 31 March 2016, the preliminary market value of the Fund's total assets was \$52.6 billion; cash and cash equivalents made up 4.9 per cent of the whole portfolio, or about \$2.5 billion.

4. The responsibilities of the two global custodians of the Fund include safekeeping of all securities and cash, processing of investment transactions, collection of income, and maintenance of physical control over security instruments and other assets. The Master Record Keeper (MRK), which is one of the custodians at the same time, provides detailed records and balances of investment transactions and prepares reports for accounting and management purposes.

5. The IMD Operations Section provides a daily cash report to the Fixed Income Section by using the cash management module of the trading order management system. The Fixed Income Section is responsible for analyzing the Fund's currency exposure based on projected cash flows, payment of benefits and the overall portfolio allocation strategy.

6. Cash and short-term investments asset class for 2015 and 2016 is shown in Table 1.

Table 1

Ratio of cash in bank, cash equivalents and short-term investments to total fund assets (millions of US dollars)

	2015						2016			
	1st Qtr		2nd Qtr		3rd Qtr		4th Qtr		1st Qtr	
	Amount	Percentage								
Cash In-Bank	1,489	2.79%	958	1.79%	1,152	2.29%	1,294	2.48%	2,288	4.35%
Cash Equivalents	0	0.00%	0	0.00%	50	0.10%	267	0.51%	278	0.53%
Short-Term investment	150	0.28%	518	0.97%	428	0.85%	271	0.52%	15	0.03%
Sub-total	1,639	3.08%	1,476	2.8%	1,630	3.2%	1,833	3.5%	2,581	4.90%
Total Fund Assets	53,297	100.00%	53,574	100.0%	50,418	100.0%	52,114	100.0%	52,642	100.0%

Source: MRK cash balance report from 1 January 2015 to 31 March 2016.

7. Comments provided by IMD are incorporated in italics.

II. AUDIT OBJECTIVE, SCOPE AND METHODOLOGY

8. The audit was conducted to assess the adequacy and effectiveness of UNJSPF governance, risk management and control processes over the management of cash by IMD.

9. This audit was included in the 2016 OIOS risk-based work plan due to the risks associated with managing significant volume of cash flows, including foreign currencies, and high amount of cash balances.

10. OIOS conducted the audit from February to June 2016. While the audit covered the period from 1 January 2015 to 29 February 2016, OIOS also used data pertaining to prior years to establish trends and patterns. Based on an activity-level risk assessment, the audit covered higher and medium risk areas in cash management, namely, cash flow forecasting and foreign exchange operations.

11. The audit methodology included: (a) interviews of key IMD staff; (b) walk-through of processes and systems established to manage cash; (c) testing and analysis of foreign exchange trades; (d) sample review of 50 foreign exchange trade orders; and (e) review of bank reconciliations, reports and documentation relating to cash management.

III. OVERALL CONCLUSION

12. IMD needed to strengthen controls in cash management, particularly in the area of foreign exchange operations. IMD needed to consider its currency risk, portfolio allocation strategy and operational requirements in performing cash flow forecasting and extend the cash forecast beyond the five-day period to effectively manage its cash portfolio. To improve foreign exchange operations, there was need to develop clear and well-defined guidelines, enhance controls over monitoring and oversight of trades, develop tools to analyze transaction costs, and conduct competitive bidding for foreign currency trades.

IV. AUDIT RESULTS

A. Cash flow forecasting

Need to improve cash flow forecasting in IMD

13. Cash flow forecasting and cash flow management are important pillars of asset and liability management with implications in terms of liquidity risk, interest rate risk and currency risk management. IMD Investment Procedures require the Fixed Income Section to analyze the Fund's currency exposure based on projected cash flows, payment of benefits and the overall portfolio allocation strategy. Regarding liquidity, the Procedures state that funds held in operating reserves should not exceed the projected liquidity required to meet operating expenses.

14. IMD did not analyze and document the Fund's currency exposure based on projected cash flows. Further, payments of benefits, which were made in various currencies every month, were not considered as part of cash forecasting. The IMD Operations Section provided a daily cash report to the Fixed Income Section that showed a five-day forward looking daily cash balance in various currencies. Based on the daily cash report, the Fixed Income Section determined and executed foreign currency trades as needed.

15. While the daily cash report was useful for determining immediate liquidity needs, it could not be a substitute for cash flow forecasting. In the absence of analysis of the Fund's currency risk and a portfolio strategy based on the projected cash flow, IMD may not effectively manage its cash portfolio.

(1) IMD should: (i) as prescribed in the Investment Procedures, consider its currency risk, portfolio allocation strategy and operational requirements in performing cash flow forecasting; and (ii) extend the cash forecast beyond the five-day period to effectively manage its cash portfolio.

IMD accepted recommendation 1 and stated that it will extend forecasting for investment purposes from 5 to 10 days. Cash flow forecasting longer than 10 days was not practical due to the dynamic nature of markets, nor was it possible with the current system. Ten days was the maximum time period in which the Bloomberg AIM system would generate a cash flow forecast. In addition, IMD was investigating the possibility of separating cash used for benefit payments from cash for investment purposes. Recommendation 1 remains open pending receipt of evidence that IMD: (i) has taken measures for consideration of currency risk, portfolio allocation strategy and operational requirements in performing cash forecasting; and (ii) has extended cash forecasts to 10-day periods.

IMD did not determine the amount of minimum operating reserves

16. IMD Investment Procedures defined "operating reserves" as cash in bank accounts established as needed with custodians, with the purpose of providing the liquidity necessary for disbursements and/or payments for operating and other miscellaneous expenses. The funds held in such reserves should not exceed the projected necessary liquidity to meet operating expense requirements.

17. IMD did not establish the amount of operating reserves; therefore, it was not possible to determine the portion of cash that pertained to operating reserves and the portion of investable cash.

18. In the absence of an established operating reserve, IMD may not manage cash economically and maintain optimum liquidity requirements.

(2) IMD should establish and document the amount of operating reserves as prescribed in its Investment Procedures.

IMD accepted recommendation 2 and stated that it was currently updating its Investment Procedures Manual in order to include the amount of operating reserves. Recommendation 2 remains open pending receipt of the updated Investment Procedures establishing the amount of operating reserves.

B. Foreign exchange operations

There was no provision in the Investment Policy, Investment Procedures and Risk Management Manual on trading in foreign currencies

19. IMD operations are governed by the Investment Policy, Investment Procedures and Risk Management Manual which enunciate principles and provide guidance on investment activities relating to the Fund. There was no provision in any of these documents authorizing IMD to take positions in foreign currency cash (or make investments in foreign currency) except to meet operational requirements. Further, the Investment Procedures listed the types of "cash" investments that the Fixed Income Section could hold, which included cash and cash equivalents such as time deposits, money market funds, the United States treasury bills, etc. without any mention of foreign currency cash as an investment activity.

20. During 2015 alone, there were several large volume trades in foreign currencies aggregating \$5.1 billion (see Table 2). It was unclear as to how much of this was necessitated by operational needs. In the absence of any provision or guidance in this regard in the Investment Policy, Procedures and Risk Management Manual, IMD may not effectively manage its foreign currency risk and position its foreign exchange investments in its cash portfolio. Further, the safety criteria stipulated in the Investment Policy may be compromised without a clear strategic direction on foreign currency investments because the foreign exchange market is volatile and foreign currency trades are usually considered to be speculative.

(3) IMD should clarify in its Investment Policy, Procedures and Risk Management Manual whether trading and investment in foreign currencies within the cash and short-term portfolio is an authorized investment activity.

IMD accepted recommendation 3 and stated that it will include language in its Investment Procedures and Risk Management Manual to confirm authorization to trade and invest in foreign currencies within the cash and short-term portfolio. Recommendation 3 remains open pending clarification of the Investment Policy, Procedures and Risk Management Manual as to whether trading and investment in foreign currencies is an authorized investment activity.

Need for clear written procedures to serve as guidelines in the trading of foreign currencies

21. Standard Operating Procedures (SOPs) provide a way to communicate and apply consistent standards and practices within the organization and assign responsibility for essential tasks.

22. OIOS review of a sample of 50 foreign exchange trades showed that there was a need for clear guidelines to ensure efficient and consistent trades. OIOS noted the following:

- a. A General Service staff, who was not authorized by the Representative of the Secretary-General, executed trades that corresponded to about 20 per cent of all trades (in terms of number of trades) during the audit period;
- b. For trades executed through competitive bids, the minimum number of counterparties was not clearly defined (it was usually three or four bidders while IMD's foreign exchange trading platform FXall allowed up to seven bidders), and it was not clear how certain counterparties were selected for each trade;
- c. There were a few instances when a trader executed trades before receiving the cash activity report, i.e., without knowing the actual cash requirement; and
- d. There was no competitive bidding on restricted currencies.

23. IMD stated that due to the low activity of foreign currency trades in the past, there was no pressing need for a trading manual or guidelines. OIOS is of the view that IMD needs to develop SOPs for such trades.

(4) IMD should develop Standard Operating Procedures outlining the trading practices for foreign exchange trades.

IMD accepted recommendation 4 and stated the Fixed Income team will write SOPs to reflect its trading practices for foreign exchange trades. Recommendation 4 remains open pending receipt of SOPs outlining the trading practices for foreign exchange trades.

There were a number of erroneous foreign exchange trades

24. The IMD Risk Manual stated that IMD should mitigate the probability of trade errors by employing the four-eye principle, or two person rule, to protect against erroneous trades. Further, it required the Risk and Compliance Section to review all controls by taking sample trades and following their entire life cycle to determine the effectiveness and efficiency of trading and investment controls.

25. From a review of the foreign currency trades during the audit period, OIOS determined that 26 out of the 532 trades (or 4.8 per cent) were related to either a wrong trade, i.e., a 'buy' instead of a 'sell' trade, or material trade errors like overbuying or overselling a currency. OIOS was unable to determine the exact number of errors as this would require a detailed analysis of the entire population of trades. Such erroneous trades increased IMD's exposure to foreign currency risk and the inherent transaction cost.

26. IMD explained that such errors were due to oversight by the foreign currency trader, who was a professional staff hired for the purpose of currency trading, and that management already took actions to replace the professional staff. OIOS established that these were not just clerical mistakes but significant trade errors which should attract zero tolerance according to professional norms.

27. OIOS also noted that the authorization for foreign exchange transactions, which should be a key control to ensure the correctness and accuracy of the proposed trades, was not able to detect these errors; rather, they authorized them. OIOS review of 50 selected authorizations showed that the foreign currency conversion amounts on the trade authorization documents were always the same as the actual trade amounts up to two decimal points, which indicated that the authorizations were completed post-trade.

(5) IMD should employ the two-person rule in foreign exchange trading to prevent erroneous trades and also ensure that the Risk and the Compliance Section reviews authorizations as part of its quarterly compliance reviews.

IMD accepted recommendation 5 and stated that it did employ the two-person rule recommended by this audit. This was done verbally, via email or Bloomberg to confirm foreign exchange transactions prior to execution. An executed transaction also required dual authorization when input into the AIM order management system and also on the trade authorization documents (after trade completion). As aforementioned, IMD Compliance did for the first time review foreign exchange as part of its recently completed June 2016 Quarterly Compliance Review. Part of this review involved the post trade sample trade authorization documents. In addition to the current practices, a Bloomberg trading platform has been implemented. This would enable further improvements by including pre-trade documentation of the existing practices. Oversight of this pre-trade documentation would be included in IMD Compliance quarterly reviews. Recommendation 5 remains open pending receipt of evidence that pre-trade controls have been implemented and are being monitored by the IMD Compliance Section.

Need for a risk/return analysis to support decisions to sell certain foreign currencies

28. In its strategic framework for the biennium 2014-2015, IMD stated that it was absolutely crucial for the management of the investment of the Fund's assets to be able to rely on accurate tools to measure and analyze the risks involved in investment decisions.

29. Each day, the Fixed Income Section received a cash activity report from the Operations Section showing the balance of cash for each currency. If a currency with a negative interest rate carried a balance, the Fixed Income Section sold the balance and converted it to the base currency of United States

dollars (USD) to avoid interest charges. In case of need for the same currency the following day, or days, the Fixed Income Section purchased a certain amount of that currency to meet operational needs. OIOS expected to see a documented risk/return analysis of such decisions, i.e., whether the benefit of avoiding negative interest charges exceeded the cost and risk of foreign exchange¹ trading, but the Fixed Income Section did not conduct such analysis. OIOS determined that the amounts of negative interest charges were extremely low, e.g., -0.50 per cent per annum for Euro², as compared to the risk of loss from currency trades, although a gain was equally possible.

30. There was a significant increase in the volume of foreign exchange trades from 2013 to 2015 as shown in Table 2. OIOS analysis showed that 87 per cent of these trades were with currencies that had negative interest rates³, particularly the Euro (EUR), Swiss Franc (CHF), Japanese Yen (JPY) and Swedish Krona (SEK).

Table 2

Volume of foreign currency trades for the period 2013 to 2015 (US dollars)

Year	No. of Trades	Trade Volume	Annual Rate of Increase
2013	57	1,248,644,135	
2014	309	4,258,615,545	241%
2015	480	5,116,680,378	20%

Source: Master Record Keeper Passport Year End Cash Balance Report 2013-2015.

31. Table 3 shows the trade volume and number of trades of major currencies with negative rates of interest during the audit period (January 2015 to February 2016).

Table 3

Trade volume per currency (millions of US dollars)

	EUR		CHF		JPY	
	Trade Volume	No. of Trades	Trade volume	No. of Trades	Trade Volume	No. of Trades
Buy Side	1,871	148	558	63	832	20
Sell side	(845)	108	(350)	58	(147)	13
Net buys/Total Trades	1,026		208		685	

Source: Master Record Keeper Passport Foreign Currency Cash Activity Report from Jan 1, 2015 to Feb 29, 2016.

32. Further analysis of trades in these currencies showed that IMD was purchasing back the same currencies it had sold within a short period of time, i.e., within days or a week. As shown in Table 3, there was high frequency of trades in EUR, CHF and JPY during the audit period (spanning approximately 296 trade days). On average, a foreign currency trade took place every 1.16 days for EUR, 2.45 days for CHF and 8.97 days for JPY. This practice resulted in significant increase in the number and volume of foreign exchange trades within the cash portfolio during this period and also raised questions on the efficiency and economy of such decisions because each of these buy/sell transactions entailed costs and risks, as explained below:

¹ Foreign exchange risk includes risk factors such as inflation, appreciation/devaluation, sovereign risk, geopolitical events, macroeconomic indicators of the country, other impacts caused by central banks' monetary policy, and volume of the foreign exchange currency market. Negative interest rate is only one factor within the monetary policy.

² Source: Master Record Keeper.

³ Negative interest is equivalent to banks charging depositors interest from their cash deposits instead of paying depositors interest income for it.

- a. Market cost of trading, or spread, was significantly higher than the savings from avoiding negative interest rates. For example, savings from selling a \$10 million equivalent of Euro was about \$138 per day whereas the spread cost was about \$20,000 (\$10,000 for selling and another \$10,000 for buying, considering a spread cost of 10 basis points⁴ on average).
- b. In one specific case in January 2015, the real loss from buying back a currency one day after it was sold was \$1.9 million compared to a saving of \$580 by avoiding negative interest charges⁵.

33. The lack of risk/return analysis to support decisions concerning foreign exchange trading in currencies with negative interest rates resulted in lack of accountability and transparency in these operations.

(6) IMD should conduct a risk/return analysis to support its decisions to sell foreign currency with negative interest rates.

IMD accepted recommendation 6 and stated that it will include in the scope of its planned currency study an analysis of the sales of foreign currency with negative interest rates. Recommendation 6 remains open pending receipt of the currency study on analysis of the sales of foreign currency with negative interest rates.

There was no transaction cost analysis of foreign currency trades

34. Transaction costs for foreign currencies are implicit costs as they are already built into the exchange price of the currency traded (also called “spread”). OIOS expected to see that IMD analyzed and monitored the transaction cost of foreign exchange trades. It is a best practice to undertake regular analysis of transaction costs against industry standards.

35. During the audit period, IMD did not conduct any analysis of foreign currency transaction costs. The Fixed Income Section reported trade volumes per counterparty in quarterly management meetings of IMD, but this was not adequate for transaction cost analysis purposes.

36. In the absence of transaction cost analysis per counterparty, it was not possible to establish whether the distribution of trade volume was justified. The IMD Brokerage Committee was supposed to monitor brokers and counterparties but the Committee did not have the tools and data to be able to assess whether average rate performance (spread) by counterparty was acceptable. Therefore, monitoring by the Brokerage Committee was not an effective control. IMD stated that it did not have the necessary tools to conduct transaction cost analysis.

37. By not measuring the foreign currency transaction cost, IMD may be underestimating or overlooking the cost of its foreign currency decisions. Further, in the absence of analysis and monitoring of transaction costs, IMD may not efficiently manage its operating costs and compare them against industry benchmarks.

⁴ Research by Russel Investments in May 2012 mentioned that the average FX trade cost was 10 basis points.

⁵ OIOS confirmed that at the time of the sell decision, the Fixed Income Section did not know that a portfolio manager would request the same currency on the following day.

(7) IMD should develop tools or mechanisms to periodically analyze and monitor transaction costs to assess the execution quality of foreign exchange trades.

IMD accepted recommendation 7 and stated that it will use the FXGo Bloomberg trading platform to periodically analyze and monitor transaction costs to assess the execution quality of 'in competition' foreign exchange trades. The FXGo platform would also enable post trade reporting on cost savings in USD per currency and counterparty for 'in competition' transactions. The Bloomberg FXGo platform is expected to be live by the end of 2016. Recommendation 7 remains open pending receipt of the analysis produced by the Bloomberg AIM system on transaction costs of foreign exchange trades.

Foreign currency trades for large volumes were executed without competitive bidding

38. The foreign currency market is the most liquid financial market in the world and daily trading volume is about \$5.3 trillion⁶. According to best practices, having multiple and competitive bids from counterparties is a better way for having the most favorable rates in executing foreign currency trades.

39. OIOS analysis of the trades showed that about 63 per cent of the total dollar volume (22 per cent of the total number of transactions) of foreign currency trades was executed without multiparty and competitive bidding. These trades were consummated with a single counterparty through electronic messaging via Bloomberg Chats or over the phone.

40. The Fixed Income Section stated that for large volume trades, it chose a single counterparty to obtain the best deal in the market and added that the Fund's large volume trades, if done through FXall, may alert the market and influence behavior that would affect the exchange rates to the disadvantage of IMD. OIOS established, however, that IMD's average trade volume was not material enough to influence the rates in the foreign exchange market, which was a very liquid and global market. In conclusion, OIOS did not see any documented evidence or analysis showing that non-competitive bidding was more favorable to the Fund.

41. In the absence of competitive bidding, IMD was not utilizing FXall's competitive bid feature but instead relying on the single counterparty's rate by assuming it to be the best rate in the market.

(8) IMD should conduct an assessment of the use of FXall for competitive bidding versus non-competitive execution of foreign exchange trades to determine whether there is a size threshold which favours the two methods of trading.

IMD accepted recommendation 8 and stated that it will include in the scope of its planned currency study an assessment of the use of FXGo for competitive bidding versus non-competitive execution by phone or by chat for trades of varying sizes in order to determine whether or not there is a size threshold which favours the two respective methods of trading from a best execution perspective. IMD will also include in the scope of its planned currency study an assessment of the aforementioned trading methods for execution of illiquid crosses. Recommendation 8 remains open pending receipt of the results of the study on competitive bidding versus non-competitive execution of foreign exchange trades to determine whether there is a size threshold which favours the two methods of trading.

⁶ Bank of International Settlement Triennial Central Bank Survey as of April 2013.

There was no oversight on the foreign currency trades turnover ratio

42. IMD Risk Management Manual requires that a trading and portfolio turnover ratio above 30 per cent should trigger examination by the Risk and Compliance Section of: (i) the basis for the trades; (ii) documentation of due diligence by the portfolio manager; and (iii) the recommendation of the external advisor, where applicable.

43. OIOS noted that the Risk and Compliance Section did not monitor turnover ratios for foreign currency trading even though the turnover ratio was about 368 per cent for 2015. The Risk and Compliance Section stated that foreign currency trades were not included in the turnover trades to be monitored. In the absence of such monitoring, IMD was not able to detect high turnover in foreign currency trades and exercise appropriate oversight.

(9) IMD should include foreign currency trades in its quarterly trade turnover reports in order to monitor the turnover ratios of foreign currency trading.

IMD accepted recommendation 9 and stated that the Fixed Income team generated reports from Northern Trust to monitor transaction volumes and turnover. Going forward, the Fixed Income team would share these reports with the IMD Compliance Section and the IMD Brokerage Committee to monitor FX activity including trading counterparties. In fact, IMD Compliance did review foreign exchange trades as part of its recently completed June 2016 Quarterly Compliance Review. This was the first time reviewing foreign exchange volumes and sample trade authorization documents. Recommendation 9 remains open pending receipt of the quarterly trade turnover reports for monitoring the turnover ratios of foreign currency trading.

V. ACKNOWLEDGEMENT

44. OIOS wishes to express its appreciation to the management and staff of IMD for the assistance and cooperation extended to the auditors during this assignment.

(Signed) Eleanor T. Burns
Director, Internal Audit Division
Office of Internal Oversight Services

STATUS OF AUDIT RECOMMENDATIONS

Audit of cash management in the Investment Management Division of the United Nations Joint Staff Pension Fund

Rec. no.	Recommendation	Critical ⁷ / Important ⁸	C/ O ⁹	Actions needed to close recommendation	Implementation date ¹⁰
1	IMD should: (i) as prescribed in the Investment Procedures, consider its currency risk, portfolio allocation strategy and operational requirements in performing cash flow forecasting; and (ii) extend the cash forecast beyond the five-day period to effectively manage its cash portfolio.	Important	O	Receipt of evidence that IMD: (i) has taken measures for consideration of currency risk, portfolio allocation strategy and operational requirements in performing cash forecasting; and (ii) has extended cash forecasts to 10-day periods.	30 June 2017
2	IMD should establish and document the amount of operating reserves as prescribed in its Investment Procedures.	Important	O	Receipt of the updated Investment Procedures establishing the amount of operating reserves.	30 June 2017
3	IMD should clarify in its Investment Policy, Procedures and Risk Management Manual whether trading and investment in foreign currencies within the cash and short-term portfolio is an authorized investment activity.	Important	O	Clarification of the Investment Policy, Procedures and Risk Management Manual as to whether trading and investment in foreign currencies is an authorized investment activity.	30 June 2017
4	IMD should develop Standard Operating Procedures outlining the trading practices for foreign exchange trades.	Important	O	Receipt of the Standard Operating Procedures outlining the trading practices for foreign exchange trades.	30 June 2017
5	IMD should employ the two-person rule in foreign exchange trading to prevent erroneous trades and also ensure that the Risk and the Compliance Section reviews authorizations as part of its quarterly compliance reviews.	Important	O	Receipt of evidence that pre-trade controls have been implemented and are being monitored by the IMD Compliance Section.	November 2016
6	IMD should conduct a risk/return analysis to support its decisions to sell foreign currency with negative interest rates.	Important	O	Receipt of the currency study on analysis of the sales of foreign currency with negative interest rates.	31 December 2017
7	IMD should develop tools or mechanisms to	Important	O	Receipt of the analysis produced by the	31 March 2017

⁷ Critical recommendations address critical and/or pervasive deficiencies in governance, risk management or control processes, such that reasonable assurance cannot be provided with regard to the achievement of control and/or business objectives under review.

⁸ Important recommendations address important (but not critical or pervasive) deficiencies in governance, risk management or control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.

⁹ C = closed, O = open

¹⁰ Date provided by IMD in response to recommendations.

STATUS OF AUDIT RECOMMENDATIONS

Audit of cash management in the Investment Management Division of the United Nations Joint Staff Pension Fund

Rec. no.	Recommendation	Critical ⁷ / Important ⁸	C/ O ⁹	Actions needed to close recommendation	Implementation date ¹⁰
	periodically analyze and monitor transaction costs to assess the execution quality of foreign exchange trades.			Bloomberg AIM system on transaction costs of foreign exchange trades.	
8	IMD should conduct an assessment of the use of FXall for competitive bidding versus non-competitive execution of foreign exchange trades to determine whether there is a size threshold which favours the two methods of trading.	Important	O	Receipt of the results of the study on competitive bidding versus non-competitive execution of foreign exchange trades to determine whether there is a size threshold which favours the two methods of trading.	31 December 2017
9	IMD should include foreign currency trades in its quarterly trade turnover reports in order to monitor the turnover ratios of foreign currency trading.	Important	O	Receipt of the quarterly trade turnover reports for monitoring the turnover ratios of foreign currency trading.	November 2016

APPENDIX I

Management Response

Management Response

Audit of cash management in the Investment Management Division of the United Nations Joint Staff Pension Fund

Rec. no.	Recommendation	Critical ¹ / Important ²	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
1	IMD should: (i) as prescribed in the Investment Procedures, consider its currency risk, portfolio allocation strategy and operational requirements in performing cash flow forecasting; and (ii) extend the cash forecast beyond the five-day period to effectively manage its cash portfolio.	Important	Yes	IMD Director	June 2017	IMD will extend forecasting for investment purposes from 5 to 10 days. Cash flow forecasting longer than 10 days is not practical due to the dynamic nature of markets, nor is it possible with the current system. Ten days is the maximum time period in which the Bloomberg AIM system will generate a cash flow forecast. In addition, IMD is investigating the possibility of separating cash used for benefit payments from cash for investment purposes.
2	IMD should establish and document the amount of operating reserves as prescribed in its Investment Procedures.	Important	Yes	IMD Director	June 2017	IMD is currently updating its Investment Procedures Manual in order to include the amount of operating reserves.
3	IMD should clarify in its Investment Procedures and Risk Management Manual whether trading and investment in foreign currencies within the cash and short-term portfolio is an authorized investment activity.	Important	Yes	IMD Director	June 2017	IMD will include language in its Investment Procedures and Risk Management Manual to confirm authorization to trade and invest in foreign currencies within the cash and short-term portfolio.
4	IMD should develop Standard Operating Procedures outlining the trading practices for foreign exchange	Important	Yes	Fixed Income Team	June 2017	The Fixed Income team will write Standard Operating Procedures to reflect its trading practices for

¹ “Critical” recommendations address critical and/or pervasive deficiencies in governance, risk management or control processes, such that reasonable assurance cannot be provided with regard to the achievement of control and/or business objectives under review.

² “Important” recommendations address important (but not critical or pervasive) deficiencies in governance, risk management or control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.

Management Response

Audit of cash management in the Investment Management Division of the United Nations Joint Staff Pension Fund

Rec. no.	Recommendation	Critical ¹ / Important ²	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
	trades.					foreign exchange trades.
5	IMD should employ the two-person rule in foreign exchange trading to prevent erroneous trades and also ensure that the Risk and the Compliance Section reviews authorizations as part of its quarterly compliance reviews.	Important	Yes		Implemented	<p>IMD does employ the two-person rule recommended by this audit. This is done verbally, via email or Bloomberg to confirm foreign exchange transactions prior to execution. An executed transaction also requires dual authorization when input into the AIM order management system and also on the trade authorization documents (after trade completion).</p> <p>As aforementioned, IMD Compliance did for the first time review foreign exchange as part of its recently completed June 2016 Quarterly Compliance Review. Part of this review involved the post trade sample trade authorization documents.</p> <p>In addition to the current practices, a Bloomberg trading platform is being implemented. This will enable further improvements by including pre-trade documentation of the existing practices. Oversight of this pre-trade documentation will be included in IMD Compliance quarterly reviews.</p>
6	IMD should conduct a risk/return analysis to support its decisions to sell	Important	Yes	IMD Director	31 December 2017	IMD will include in the scope of its planned currency study an

Management Response

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Rec. no.	Recommendation	Critical ¹ / Important ²	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
	foreign currency with negative interest rates.					analysis of the sales of foreign currency with negative interest rates.
7	IMD should develop tools or mechanisms to periodically analyze and monitor transaction costs to assess the execution quality of foreign exchange trades.	Important	Yes	Fixed Income team	31 March 2017	IMD will use the FXGo Bloomberg trading platform to periodically analyze and monitor transaction costs to assess the execution quality of in competition foreign exchange trades. The FXGo platform will also enable post trade reporting on cost savings in USD per currency and counterparty for in competition transactions. The Bloomberg FXGo platform is expected to be live by the end of the year.
8	<p>IMD should include in the scope of its planned currency study an assessment of the use of FXGo for competitive bidding versus non-competitive execution by phone or by IBchat for trades of varying sizes in order to determine whether or not there is a size threshold which favors the two respective methods of trading from a best execution perspective.</p> <p>IMD will also include in the scope of its planned currency study an assessment of the aforementioned trading methods for execution of illiquid crosses.</p>	Important	Yes	IMD Director	31 December 2017	<p>IMD will include in the scope of its planned currency study an assessment of the use of FXGo for competitive bidding versus non-competitive execution by phone or by IBchat for trades of varying sizes in order to determine whether or not there is a size threshold which favours the two respective methods of trading from a best execution perspective.</p> <p>IMD will also include in the scope of its planned currency study an assessment of the aforementioned trading methods for execution of illiquid crosses</p>

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9	IMD should include foreign currency trades in its quarterly trade turnover reports in order to monitor the turnover ratios of foreign currency trading.	Important	Yes		Implemented	The IMD Fixed Income team already generates reports from Northern Trust to monitor transaction volumes and turnover. Going forward, the Fixed Income team will share these reports with the IMD Compliance Section and the IMD Brokerage Committee to monitor FX activity including trading counterparties. In fact, IMD Compliance did review foreign exchange trades as part of its recently completed June 2016 Quarterly Compliance Review. This was the first time reviewing foreign exchange volumes and sample trade authorization documents.