Office of Internal Oversight Services

INTERNAL AUDIT DIVISION

REPORT 2016/017

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

Overall results relating to the effective management of credit risk were initially assessed as satisfactory.

FINAL OVERALL RATING: SATISFACTORY

18 March 2016
Assignment No. AS2016/801/01

CONTENTS

AUDIT REPORT

Audit of credit risk 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 management of credit risk in the Investment Management Division (IMD) of the United Nations Joint Staff Pension Fund (UNJSPF).

2. In accordance with its mandate, OIOS provides assurance and advice on the adequacy and effectiveness of the United Nations internal control system, the primary objectives of which are to ensure (a) efficient and effective operations; (b) accurate financial and operational reporting; (c) safeguarding of assets; and (d) compliance with mandates, regulations and rules.

3. The Fund invested in a global portfolio of investments comprising equities, fixed income, real assets, alternative assets and short-term instruments. As at 30 September 2015, the preliminary market value of the Fund’s assets was $50.4 billion; $12.9 billion or 25.65 per cent of which were attributable to fixed-income investments. The fixed-income portfolio comprised investments in 21 currencies.

4. Credit risk is the primary risk associated with fixed-income investments. It is defined as the risk of financial losses arising from an issuer’s inability to pay debt obligations. One common way of managing credit risk and maintaining the quality of a bond portfolio was establishing the minimum credit rating for the portfolio. Credit rating agencies assign bond issuers a credit rating based on their ability to make interest and principal payments in full and on schedule as well as their likelihood of default.

5. In order to effectively manage credit risk, IMD introduced a credit risk policy in May 2008. The policy instituted a mechanism to assess the creditworthiness of counterparties and to manage credit risk through quality management by setting credit limits for fixed-income investments. The policy addressed the following important areas concerning credit risk management:

- (i) Approving and maintaining appropriate credit exposure measurement standards;
- (ii) Establishing limits for amounts and concentrations of credit risk, monitoring and implementing a review process for credit risk exposure; and
- (iii) Ensuring adequate controls over credit risk.

6. Credit risk was managed by the Fixed-Income team in IMD comprising one senior investment officer and two investment officers, reporting to the Deputy Director for Investments. The Representative of the Secretary-General (RSG) for the Investments of the UNJSPF had the ultimate responsibility for overseeing credit risk management, taking into consideration advice from the Investment Committee. IMD used three major credit rating agencies for its assessment of credit risk in the fixed-income portfolio: Moody’s Corporation (Moody’s), Standard & Poor’s and Fitch Ratings Incorporated, which are recognized statistical rating organizations designated by the United States Securities and Exchange Commission. IMD also established investment limits to minimize concentration of credit risk.

II. OBJECTIVE AND SCOPE

7. The audit was conducted to assess the adequacy and effectiveness of IMD governance, risk management and control processes in providing reasonable assurance regarding the **effective management of credit risks by IMD**.

8. This audit was included in the IAD work plan for 2015 due to the risk that inadequate controls over credit risk management could adversely affect the Fund's ability to preserve the capital of the Fund and to obtain a long-term real rate of investment return.

9. The key control tested for the audit was regulatory framework. For the purpose of this audit, OIOS defined the key control as controls that provide reasonable assurance that adequate policies and procedures: (i) exist to guide IMD management of credit risk; (ii) are implemented effectively; and (iii) ensure the reliability and integrity of financial and operational information.

10. The key control was assessed for the control objectives shown in Table 1.

11. OIOS conducted the audit from August to December 2015. The audit covered the period from July 2013 to September 2015. The audit excluded the review of short-term investments as it would be covered in another audit assignment in 2016; the performance of the Fund's investments as it was covered in another audit in 2015; and foreign exchange risk, which was covered by the United Nations Board of Auditors as at 31 December 2014.

12. OIOS conducted an activity-level risk assessment to identify and assess specific risk exposures, and to confirm the relevance of the selected key controls in mitigating associated risks. Through interviews, analytical reviews and tests of controls, OIOS assessed the existence and adequacy of internal controls and conducted necessary tests to determine their effectiveness.

III. AUDIT RESULTS

13. The IMD governance, risk management and control processes examined were initially assessed as **satisfactory**[1] in providing reasonable assurance regarding the **effective management of credit risk by IMD**. IMD established and implemented appropriate standards for credit exposure measurement. IMD also established and implemented operational investment limits to minimize concentrations of credit risk. In addition to credit measurement and investment limits, IMD monitored its fixed-income portfolio for events such as upcoming bond maturities, calls, credit downgrade and changes in benchmark composition and allocation. The exposure to foreign exchange rate volatility as main contributor for the underperformance of the fixed income portfolio was observed by the Board of Auditors as at 31 December 2014.

14. The initial overall rating was based on an assessment of the key control presented in Table 1 below. The final overall rating is **satisfactory**.

[1] A rating of **"satisfactory"** means that governance, risk management, and control processes are adequately designed and operating effectively to provide reasonable assurance regarding the achievement of control and/or business objectives under review.

Table 1: Assessment of key control

Business objective	Key control	Control objectives			
		Efficient and effective operations	Accurate financial and operational reporting	Safeguarding of assets	Compliance with mandates, regulations and rules
Effective management of credit risk by IMD	Regulatory framework	Satisfactory	Satisfactory	Satisfactory	Satisfactory
FINAL OVERALL RATING: SATISFACTORY					

Regulatory framework

IMD implemented established standards for credit exposure measurement

15. Pursuant to the investment policy, IMD could only purchase bonds that had an investment grade credit rating assigned by at least one of the recognized rating services.

16. The minimum credit rating was defined as Baa3 by Moody's, and BBB by Fitch Ratings Incorporated and Standard & Poor's. IMD expanded the minimum credit rating for its fixed income portfolio from A3/A to Baa3/BBB in the investment policy issued in April 2014. This change assisted IMD in better aligning with the policy benchmark for long-term fixed income.

17. IMD adopted the benchmark of the Barclays Capital Global Aggregate (BCGA) index as a broad-based measure for its fixed income portfolio. The BCGA index consisted of 24 local currency markets and included treasury, government-related, corporate and securitized fixed rate bonds from both developed and emerging markets issuers. As of 30 September 2015, the Fund was overweight in bonds with a higher credit rating (Aaa - Aa/AAA - AA) and underweight in those with a lower credit rating (A - Baa/A - BBB) as compared to the allocation of the BCGA index.

18. Since the RSG approved the change in the minimum credit rating in the investment policy in April 2014, IMD was gradually increasing the allocation to debt securities with the minimum credit rating (Baa/BBB), which accounted for 6.6 per cent of the portfolio as of 30 September 2015. This was still a significant underweight position as compared to the benchmark allocation of 15.77 per cent in such securities. IMD also had a small portion of securities that was not rated as investment grade by any of the three rating agencies; it accounted for 1.8 per cent of the fixed income portfolio. These securities were collateralized by mortgages or secured by the United States government.

19. IMD regularly reviewed the portion of securities with the minimum credit rating in its fixed-income portfolio and reported the results to the Investment Committee quarterly. The documentation showed that IMD invested in securities with the minimum credit rating (Baa/BBB) only where it perceived, based on quantitative and qualitative analysis, that the Fund was adequately compensated for taking on the extra credit risk.

20. Moreover, IMD monitored any changes in the credit rating of its bond assets weekly. During the period from June 2013 to September 2015, there were no instances in which bonds with the Baa/BBB rating were downgraded to non-investment grade. Furthermore, IMD had no events of default during the

same period. OIOS concluded that controls were adequate over approving, maintaining and implementing appropriate standards for credit exposure measurement.

IMD implemented investment limits for amounts and concentrations of credit risk and regularly monitored credit risk exposure

21. The investment and risk policies introduced positional and transactional investment limits on debt securities to minimize concentrations of credit risk. The investment limits established the maximum holdings in debt securities of corporate and sovereign issuers, one of which limited the maximum holding of international and regional financial institutions, sovereign states or those guaranteed by sovereign states to 20 per cent of the total amount of the issue. They also imposed a 15 per cent restriction on the maximum holding of a single sovereign state's bonds. The RSG must approve any exceptions.

22. As of 30 September 2015, the fixed-income portfolio principally consisted of government and corporate bonds. Table 2 shows the allocation of the fixed-income portfolio. OIOS reviewed the holdings and composition of the fixed-income portfolio to assess whether the Fund was compliant with the holding requirements.

Table 2
Composition of fixed-income portfolio as of 30 September 2015
(United States dollars)

Type of bonds	*Value*	*Proportion*
Government/Government agencies	8,340,421,860	64%
Corporate bonds	3,853,013,736	30%
Municipal/Provincial	528,433,653	4%
MBS (commercial/government)	206,299,226	2%
Other	4,015,480	0%
Total fixed-income portfolio	**12,932,183,955**	**100%**

Source: Master Record Keeper report

23. The review showed that the Fund's holding in sovereign bonds exceeded the established investment limits. It also showed that certain Government Bonds exceeded the maximum issuer limit. However, these exceptions and the rationale for maintaining the positions were reviewed and approved by the RSG. Moreover, IMD had controls embedded in the trade execution system to detect any trade orders that conflicted with the compliance criteria. Also, IMD had a weekly process to review and report any compliance breaches to the investment team and a quarterly process to further look into the holdings of the fixed-income portfolio and report any irregularities to the RSG. OIOS, therefore, concluded that controls were adequate over adherence to the established investment limits for amounts and concentrations of credit risk.

IMD monitored events that could potentially influence its management of credit risk

24. According to the risk management manual, in addition to the credit measurement and investment limits, IMD was to monitor its fixed-income portfolio on a daily basis and evaluate information from advisors and the financial community in support of the management of the fixed-income portfolio. The investment policy also required any individual trade of fixed-income securities to be approved by any two authorized signatories. Sales and purchases of debt securities exceeding $200 million required the Director's authorization as one of two signatories.

25. During the period from July 2013 to June 2015, there were 404 purchases or sales of debt securities, 338 transactions or 84 per cent of which represented purchases. The average value of purchases and sales were $21.7 million and $32.1 million respectively, with the largest transactional value being $152 million for a purchase and $169 million for a sale. OIOS reviewed 20 transactions or 5 per cent of the universe during the period for their authorization and supporting documentation. The review showed that, in all cases, the trades were supported by the appropriate level of authorization and documentation as required by the investment policy.

26. During the same period, the Fund had a net realized gain of $22 million pertaining to the trades in 2013, a net realized loss of $32 million in 2014 and $153 million for the period from January to June 2015 as shown in Table 3.

Table 3
Realized gains and losses on fixed income by event
(United States dollars)

Fiscal Year	*2013*	*2014*	*Jan-Jun 2015*
Redemption	7,919,934	(47,399,075)	(81,634,648)
Principal pay-down	936,364	269,595	(89,767)
Sales	13,205,259	14,878,121	(71,452,424)
Total realized gain/(loss)	**22,061,557**	**(32,251,359)**	**(153,176,839)**

Source: Master Record Keeper report

27. The events that realized gains and losses were bond redemption and sales, principal pay-down and currency translation losses. The exposure to foreign exchange rate volatility was the main contributor for the underperformance of the fixed income portfolio. Since the United Nations Board of Auditors made recommendations on this issue as at 31 December 2014, OIOS did not make an additional recommendation on this matter.

28. The Fund held 18 bonds with a call option and the fixed-income team monitored its exposure to bonds with a maturity of less than a year including potential calls. As of 30 September 2015, the portfolio held 19.04 per cent exposure to securities with a maturity of less than a year. Both calls and concentration in short-term maturities expose the Fund to reinvestment risk or the risk of reinvesting at different interest rates or conditions than the original investments. Reinvestment risk may also affect the yield-to-maturity of the total portfolio, consequently affecting the actuarial assumptions of the UNJSPF. IMD closely monitored its fixed-income portfolio for events such as upcoming bond maturities, calls, credit downgrade/upgrade and changes in benchmark composition and allocation. OIOS concluded that controls were adequate over monitoring of events that could potentially influence the Fund’s management of credit risk.

IV. ACKNOWLEDGEMENT

29. 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.

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

APPENDIX I

Management Response

UNITED NATIONS — NATIONS UNIES

INTEROFFICE MEMORANDUM — MEMORANDUM INTERIEUR

TO: A:	Ms. Lawrence-Hume Chief New York Audit Service Internal Audit Division, OIOS	03 March 2016
THROUGH: PAR:	Ms. Carolyn Boykin Representative of the Secretary-General Investment Management Division United Nations Joint Staff Pension Fund	C. B 3 March 2016
FROM: DE:	Mr. Daniel Willey Compliance Officer Investment Management Division United Nations Joint Staff Pension Fund	

SUBJECT: OBJECT: **Draft report on an audit of credit risk management in the Investment Management Division of the United Nations Joint Staff Pension Fund (Assignment No. AS2016/801/01)**

1. Reference is made to your memorandum dated 19 February 2016 providing the report on the above-mentioned audit.

2. IMD takes note that the "overall results relating to the effective management of credit risk were satisfactory" and with this communication confirms the factual accuracy of the report.

3. I wish to thank you and OIOS for the constructive interaction with IMD staff during this audit.

cc: Mr. Toru Shindo, Deputy Director, Investment Management Division, IMD
Mr. Daniel Willey, Compliance and Audit Focal Point, IMD
Ms. Cynthia Avena-Castillo, Professional Practices Section, Internal Audit Division, OIOS
Ms. Stara Khan, Senior Risk Assistant, IMD
Ms. Wasantha Jayasinghe, Senior Compliance Assistant, IMD