



INTERNAL AUDIT DIVISION

AUDIT REPORT

The UNJSPF Investment Management Division's Front Office - Fixed Income Group

IMD needs to reassess the validity of the fixed income benchmark, conduct meaningful peer comparison reviews and address the foreign exchange risk arising from its investments.

11 June 2010
Assignment No. AS2010/801/01

United Nations  Nations Unies

INTEROFFICE MEMORANDUM

MEMORANDUM INTERIEUR

OFFICE OF INTERNAL OVERSIGHT SERVICES · BUREAU DES SERVICES DE CONTRÔLE INTERNE
INTERNAL AUDIT DIVISION · DIVISION DE L'AUDIT INTERNE

TO: Mr. Warren Sach, Representative of the Secretary-General
A: for the Investments of UNJSPF

DATE: 11 June 2010

FROM: Fatoumata Ndiaye, Director
DE: Internal Audit Division, OIOS

Fatoumata

REFERENCE: IAD: 10- 00482

SUBJECT: **Assignment No. AS2010/801/01 - Audit of the UNJSPF Investment Management**
OBJET: **Division's Front Office - Fixed Income Group**

1. I am pleased to present the final report on the above-mentioned audit.
2. Based on your comments, we are pleased to inform you that we will close recommendations 13 and 14 in the OIOS recommendations database as indicated in Annex 1. In order for us to close the remaining recommendations, we request that you provide us with the additional information as discussed in the text of the report and also summarized in Annex 1.
3. Please note that OIOS will report on the progress made to implement its recommendations, particularly those designated as high risk (i.e., recommendations 2, 3, 6, and 9) in its annual report to the General Assembly and semi-annual report to the Secretary-General.

cc: Ms. Angela Kane, Under-Secretary-General, Department of Management
Ms. Suzanne Bishopric, Director, Investment Management Division, UNJSPF
Mr. Swatantra Goolsarran, Executive Secretary, UN Board of Auditors
Ms. Susanne Frueh, Executive Secretary, Joint Inspection Unit
Mr. Moses Bamuwanye, Chief, Oversight Support Unit, Department of Management
Ms. Jaana Sareva, Chief, Legal Office, UNJSPF
Mr. Byung-Kun Min, Special Assistant to the USG-OIOS
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INTERNAL AUDIT DIVISION

FUNCTION

“The Office shall, in accordance with the relevant provisions of the Financial Regulations and Rules of the United Nations examine, review and appraise the use of financial resources of the United Nations in order to guarantee the implementation of programmes and legislative mandates, ascertain compliance of programme managers with the financial and administrative regulations and rules, as well as with the approved recommendations of external oversight bodies, undertake management audits, reviews and surveys to improve the structure of the Organization and its responsiveness to the requirements of programmes and legislative mandates, and monitor the effectiveness of the systems of internal control of the Organization” (General Assembly Resolution 48/218 B).

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EXECUTIVE SUMMARY

Audit of the UNJSPF Investment Management Division's Front Office - Fixed Income Group

OIOS conducted an audit of the United Nations Joint Staff Pension Fund's (UNJSPF) Investment Management Division's (IMD) Front Office - Fixed Income Group. The overall objective of the audit was to assess the adequacy of policies and procedures and the governance mechanism in place to determine whether the fixed income portfolios meet the objectives of the Fund. Also, the audit assessed the risk management tools and reporting used in managing the portfolios on a day to day basis, and compliance with the fixed income guidelines. The audit was conducted in accordance with the International Standards for the Professional Practice of Internal Auditing.

The fixed income group would benefit from selecting an appropriate benchmark against which to track the performance of the fixed income portfolio. Also, IMD should conduct peer comparison reviews to assess the performance of the total fixed income portfolio relative to peer funds. IMD should also take note of the key person risk within the fixed income group, whereby essential functions are staffed by a single individual. Furthermore, achieving overall improvement will require IMD to address a number of significant issues including the need to:

- Implement reporting that enables the senior investment officer to have a longer duration within which to execute foreign currency transactions.
- Implement a risk management strategy to manage currency risk.
- Implement industry limits within the corporate sector to protect the fixed income portfolio against a downturn in a particular industry.

OIOS was unable to review the information technology internal control environment supporting the fixed income group within the scope of this audit. IMD ISS leadership was heavily involved in new application implementation and thus not available during the audit contact period.

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I. INTRODUCTION

1. The Office of Internal Oversight Services (OIOS) conducted an audit of the United Nations Joint Staff Pension Fund's (UNJSPF) Investment Management Division (IMD) Front Office - Fixed Income. The audit was conducted in accordance with the International Standards for the Professional Practice of Internal Auditing.

2. The Fund comprises the Secretariat, with the responsibility for administrative matters, and IMD, with the responsibility for the investment of the Fund's assets. The management and administration of investments of the Fund is the fiduciary responsibility of the Secretary-General of the United Nations. This responsibility has been delegated to the Assistant Secretary-General for Central Support Services, as the Representative of the Secretary-General (RSG) for the Investments of the UNJSPF. The Representative is assisted by IMD, which manages the Fund's portfolio on a day-to-day basis.

3. The Fund invests in a global portfolio of equities, fixed income, real estate and short-term instruments. All investments must meet the criteria of safety, profitability, liquidity and convertibility as endorsed by the General Assembly. As of 31 December 2009, the market value of the Fund's assets was \$37.54 billion compared to \$36.55 billion as of 30 September 2009, an increase in assets of 2.7 per cent during the period. As of 31 December 2009, the asset allocation was: 64.2 per cent in equities, 30.2 per cent in fixed income, 3.7 per cent in real estate, and 1.9 per cent in cash and short-term holdings.

4. As of 31 December 2009 the assets of the Fund were invested in 41 countries (including emerging markets), in regional institutions, international institutions and in real-estate investment trusts. As for currency diversification, 44.2 per cent of the investments were in United States Dollars and the remaining 55.8 per cent were in 26 other currencies, including 14.9 per cent in Euros.

5. The fixed income fund, with a market value of \$11.3 billion as of 31 December 2009, comprises the long dated and the short term portfolios. The long dated portfolio invests in government, corporate, securitized (MBS, ABS, CMBS), municipal/provincial and inflation linked securities, whereas the short term portfolio, in addition to holding cash, invests in securities not exceeding 360 day maturity. Total fixed income returns (in per cent) as of 31 December 2009 underperformed the benchmark Barclays Capital Global Aggregate Index for 1, 3 & 5 years as follows:

Group	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>
UNJSPF Total Fixed Income	5.4	5.3	3.5
BC Global Aggregate	6.9	7.1	4.6
Variance	-1.5	-1.8	-1.1

6. Comments made by the UNJSPF Investment Management Division are shown in italics.

II. AUDIT OBJECTIVES

7. The main objectives of the audit were to:

- (a) Assess the governance mechanism in place to determine whether the investment management team achieves the objectives of the Fund;
- (b) Assess the risk attribution, impact analysis and escalation process;
- (c) Assess and evaluate compliance with policies and procedures, documentation of investment decisions and adherence to investment guidelines;
- (d) Identify the transaction capture process to determine whether trade economics are captured timely and accurately and reflected in the daily profit and loss and risk reporting; and
- (e) Assess the validity of data feeds between systems for integrity and reliability, and to ascertain whether information technology systems support the business.

III. AUDIT SCOPE AND METHODOLOGY

8. The audit covered the Front Office - Fixed Income function at UNJSPF IMD for the period 1 January 2009 – 31 December 2009.

9. Investment management is the professional management of financial securities, such as equity and fixed income, and other assets, such as real estate to meet specified investment goals for the benefit of the stakeholders. The front office function includes elements of strategy implementation, research, security selection, and ongoing monitoring of investments to support a hold or sell decision. The purchase and sale of securities is routed to and facilitated by a trading desk

10. The methodology included a review of the organization structure, examining policies, procedures, processes, documentation, system, and practices with respect to the IMD Front Office – Fixed Income functions. The audit included testing of sample cases to assess compliance with policies and procedures, and leading industry practices. Additionally, the audit included interviews with IMD management and key staff.

IV. AUDIT FINDINGS AND RECOMMENDATIONS

A. Front Office

Foreign Exchange Gain/Loss Calculation

11. Northern Trust defines a foreign exchange gain/loss as the difference between the rates struck on the foreign exchange deal vs. the WM Reuters 4:00 London close (the rates used for converting all local values to the base currency) for the day prior to the settlement date of the foreign exchange deal.

12. Also, as detailed in the UNJSPF IMD Operations Section Manual, dated August 2009, section 7.01.5 “Foreign Exchange Transaction Gains and Losses: Foreign exchange transactions are recorded using the transaction rates on the date of trade, with matching US\$ equivalent (in the event both the currency buy and sell are non US\$). A gain or loss may ensue due to a change in exchange rate on settlement date.”

13. OIOS noted that the foreign exchange rate is agreed between the fixed income trader and the foreign exchange dealer before entering into the transaction and is the rate at which the transaction should settle. As such, the rate on settlement should not have a bearing on the foreign exchange realized gain/loss calculation.

Recommendation 1

(1) IMD should revise the methodology for calculating the realized currency gain/loss. The revised methodology should be documented in the policy manual

14. *IMD accepted recommendation 1 stating that it is in the process of implementing a Trade Accounting method versus Settlement Date to record transactions. This is an important distinction and will take place with the implementation of the new Portfolio Accounting/Securities and Cash Reconciliation System (RFP 1281) and thus the implementation is dependent in part on the timely launching of the new software. It is the intent of the IMD to follow Global Investment Performance Standards (GIPS) in its performance measurement reporting practices. Recommendation 1 remains open pending the implementation of the accounting software and the revision of the currency gain/loss calculation.*

UNJSPF/IMD Cash Activity Report

15. The foreign exchange transactions are based on the UNJSPF/IMD Cash Activity report prepared by the operations group. This is a five day forward looking report highlighting positions settling in the upcoming five business days. Based on this report, the fixed income group would transact foreign exchange to settle positions highlighted on the Cash Activity Report.

16. In OIOS' view, there should be greater coordination between the fixed income and equity portfolio investment officers to increase the five day window, whereby the fixed income group has a longer timeframe to manage the foreign currency requirements for the Fund.

17. IMD also needs to implement a cash projection report whereby currency requirements are communicated by the various investment officers as they anticipate the need for a particular currency, thus enabling the fixed income investment officer to develop a view on a currency and effect transactions at the best possible rate.

Recommendation 2

(2) IMD should implement currency forecasting that enables the fixed income investment officer to have a longer duration than the current five day window within which to execute foreign currency transactions

18. *IMD accepted recommendation 2 stating that it will work with the custodian(s) and an independent MRK to increase this forecasting window to up to 30 days. A 30 day window will inevitably be more imprecise than a five day window.* Recommendation 2 remains open pending the implementation of the revised currency forecasting window.

Currency Risk

19. In the Proposed Programme Budget for the Biennium 2010-2011, dated 18 August 2009, it is stated, "Foreign exchange transactions have increased by 650 per cent in the past 12 months." Given the number and volume of foreign exchange transactions, IMD is at risk of adverse foreign exchange market moves that could translate into losses. Also, the fixed income securities are susceptible to gains/losses from foreign currency translation back to the base currency; the US dollar. Therefore while a security may appreciate in market value, it is still at risk of generating realized losses due to currency translation. During 1 January 2009 through 31 December 2009, the fixed income group transacted in foreign exchange with a market value of \$ 8.65 billion.

20. Listed below are some realized losses incurred in 2009. Of the total loss (\$64.1 million), a small percentage is attributable to the market (\$1.3 million), whereas the majority of the loss (\$62.8 million) is due to re-denominating or restating the foreign currency into the reporting currency of the Fund, the US dollar. Any time an investor holds a foreign currency, whether cash or denominated investments, one is subject to currency risk. Simply put, currency risk is the potential for loss due to fluctuations in exchange rates. Currency risk can literally turn a profit on a foreign investment into a loss or vice versa. Given this scenario, IMD should on a case by case basis manage currency risk to avoid losses as evidenced in Table 1.

Table 1 – Realized Gains/Losses

Description	Realized Gain/Loss – Base (US\$)		
	Market – Base	Translation – Base	Total – Base
POLAND(REP OF) 5.25% BDS 25/10/17	210,237.84	-6,325,993.48	-6,115,755.64
POLAND(REP OF) 5.25% BDS 25/10/17	32,648.7	-1,116,351.79	-1,083,703.09
POLAND(REP OF) 5% BDS 24/10/13	-173,557.3	-4,173,386.64	-4,346,943.94
POLAND(REP OF) 4.75% BDS 25/04/12	15,901.47	-734,782.39	-718,880.92
POLAND(REP OF) 4.75% BDS 25/04/12	122,152.19	-4,776,085.55	-4,653,933.36
POLAND(REP OF) 4.75% BDS 25/04/12	43,367.64	-1,836,955.99	-1,793,588.35
POLAND(REP OF) 5.25% BDS 25/10/17	287,623.84	-10,406,441.96	-10,118,818.12
POLAND(REP OF) 5.25% BDS 25/10/17	153,232.33	-4,916,429.28	-4,763,196.95
POLAND(REP OF) 5.25% BDS 25/10/17	31,321.07	-1,065,226.34	-1,033,905.27
POLAND(REP OF) 5.75% BDS 23/09/22	-2,039,965.5	-27,479,376.00	-29,519,341.50
Total	-1,317,037.72	-62,831,029.42	-64,148,067.14

21. Currency futures contracts can be used to manage foreign exchange risk. If an investor is to receive a cash flow denominated in a foreign currency on some future date, the investor can lock in the current exchange rate by entering into an offsetting currency futures position that expires on the date of the cash flow.

22. For example, a US-based investor is to receive €1,000,000 on December 1 (in the future). The current exchange rate implied by the futures is \$1.2/€. The investor can lock in this exchange rate by selling €1,000,000 worth of futures contracts expiring on December 1. This way, the investor is guaranteed an exchange rate of \$1.2/€ regardless of exchange rate fluctuations in the meantime.

23. Similarly, for fixed income securities denominated in a foreign currency maturing in the near future, IMD could lock in the exchange rate using futures contracts if in their view the market was moving against them, when converting the foreign currency to the base currency, the US dollar.

24. Furthermore, “it should be noted that the use of futures was discussed in the 195th Investments Committee meeting and procedures as requested during the meeting were proposed in the 196th Investments Committee meeting. The members of the Committee were of the opinion that such tools are basic and commonly used by pension funds to reduce the risk of adverse market moves. These tools will be implemented in accordance with best practices.”

25. Also, as noted in Table 2, IMD transacted 767 foreign exchange transactions during 2009. Of the 767 foreign exchange transactions, 416 (54%) transactions resulted in losses ranging from \$0.27 to \$1,799,146 of which 104

(13%) transactions resulted in losses exceeding \$50,000 (for a total of \$ 22.5 million).

Table 2 - Currency Gain/Loss 2009 (\$)

No.	Currency	No. of Transactions	Largest Single Loss	Largest Single Gain	Net Gain/(Loss)
1	AUD	52	1,489,997	277,499	-1,629,883
2	BRL	94	93,561	43,126	-304,487
3	CAD	43	53,343	1,223,065	1,326,250
4	CHF	63	361,197	306,676	-1,327,654
5	CZK	7	11,671	12,129	-2,276
6	DKK	14	165,347	4,107	-382,473
7	EGP	3	299	-	-420
8	EUR	60	1,322,503	528,751	-980,263
9	GBP	60	207,501	363,594	475,217
10	HKD	72	2,133	5,479	-5,960
11	HUF	3	27,563	827	-26,321
12	ILS	2	91	16,691	16,691
13	INR	37	24,495	50,851	44,983
14	JPY	74	717,315	7,319,472	7,742,345
15	KRW	36	143,103	10,328	-202,316
16	MXN	25	55,761	128,425	161,577
17	MYR	18	220,380	4,986	-370,007
18	NOK	5	1,799,146	202,533	-1,085,322
19	NZD	3	4,949	28,519	34,875
20	PLN	13	490,858	1,072,338	273,642
21	SEK	23	225,581	424,291	57,829
22	SGD	32	129,990	403,662	481,239
23	TRY	7	60,807	106	-82,402
24	ZAR	21	477,517	19,991	-489,959
Total		767	-8,085,108	12,447,444	-3,724,905

Recommendation 3

(3) Given the number of foreign exchange transactions (both in terms of number and value), IMD should revisit a foreign exchange risk mitigation programme with the Pension Board to implement a strategy to manage currency risk under the direction of a foreign exchange trader. Policies and procedures should be included in the Investment Manual as to the purpose of the currency risk management strategy along with defined risk metrics used in managing the strategies. Once implemented, IMD should provide foreign exchange cash management services to the Secretariat.

26. *IMD accepted recommendation 3 stating that in the past the Investments Committee has been advised of such a consideration and the topic has been discussed in a series of Investments Committee meetings. The RSG will ensure that foreign exchange hedging will be discussed with the Investments Committee again. The outcome of such discussions cannot be predicted but will inform the*

IMD in its subsequent actions, if any. Recommendation 3 remains open pending IMD's implementation of a foreign exchange risk mitigation programme, with policies and procedures included in the Investment Manual.

Centralized Trading Desk

27. Trade execution is performed by the portfolio investment officers, with the exception of currency transactions which are executed by the fixed income group. OIOS noted that there is no segregation of duties between the risk originator (i.e., the investment officers) and those actually executing the trade. IMD's internal controls, notably segregation of duties, would benefit from having a centralized trading desk with dedicated trader(s) executing fixed income, equity and foreign exchange transactions at the direction of the investment officers. Additionally, while dedicated traders do not necessarily create alpha or the return in excess of the compensation of risk, they help preserve alpha through efficiency or optimization of trading performance.

Recommendation 4

(4) IMD should, with specified exclusions where the fixed income investment officer may need to execute trades himself/herself, set up a centralized trading desk that would work closely with the investment officers using electronic algorithmic and programme trading systems. The trading desk should also perform and review the analysis of internal transactions from pre-trade; for instance where to direct trades and when, whether to trade manually or use an algorithm and post-trade perspective using transaction cost analysis tools.

28. *IMD accepted recommendation 4 stating that a centralized trading desk for equities and fixed income securities is already being considered particularly with regard to equities as the potential related savings would arise mostly in this area. While there are many fixed income securities that can be executed by such a trading desk, for some fixed income transactions the fixed income investment officer may be best situated to execute his or her own trades as the fixed income market is not an agency market. It may be that for some fixed income transactions there will be a hybrid model with a centralized trading desk.*

29. *Pre-and post-trade transaction cost analysis service is being considered now by IMD and should be available by the end of 2010. This could form the economic case for proposing a trading desk to be established in the next budget cycle.*

30. *Contingent upon the UNJSPF Board and the approval of the various budgetary authorities, a centralized trading desk could be in place by 2012-2013. Recommendation 4 remains open pending the approval and set up of the centralized trading desk.*

Portfolio Performance Calculation

31. OIOS noted that portfolio performance is currently reported gross of fees, however in order to better reflect actual returns generated by the asset classes (and the various portfolios) IMD should allocate all associated trading and management costs to the respective portfolios to determine the net returns generated by the portfolio. Reporting both gross and net of fees allows the reader to analyze the impact of fees on portfolio performance, which is essential.

Recommendation 5

(5) IMD should report returns generated by the fixed income portfolios as gross of fees and net of fees to allow stakeholders and management to analyze the impact of operational and advisory costs on portfolio performance.

32. *IMD accepted recommendation 5 stating that gross of fee return is already reported. Net of fees returns will be approximated by allocating the IMD operating budget to the Fund's assets. Furthermore, as part of the Risk Manual compliance control, IMD makes every reasonable effort to ensure that performance attribution reports are consistent with the GIPS standards. Recommendation 5 remains open pending the implementation of net of fee reporting.*

Concentration Limits

33. The fixed income portfolio has eight investment guidelines that should be followed when investing in securities. However these guidelines do not include industry limits. OIOS noted that approximately 13 per cent of the long dated fixed income portfolio (approximately \$1.5 billion) is invested in corporate debt. However there is no limit to the dollar value that could be invested in a particular industry such as financials, automotive, energy, etc., within the corporate sector. In the event of a downturn in a particular industry the performance of the portfolio could be adversely affected.

Recommendation 6

(6) IMD should implement industry limits within the corporate sector as part of the risk management policy to protect the fixed income portfolio against a downturn in a particular industry.

34. *IMD accepted recommendation 6 stating that industry/sector concentrations are implicitly enforced due to tracking error monitoring to the benchmark which will effectively take place with the implementation of Risk Metrics. Recommendation 6 remains open pending implementation of Risk Metrics on industry concentration limits.*

Exception Reporting

35. Exceptions are sought from the Representative of the Secretary General (RSG) in instances where a pre-defined guideline is breached and the fixed income group decides to hold on to the security. OIOS noted that the exception memo states the current market value of the security for which an exception is being sought and not the book value. In addition to the current market value, IMD should state the original book value in the exception report to provide greater transparency.

36. Listed below are a few securities from the exception memo dated 27 July 2009.

Security Name	Mkt. Value stated on Exception Report (US\$)	Base-Original Cost (US\$)
Lehman Brothers Holdings	6,000,000.00	34,853,350.00
Fannie Mae and Freddie Mac	9,000,000.00	49,491,250.00 & 100,490,000.00

37. OIOS further noted that in instances where the fixed income group decides to sell a position whose market value is considerably below its book value, an exception is not required nor reported to the RSG.

38. Listed below are some realized losses from 2009.

Security Name	Cost Base(US\$)	Realized Loss(US\$)
POLAND (REP OF) 5.75% BDS 23/09/22	100,123,136.79	-29,519,341.50
MEXICO (UTD MEX ST) 9% BDS 20/12/2012	97,129,082.53	-25,196,279.60
MALAYSIA 3.869% BDS 13/04/10 MYR	160,984,937.13	-18,046,364.17
ROYAL BK SCOTLAND GROUP PLC PFD CAP	10,000,000.00	-8,900,000.00
CMO BANC AMER COML MTG TR 2007-2	39,921,875.00	-12,934,375.00

39. Lastly, the fixed income group should monitor and report bond holdings with realized and unrealized losses exceeding pre-determined thresholds determined using industry best practices and benchmarks.

Recommendation 7

(7) IMD should reflect the original book value of the security for which an exception is being sought in the exception report to provide greater transparency. Additionally, IMD should monitor and report to the RSG securities exceeding pre-determined realized and unrealized loss thresholds determined using industry best practices and benchmarks.

40. *IMD accepted recommendation 7 stating that it is in the process of acquiring a new Portfolio Accounting/Securities and Cash Reconciliation System (RFP 1281) which is consistent with trade day accounting which is also the GIPS standard. When the new accounting system is fully implemented, this recommendation will be fulfilled.* Recommendation 7 remains open pending the implementation of reporting evidencing realized and unrealized losses exceeding pre-determined thresholds.

Benchmark Selection

41. As indicated in the memo dated 28 September 2009, from the Director of IMD, to the RSG on Multicurrency Fixed Income Benchmark, the following shortcomings of the fixed income benchmark Barclays Capital Global Aggregate Index (BGI) were identified, in relation to the long-dated fixed income portfolio:

- It includes instruments which fall below the minimum credit standards of the Fund, which are therefore not investable;
- It excludes inflation-indexed bonds such as TIPS and Indexed Gilts, which are a satisfactory and desirable investment for a Pension Fund which adjusts benefits from time to time on the basis of inflation rates;
- It overweights the bonds of issuers which have a disproportionate share of global debt;
- It underweights the bonds of countries which have issued a disproportionate share of global debt;
- It has a currency mix which does not correspond to the liabilities of the Fund for benefit payments;
- BGI has duration of 5.3 to 5.5 years, compared with the longevity of around thirty years for a staff member upon retirement.
- The benchmark study should analyze liabilities by duration ranges (Short:0-1, Intermediate:1-1, Long 11-20, and Very Long:20+) for various currencies. This data should be used to create the custom index.

42. In addition to the above observations, it is worth noting that the decision to select a benchmark is important as the portfolio risk and return is influenced by the benchmark. The choice of the benchmark indicates not only the kind of securities that should be included in the portfolio, but also the type of securities that should not be in the portfolio. Some benchmarks are better suited to specific investment goals than others. For instance, for a portfolio manager whose primary goal is capital preservation, an important consideration might be the credit quality of the benchmark. If however, the portfolio is intended to offset liabilities that change with interest rates, the most important criterion might be the benchmark's interest rate sensitivity (duration).

43. The use of a specific benchmark would dictate the skill set required in managing the portfolio and hence drive the hiring needs of the fixed income portfolios.

Recommendation 8

(8) IMD should establish an appropriate benchmark against which to track the performance of the fixed income fund. If a custom benchmark or combination of multiple benchmarks are used, IMD should describe the benchmark creation and re-balancing process.

44. *IMD accepted recommendation 8 stating that a customized benchmark(s) is being developed and has been under consideration following discussions in the Investment Committee on the best method of customizing. Recommendation 8 remains open pending the implementation of an appropriate benchmark.*

Key Person Risk

45. The fixed income portfolios with a market value of approximately \$11.3 billion are managed by a senior investment officer who is assisted by an equities investment officer and an investment assistant. The group has a position open at the P-3 level since September 2009. Additionally, two new positions were approved at the P-4 and GS-6 level for the fixed income group in the budget for the biennium 2010-11. These positions should be staffed at the earliest to minimize key person risk.

Recommendation 9

(9) IMD should staff open positions so as to minimize key person risk.

46. *IMD accepted recommendation 9 stating that it well recognizes this observation and has been working closely with UN Human Resources to fill the appropriate positions. Appropriate candidate(s) have been identified and IMD is now dependent on the turnaround by Human Resources. Recommendation 9 remains open pending the staffing of the open positions.*

Peer Comparison

47. The UNJSPF compares its performance to pension plans and asset managers on a quarterly basis. These comparisons are commonly referred to as 'universe' comparisons. Currently, the UNJSPF uses Northern Trust (NT) and Wilshire TUCS (Trust Universe Comparison Service) for the comparisons.

48. The assessment/evaluation concept for peer comparison is broken down into the NT Universe and the TUCS Universe. The universe compositions are as follows:

NT Universe

- All funds (ERISA, Public, Foundation & Endowments, and Wealth) greater than total plan market value of US\$1 billion at the end of the quarter.
- ERISA and public funds greater than US\$1 Billion.
- Public funds greater than US\$1 billion at the end of the quarter.
- Total equity assets program. This universe contains the UNJSPF total equity group.
- Total fixed assets program. This universe contains the UNJSPF total long bond plus short term fixed income portfolios.

Wilshire TUCS

- All Funds (ERISA, Public, Foundation & Endowments, and Wealth) greater than total plan market value of US\$1 Billion at the end of the quarter.
- All public funds with no total plan market value minimum at the end of the quarter.
- Total equity assets program. This universe contains the UNJSPF total equity group.
- Public funds greater than US\$1 billion at the end of the quarter.
- Total fixed assets program. This universe contains the UNJSPF total long bond plus short term fixed income portfolios

49. OIOS noted that the comparisons: total returns of all master trusts, equity returns of all master trusts, fixed income returns of all master trusts, total return of all master trusts, and total return of all public funds, contain the overall returns of all trusts in a category and in some instances include the UNJSPF equity and fixed income returns. These overall returns are compared against benchmarks.

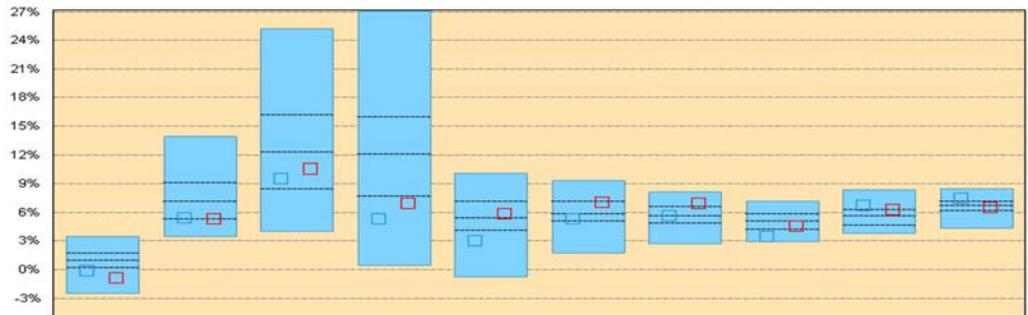
50. In reviewing the below chart obtained from the December 2009 Wilshire TUCS performance analysis used to evaluate the fixed income portfolio performance relative to its peers. The IMD fixed income portfolio performance is represented amongst the aggregate performance of each plan as a single observation. A more meaningful exercise would be the comparison of the fixed income portfolio relative to funds engaging in a similar investment strategy.

51. The comparison does not provide an adequate peer comparison and serves only to camouflage the performance of the fixed income portfolio relative to funds in the master trust that may or may not have a similar investment strategy.

52. It is important to know how an investment manager performed relative to the benchmark, and more important to know how an investment manager compared against his/her peers. While an investment manager may have outperformed relative to a benchmark, an important exercise would then be to see how he/she performed relative to investment managers engaging in a similar investment strategy.

United Nations Performance Comparison

Total Fixed Income Return of Master Trusts - All Plans Cumulative Periods Ending:
December 31, 2009



Percentile Rankings	1 Qtr	2 Qtr	3 Qtr	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5 th	3.46	13.92	25.18	27.06	10.09	9.37	8.16	7.19	8.36	8.48
25 th	1.78	9.14	16.16	15.96	7.18	7.17	6.58	5.82	6.31	7.21
50 th	0.94	7.15	12.29	12.09	5.38	5.09	4.91	4.20	4.71	6.16
75 th	0.21	5.33	8.52	7.76	4.17	5.09	4.91	4.2	4.71	6.16
95 th	-2.50	3.50	3.98	0.40	-0.76	1.77	2.68	2.95	3.78	4.37
No. of obs	257	239	229	226	188	171	152	137	123	94
□ Total Plan	-	5.48(73)	9.58(69)	5.35(86)	3.09(85)	5.33(71)	5.64(54)	3.51(90)	6.75(18)	7.45(16)
□ Barclays Global Aggregate	-	5.34(74)	10.53(62)	6.94(78)	5.86(39)	7.05(28)	6.95(16)	4.56(70)	6.33(23)	6.49(57)

Source: United Nations – Master Trust Performance Analysis, Dec 31, 2009

Recommendation 10

(10) IMD should enhance the current peer comparison report to adequately compare the performance of the fixed income portfolios relative to its peers.

53. *IMD accepted recommendation 10 stating that it already conducts such peer comparisons. Such information is readily available from Northern Trust, and TUCS. IMD will investigate improving the universe selection. Recommendation 11 remains open pending the selection of a meaningful universe against which to compare the fixed income portfolio(s) performance.*

B. Risk Management

Fixed Income Risk Management System

54. The risk management team relies on Northern Trust (NT), the custodian, for data used in compiling fixed income attribution reports including: bond portfolio returns by currency vs. the benchmark, sector attribution, currency attribution vs. the benchmark, fixed income characteristics (average coupon, yield to maturity, effective duration, average years to maturity and Moody's average credit rating) by country currency vs. the benchmarks average, etc.

55. As the above reporting is as of a particular point in time, risk management should implement tools that enable them to generate attribution reports real time. The fixed income group should also be provided with risk analytic tools where they could model ‘what if’ scenarios.

56. OIOS noted that IMD was in the process of implementing Risk Metrics, a risk management system that would have the ability to generate attribution reports. The system would also provide functionality to model, ‘what if’ scenarios, and provide the fixed income group with risk measures including but not limited to value at risk (VaR), volatility and tracking error. Once implemented, the system would also provide key risk indicators such as widening CDS and bid/ask spreads and trading volume information.

57. The planned implementation date for Risk Metrics is end of 2010. OIOS will continue to monitor the implementation of the system.

Risk Budgeting

58. The risk manual states; “risk budgeting is crucial to the investment process and will be detailed in the investment policy when the proper financial tools are available for implementation. The objective of risk budgeting is to create a systematic plan for the expenditure of risk and allocating what is the total risk that we are willing to incur to generate returns (risk tolerance), and measuring the risk allocated to each investment decision.”

59. Budgeting risk rather than money across asset classes, countries, sectors and securities can improve the investment process by enforcing discipline, eliminating unintended or disproportionate bets, and balancing the risk and return of each investment decision. Therefore, risk budgeting should be applied to the Fund, detailing the total acceptable risk in pursuit of returns by decomposing the aggregate risk of the investment universe or the Fund into its constituents on a quantitative basis.

60. OIOS noted that risk budgeting would be introduced with the implementation of Risk Metrics at the end of 2010. OIOS will continue to monitor the introduction of risk budgeting in the investment decision making process.

Investment Research Due Diligence

61. The risk manual states the following in regards to investment research due diligence, “Highlight any trades which do not seem to have quality due diligence performed”. As stated in the risk manual the term ‘any trades which do not seem to have quality due diligence’ is open to interpretation.

Recommendation 11

(11) IMD should document well articulated investment rationales in support of their investment decisions.

62. *IMD accepted recommendation 11 stating, procedure and documentation for the trading rationale are already in place and well established. IMD will work to improve the quality of the Fixed Income text. Recommendation 12 remains open pending update in the Risk Manual on Fixed Income security selection rationale.*

Monitoring Commissions

63. Monitoring commissions helps in identifying the allocation of trades across the spectrum of approved brokers to evidence trades are not routed to a select few brokers.

64. The risk manual states that, ‘a review of the total commission dollars per asset class and region is performed monthly.’ The risk manual further states that, “a detailed review of the total broker dollars allocated and percentage of total commissions is performed on a quarterly basis. Broker commissions are aggregated across asset classes to assess the top allocations to brokers in percentage and dollar terms.”

65. As fixed income securities are purchased/sold based on the price and a ‘mark up’, a commissions report was not available. Risk management could monitor ‘inferred commissions’ or employ any other method adhering to industry best practices for bond transactions and update the risk manual to reflect the revised procedure.

Recommendation 12

(12) IMD should ensure that risk management reviews fixed income commissions by broker based on ‘inferred commissions’, or any other method adhering to industry best practice and updates the risk manual to reflect the changes.

66. *IMD accepted recommendation 12 stating that as part of the pending Transaction Cost Analysis service IMD will undertake such a study. Compliance does review all Fixed Income trade activity on a daily basis and takes into account the level of broker activity while recognizing that there are no explicit brokerage commissions as commissions are embedded into the bid-ask spread. Recommendation 12 remains open pending update of the Risk Manual to reflect the changes on Fixed Income broker commission methodology.*

C. Compliance

Guideline Monitoring

67. Within Compliance Analyst (CA), a Northern Trust (NT) product, there are 49 guidelines for Equity and Fixed Income. These guidelines are hard coded into the system (long term debt has 5 guidelines, whereas short term debt has 3 guidelines).The system runs the trades against these guidelines on a daily basis and generates alerts via email to the senior compliance assistant. This allows compliance to monitor new/recurring breaches with aging.

68. Based on these alerts, compliance accesses NT Passport to review the emails and categorize alerts as being on “watch, investigation, valid breach and ignore” and prepare reports on the results. Information regarding these trades is obtained from the investment officers and the trades categorized accordingly. Explanations are provided by the investment officers, which are maintained within the system.

69. The senior compliance assistant is the sole person within compliance with the ability to make changes to the 49 investment guidelines; other members of the team including the chief compliance officer have read only access.

70. If a change to the guidelines was made, the chief compliance officer is not notified (for instance via a system generated email). Additionally, in the event that the senior compliance assistant is on leave or not available, members of the compliance team have the ability to copy/paste the hard coded guidelines into Compliance Analyst and run the exception report. However, the report is generated as of that day, and would not reflect the historical aging. Therefore a breach that may have existed for 39 days would show up as a breach from that day onwards. Furthermore the current compliance monitoring is limited to post trade compliance.

Recommendation 13

(13) IMD should ensure that members of the compliance team are provided access to functionality that enables them to view aging of a breach in the event the senior compliance assistant is not available. Changes to the hard coded investment guidelines should be made under four eye controls; additionally the chief compliance officer should be notified when a change is made to the investment guidelines. Additionally, IMD should implement pre-trade compliance as part of the compliance process.

71. *IMD stated that the process is already in place. The age of a breach is readily available to all members of the Compliance Sections via the Northern Trust Compliance Analyst. A pre-trade compliance module is already in place as part of the Charles River Order Management System.*

72. *Any changes made to the investment guidelines must first be accepted by the RSG. A written (email) history of these changes is maintained. In the Northern Trust Compliance Analyst there is a report and time stamp of changes made to the investment guidelines. All of which is thought to be adequate in response to the recommendation. Given management’s actions to date in providing all members of the compliance team access to the aging of a breach, OIOS will close recommendation 13.*

Investment Guideline Breach Monitoring

73. OIOS identified two positions; Federal National Mortgage Association and Federal Home Loan Mortgage Corporation, both currently in distress status that, although downgraded, were not identified timely by the compliance system.

74. The Federal National Mortgage Association fixed income security was downgraded in mid 2008 but not flagged by Compliance Analyst. The credit quality guidelines in Compliance Analyst are set up to only identify securities classified as fixed income. As this preferred security is not classified as fixed income, it was not identified as a breach.

75. The Federal Home Loan Mortgage Corporation fixed income security was downgraded in early 2008, but not identified by Compliance Analyst until second quarter 2009, due to a system error at Northern Trust. In early 2009 Northern Trust identified the error where the data feed that provided Compliance Analyst with downgraded securities was not loading correctly to their system. This problem was rectified by Northern Trust mid April 2009, and subsequently the position was picked up by Compliance Analyst on June 30 2009.

76. Furthermore, OIOS noted that while the above mentioned preferred security was held in the fixed income portfolio, there was confusion whether the position should be held in an equity portfolio due to the equity characteristics of the security, or within the fixed income portfolio.

Recommendation 14

(14) IMD should determine whether preferred shares are to be classified as fixed income or equity securities and hold the security in the respective portfolio and adjust compliance monitoring accordingly.

77. *IMD accepted recommendation 14 stating that the question of asset class is important. Preferred stock is equity but it is non-voting. Most often preferred shares have a fixed dividend payout which makes it a "fixed income security." An investor who is seeking fixed periodic income will invest in preferred stocks and/or bonds since they are both fixed income securities. The IMD has elected to classify preferred shares as a fixed income asset. OIOS closes recommendation 14, given Management's classification of preferred securities as fixed income instruments.*

D. Operations

Cash Activity Report

78. On a daily basis the operations team receive the Cash Activity report from Northern Trust (NT) and reconciles it to the internal Cash Activity report produced by the Omega trade order management system.

79. The purpose of the reconciliation is to review the cash balances between the two reports and identify any discrepancies. If there are discrepancies, the operations team investigates, via Bloomberg, the possible reasons (i.e., coupon/dividend posting that are not reflected in Omega) and contacts NT for clarification.

80. This reconciliation is performed manually, matching the individual securities between the two reports. Once the reconciliation is performed the operations team generate the morning cash activity report. This report is sent to the fixed income group who transact foreign currency transactions based on the report.

81. The NT file is uploaded to Omega after making any necessary reconciling adjustments. In instances where a trade is received early in the morning, the operation team obtains a confirmation from the broker and processes it as soon as possible, so that the trade can be included in the report.

82. Any differences between NT and the Cash Activity report are amended in Omega. The information in Omega can be changed on the same day as the trade; however subsequent changes to the trade can be made in Abacus (accounting system).

83. OIOS noted that since the reconciliation is performed manually, a discrepancy maybe overlooked. Also, since the individual performing the reconciliation is the same person making amendments to Omega and Abacus an error made by the individual may be carried forward and not detected timely.

Recommendation 15

(15) IMD should automate the reconciliation between the Cash Activity Report and Northern Trust. The individual responsible for reconciliation (either manual or automated) should be separate from the individual making amendments to the systems - Omega and Abacus.

84. *IMD accepted recommendation 15 stating that the IMD has identified a new portfolio accounting/securities and cash reconciliation system (RFP 1281) and contract negotiations have begun. Automated reconciliation as described will take place with the implementation of the new system. Recommendation 15 remains open pending the implementation of the new accounting system.*

E. Information Technology

85. OIOS identified the following applications used by the fixed income group: Wilshire Omega, Abacus, FX All, Bloomberg and NT Passport. The group also uses Lotus Notes, Microsoft Word, fax and spreadsheets as part of their daily functions.

86. OIOS was unable to provide assurance on the information technology internal control environment supporting the fixed income group within the

planned scope of this audit. IMD ISS leadership and team members were heavily involved in new application implementations and travel in connection with potential new service providers and thus were not available during the audit contact period.

87. While OIOS was unable to perform walkthroughs and control validations, the areas of moderate risk were identified within the fixed income information technology environment as follows:

- Lack of automation and resultant manual input
- Legacy systems that may no longer fully support the business
- Integrity of automated interfaces between systems
- Reliance on third party data sources
- Roles and responsibilities of personnel using Omega for trade capture

88. OIOS encourages IMD management to independently examine the control environment in the above noted information technology processes and strengthen controls as warranted. OIOS will review the fixed income information technology internal control environment during the next audit.

V. ACKNOWLEDGEMENT

89. We wish to express our appreciation to the Management and staff of IMD for the assistance and cooperation extended to the auditors during this assignment.

STATUS OF AUDIT RECOMMENDATIONS

Recom. no.	Recommendation	Risk category	Risk rating	C/O¹	Actions needed to close recommendation	Implementation date²
1.	IMD should revise the methodology for calculating the realized currency gain/loss. The revised methodology should be documented in the policy manual.	Operational	M	O	Implementation of the accounting software and the revision of the currency gain/loss calculation. The revised methodology should be documented in the Policy Manual	1 July 2011
2.	IMD should implement currency forecasting that enables the fixed income investment officer to have a longer duration than the current five day window within which to execute foreign currency transactions.	Operational	H	O	Implementation of the revised currency forecasting window.	1 July 2011
3.	Given the number of foreign exchange transactions (both in terms of number and value), IMD should revisit a Foreign Exchange risk mitigation program with the Pension Board with an objective to implement a strategy to manage currency risk under the direction of a foreign exchange trader. Policies and procedures should be included in the Investment Manual as to the purpose of the currency risk management strategy along with defined risk metrics used in managing the strategies. Once implemented, IMD should provide foreign exchange cash management services to the Secretariat.	Operational	H	O	Implementation of a foreign exchange risk mitigation program.	1 October 2010
4.	IMD should, with specified exclusions where the fixed income investment officer may need to execute trades himself/herself, set up a centralized trading desk that would work closely with the investment officers	Operational	M	O	Implementation of a centralized trading desk.	None provided

Recom. no.	Recommendation	Risk category	Risk rating	C/O ¹	Actions needed to close recommendation	Implementation date ²
	using electronic algorithmic and program trading systems. The trading desk should also perform and review the analysis of internal transactions from pre-trade; for instance where to direct trades and when, whether to trade manually or use an algorithm and post-trade perspective using transaction cost analysis tools.					
5.	IMD should report returns generated by the fixed income portfolios as gross of fees and net of fees to allow stakeholders and management to analyze the impact of operational and advisory costs on portfolio performance.	Operational	M	O	Implementation of net of fee reporting.	1 March 2011
6.	IMD should implement industry limits within the corporate sector as part of the risk management policy to protect the fixed income portfolio against a downturn in a particular industry.	Operational	H	O	Implementation of industry concentration limits.	1 March 2011
7.	IMD should reflect the original book value of the security for which an exception is being sought in the exception report to provide greater transparency. Additionally, IMD should monitor and report to the RSG securities exceeding pre-determined realized and unrealized loss thresholds determined using industry best practices and benchmarks.	Operational	M	O	Implementation of reporting evidencing realized and unrealized losses exceeding pre-determined thresholds.	1 September 2011
8.	IMD should establish an appropriate benchmark against which to track the performance of the fixed income fund. If a custom benchmark or combinations of multiple benchmarks are used, IMD should describe the benchmark creation and re-balancing process.	Operational	M	O	Implementation of an appropriate benchmark.	1 March 2011
9.	IMD should staff open positions so as to minimize key person risk.	Human Resources	H	O	Staffing of the open positions.	1 March 2011

Recom. no.	Recommendation	Risk category	Risk rating	C/O ¹	Actions needed to close recommendation	Implementation date ²
10.	IMD should enhance the current peer comparison report to adequately compare the performance of the fixed income portfolios relative to its peers.	Operational	M	O	Pending the selection of a meaningful universe against which to compare the fixed income portfolio(s) performance.	1 July 2011
11.	IMD should document well articulated investment rationales in support of their investment decisions.	Operational	M	O	Update in the Risk Manual on Fixed Income security selection rationale.	Immediate
12.	IMD should ensure that risk management reviews fixed income commissions by broker based on ‘inferred commissions’, or any other method adhering to industry best practice and updates the risk manual to reflect the changes.	Operational	M	O	Update the risk manual to reflect the changes on fixed income broker commission methodology.	1 July 2011
13.	IMD should ensure that members of the compliance team are provided access to functionality that enables them to view aging of a breach in the event the senior compliance assistant is not available. Changes to the hard coded investment guidelines should be made under four eye controls; additionally the chief compliance officer should be notified when a change is made to the investment guidelines. Additionally, IMD should implement pre-trade compliance as part of the compliance process.	Operational	M	C	Given management’s actions to date in providing all members of the compliance team access to the aging of a breach, OIOS will close recommendation 13.	Implemented
14.	IMD should determine whether preferred shares are to be classified as fixed income or equity securities and hold the security in the respective portfolio and adjust compliance monitoring accordingly.	Operational	M	C	OIOS closes recommendation 14, given managements classification of preferred securities, as fixed income instruments.	Implemented
15.	IMD should automate the reconciliation between the Cash Activity Report and Northern Trust. The individual responsible for reconciliation (either manual or automated) should be separate from the	Operational	M	O	Implementation of the automated reconciliation between the Cash Activity and Northern Trust.	1 September 2011

Recom. no.	Recommendation	Risk category	Risk rating	C/O¹	Actions needed to close recommendation	Implementation date²
	individual making amendments to the systems - Omega and Abacus.					

1. C = closed, O = open
2. Date provided by IMD in response to recommendations.

