

REPORT TO: PENSION SUB-COMMITTEE OF THE CITY GOVERNANCE COMMITTEE & PENSION BOARD – 18 MARCH 2024

REPORT ON: TAYSIDE PENSION FUND INTERNAL AUDIT REPORTS –PENSIONS ADMINISTRATION & LIQUIDITY

REPORT BY: EXECUTIVE DIRECTOR OF CORPORATE SERVICES

REPORT NO: 76-2024

1 PURPOSE OF REPORT

To submit to the Audit Reports prepared by the Fund's Internal Auditor, PricewaterhouseCoopers (PwC).

2 RECOMMENDATIONS

Members are asked to note the content of the report on the audit exercises undertaken, and to approve the management response.

3 FINANCIAL IMPLICATIONS

None.

4 MAIN TEXT

4.1 Internal Audit Report – Pensions Administration (Appendix A)

The report details the review undertaken that focused on the specific areas of pensions administration, including follow up of issues identified in the previous audit of pensions administration in 2020. PwC have provided an overall rating of satisfactory with exceptions, and medium risk. Further details are included in Appendix A of this report.

4.2 Internal Audit Report – Liquidity (Appendix B)

The report details the review of the design and operating effectiveness of key controls in place relating to the Fund's long and short term cash flow requirements. PwC have provided an overall rating of satisfactory, and low risk. Further details are included in Appendix B of this report.

4.3 The findings and recommendations of the audits have been discussed with management and responses are contained within the reports. The implementation of the agreed management actions will be monitored, with progress being reported to the Sub-Committee in due course.

5 POLICY IMPLICATIONS

This report has been subject to the Pre-IIA Screening Tool and does not make any recommendations for change to strategy, policy, procedures, services or funding and so has not been subject to an Integrated Impact Assessment. An appropriate senior manager has reviewed and agreed with this assessment.

6 CONSULTATIONS

The Chief Executive and Head of Democratic and Legal Services has been consulted on the content of this report and agree with the contents.

7 BACKGROUND PAPERS

None

**ROBERT EMMOTT
EXECUTIVE DIRECTOR OF CORPORATE SERVICES**

08 MARCH 2024

This page is intentionally left blank

Internal audit report 2023/24

Pensions Administration

Tayside Pension Fund (“TPF”)
Final

March 2024



This page is intentionally left blank

Contents

1. Executive Summary	1
2. Current year findings	3
Appendices	11
Appendix A: Basis of our classifications	12
Appendix B: Terms of reference	15
Appendix C: Limitations and responsibilities	17

This is a draft prepared for discussion purposes only and should not be relied upon; the contents are subject to amendment or withdrawal and our final conclusions and findings will be set out in our final deliverable.

Distribution list

For action:
Lynne Mackenzie (Pensions Administration Manager (Corporate Services) and Tracey Russell (Service Manager - Financial Services)



This page is intentionally left blank

Executive summary

Report classification



Satisfactory with exceptions (8 points)

Total number of findings

	Critical	High	Medium	Low	Advisory
Control design	-	-	2	2	1
Operating effectiveness	-	-	-	-	-
Total	-	-	2	2	1

Background and scope

Tayside Pension Fund has been administered by Dundee City Council since 1st April 1996. It is part of the Local Pension Government Scheme (LGPS), which is a statutory scheme established under the primary legislations of the Superannuation act 1972 and Public Service Pensions Act 2013.

Tayside's participating employers include local authorities, as well as their subsidiary companies and contractors; a number of universities and colleges, and a range of organisations with funding or service links to local government. The last pensions administration Internal Audit review was performed in 2020 and was rated "Satisfactory with exceptions". This review included design and operating effectiveness assessment of controls surrounding the payment of pensions. Our 2024 review has focused on the following areas of pensions administration, including follow up of issues previously identified in relation to these:

- Refund of contributions;
- Deaths; and
- Payment of retirement benefits.

Summary of findings

The overall rating of this report is 'Satisfactory with Exceptions' driven by two Medium-rated, two Low-rated findings and one advisory finding. These are summarised in the table on the following page. Full details, alongside agreed actions from management are within the following sections of the report.

The following areas of good practice were identified:

- TPF has adequate controls in place to ensure the accuracy of contribution refund calculations, including the calculations of applicable deductions.
- Effective controls are in place to ensure prompt notification, identification and recording of member deaths.
- TPF have appropriate approval matrices in place to ensure segregation of duties in the processing and approval of administration tasks.

Executive summary (cont.)

The points below outline where we have observed areas of improvement across the scope objectives of this review:

Sub-process	Scope Objectives	Summary of findings
Payment of Retirement Benefits	<ul style="list-style-type: none"> TPF has controls in place to ensure that retirement benefit calculations are reviewed by an appropriate officer who has the required training and experience to perform their role. Quality assurance programme is in place to ensure that calculation processes and controls are reviewed and monitored, as well as the timeliness of the processing of retirement payments. Approval controls are in place to ensure all transactions are authorised by a senior member of staff. 	<p>Finding 1 - No QA process for key administration tasks (Medium): There is no formal QA process in place whereby sample testing of the key administration processes occurs. TPF are reliant on the Team Lead reviewing aged cases / tasks by generating a weekly spreadsheet report of outstanding live cases. There is no sample testing of the population of cases for these administration processes to give assurance over the quality of completeness, accuracy, timeliness and documentation for these processes.</p>
Refund of Contributions	<ul style="list-style-type: none"> TPF has controls in place to ensure the accuracy of contribution refund calculations, including calculation of any applicable deductions. The refund process is clearly documented in adequate policies and procedures. Controls are in place to ensure refunds are approved and authorised by an appropriate officer. Adequate segregation of duties across the refund processes are in place. Controls are in place to process contributions refunds in a timely manner to avoid unnecessary delays to members. 	<p>Finding 2 - Lack of system audit trail for approvals (Medium): Within the Altair system, for each individual case there is a commentary box which is used to record the steps of the process, including review and approval. Anybody within the team has access to edit this commentary box and add their initials to say that it has been approved. Therefore there is an absence of preventative controls to stop an incorrect user from documenting an approval and incorrectly editing the audit trail of the case. Additionally, when the payments for refunds and retirement benefits are approved in the Sundry system, there is no audit trail maintained within the Sundry system that records the approval. We could not evidence audit trail documentation from the system detailing when, and by whom, the payment was approved.</p>
Deaths	<ul style="list-style-type: none"> Effective controls are in place to ensure prompt notification, identification and recording of member deaths. Procedures are in place to verify the accuracy of death information, including obtaining official documents. Deaths are processed in a timely manner to prevent overpayments of benefits. Performance metrics are in place to monitor the quality and timeliness of deaths processing. Training is in place to ensure that administrators processing deaths and senior administrators checking cases are competent to perform their roles. 	<p>Finding 3 - No documented training plan or formalised tracking of training completion (Low): Our review of the training in place found that there are no formalised and documented annual training plans for existing team members to ensure that knowledge is kept up to date. Additionally, although it is noted that the Operations Team Leader maintains a tracker for the training that the team have previously completed, this tracking is reliant on being manually updated, and during our walkthroughs of this process, it was identified that this is not updated on a regular basis to ensure that it is accurate and complete.</p> <p>Finding 4 - Lack of documented version control of procedures (Low): Our review identified that TPF are reliant on using 'training notes' as procedural guidance for these processes. These procedures do not have any documented version control or approval from a relevant senior member documented within them.</p> <p>Finding 5 - Opportunity for automation of manual processes and controls (Advisory): We noted that TPF are dependent on certain manual processes for the processing and managing of the three areas of administration in scope for this review. This manual processing increases the risk of errors, inefficiencies and delays and hinders the potential to streamline the efficiency of the processes. There is opportunity for TPF to consider automating these manual processes and controls.</p>

Current year findings

1

No QA process for key administration tasks

Control Design

Finding rating

Impact	3
Likelihood	iv
Rating	Medium

Finding and root cause

Quality Assurance (QA) processes are typically utilised to ensure accuracy, completeness and compliance of administration tasks through periodic monitoring, and review and testing of documentation.

Our review identified that within TPF there is no formal QA process in place whereby sample testing of the key administration processes occurs. TPF are reliant on the Team Lead reviewing the aged cases / tasks by generating a weekly spreadsheet report of outstanding live cases. This provides an overview of the cases which are long outstanding and are reviewed to ensure appropriate actions are undertaken by the team members, as well as understanding how the query can be resolved.

However, there is no sample testing over the entire population of cases for these administration processes to give assurance over the quality of completeness, accuracy, timeliness and documentation for these processes. Therefore, there is a lack of controls in place to identify any systemic process and control deficiencies or gaps.

Potential implications

The absence of a Quality Assurance process increases the risk that issues are not identified or resolved in a timely manner which may result in inaccuracies when processing administration tasks leading to member detriment and reputational damage.

Additionally, QA processes provide valuable insights into areas of improvement, and without a QA process in place potential opportunities for improved efficiency and accuracy may be missed.

Recommendations

1.1 Implement proportionate QA processes over the key administration process areas which includes sample testing of documentation, evidence, system actions and team review processes.

1.2 Document the QA process, roles and responsibilities within the relevant policies and procedures.

Management action plan

1.1 The QA facility and roles will be included in as part of the larger review of TPF structure, resourcing and role review which was recommended in the previous audit review of Business Resilience.

Responsible person/title:
.....
Tracey Russell (Service Manager,
Financial Services)

1.2 The documentation of the QA process and procedures will follow this review.

.....
Target date: 30 September 2024
.....

Current year findings

2

Lack of system audit trail for approvals

Control Design

Finding rating

Impact	3
Likelihood	iv
Rating	Medium

Finding and root cause

To process pensions administration tasks, TPF use the Altair system to record and manage all cases and the Sundry system to approve and process payments for refunds of contributions and payment of retirement benefits. Cases are created in the Altair system by the Pensions Administration team once identified through notification from a member.

For each individual case within the Altair system there is a commentary box which is used to record the steps of the process, including documenting the processing of the case and subsequent review and approval. Both the maker and checkers write their initials and dates within this commentary box. Although there is a separate audit trail in the Altair system which shows when each stage is complete, anybody within the team has access to edit this commentary box and add their initials to say that it has been approved. Therefore, there is an absence of preventative controls to stop an incorrect user from documenting an approval and incorrectly editing the audit trail of the case. This increases the risk of cases and payments being recorded as approved when approval from the correct individual did not occur.

Additionally, when the payments for refunds and retirement benefits are approved in the Sundry system, the approval is documented in the commentary box (as above) but there is no audit trail maintained within the Sundry system that records the approval. Although a remittance advice is generated by the system once payment is approved, we could not evidence audit trail documentation from the system detailing when, and by whom, the payment was approved.

Potential implications

If systems do not record an audit trail of the approver or if the audit trail can be edited, this increases the likelihood of unauthorised or incorrect changes to the audit trails and approvals. This may lead to a lack of accountability and an increased risk of fraud.

Recommendations

2.1 When the upgraded version of the Sundry system has been implemented at TPF, the system should have new system abilities to maintain an appropriate audit trail of each payment that is approved, including the data and the individual who approved them.

NOTE: TPF plan to implement a new Sundry system in 2024 which will enable new system capabilities to document an audit trail for the approval of each payment.

In respect of Altair, our audit testing did not identify any exceptions regarding review and approval of calculations. We observed that each activity was initialled on the system by: (i) the “doer” (evidencing completion of the task); and (ii) the “checker” (evidencing review of the task). Management has explained that due to system restrictions, this evidence of completion and review is only able to be recorded in the commentary box (which can be overwritten). The system does not provide logging functionality. As such, Management has chosen to risk accept the fact that evidence of completion and review can be overridden. The risk associated with this is in part mitigated by the fact that access to the system is restricted to members of the administration team.

Current year findings

2

Lack of system audit trail for approvals

Control Design

Management action plan

2.1 Sundry payments to members & beneficiaries are done via the Council's financial systems. The introduction of the Civica Sundry System will demonstrate an appropriate audit trail of authorisation & control.

In relation to the limitations of the Altair system, the risk is accepted and mitigated as far as possible.

Responsible person/title:

Tracey Russell (Service Manager, Financial Services)

Target date: 30 September 2024

Finding rating

Impact

3

Likelihood

iv

Rating

Medium

Current year findings

3

No documented training plan or formalised tracking of training completion

Control Design & Operating Effectiveness

Finding rating

Impact	3
Likelihood	iii
Rating	Low

Finding and root cause

Within TPF, all new joiners are required to undergo mandatory training which is automatically assigned to them on the online training system, based on their role and responsibilities. Once they have completed the mandatory training, they are provided with training notes on the processes and they will shadow existing team members until they are confident to handle the process independently.

Our review of training in place found that there are no formalised and documented annual training plans for existing team members to ensure that knowledge is kept up to date. Although there is a defined online training plan for new joiners, there is no evidence of a continuous plan to refresh and manage knowledge within the team.

Additionally, although a training tracker exists and should be manually updated by the Operations Team Leader, we noted that it had not been updated recently and on a regular basis to ensure that it is accurate and complete.

Potential implications

Without having a documented annual training plan which can be monitored against, there is an increased risk that training needs are not identified and there is a greater knowledge gap within the team in relation to these processes. This may lead to inefficiencies or inaccuracies within the administration tasks.

If the training tracker is not updated and reviewed on a regular basis there is an increased risk that team members are not completing the appropriate level of training in a timely manner.

Recommendations

3.1 Document a training plan for all roles involved in the pensions administration processes which sets out the applicable training which needs to be completed and due dates for each. This plan should be reviewed and approved on an annual basis to ensure that training needs are kept up to date. It should also clearly state how frequently the training tracker should be updated and reviewed to identify.

3.2 Update the training tracker so that it is up to date and reflective of all training performed since it was last reviewed.

Management action plan

3.1 Training plan for all staff to be created, maintained and reviewed annually. Responsibility for this will be allocated in conjunction as part of the larger review of the TPF structure, resourcing and role review as previously mentioned.

Responsible person/title:

Tracey Russell (Service Manager, Financial Services)

3.2 Training tracker to be updated with immediate effect and maintained.

Target date: 30 September 2024

Current year findings

4

Lack of documented version control within procedures

Control Design

Finding rating

Impact	2
Likelihood	iv
Rating	Low

Finding and root cause

As part of our audit, we reviewed the documentation of processes and controls in place for the following three pensions administration areas:

- Refund of contributions;
- Deaths; and
- Payment of retirement benefits.

Our review identified that TPF use 'training notes' as procedural guidance for their processes. These training notes provide step by step guidance on how to complete the administration processes within the relevant systems. However, they do not include documentation for version control or sign-off from a relevant senior member. Although we have seen evidence that there is a separate version control tracker for these procedures, which includes latest annual review dates, the tracker does not state who the documents were reviewed and approved by.

Additionally, when reviewing the tracker for procedure version control, it was identified that the approval matrices and Sundry authorisation limits were not included in the tracker and therefore have no documented approval and version control to ensure that these are kept up to date. Therefore, we were unable to evidence when these were last reviewed.

Potential implications

Without formal version control documented in procedures, there is an increased likelihood of errors within this guidance and challenges when tracking changes, and unclear roles and responsibilities for these processes. This can impact the accuracy and completeness of these processes, ultimately resulting in member detriment and financial impacts.

Additionally, there is an increased risk that TPF are reliant on using an outdated training note if there is no clear version control added to the document.

Recommendations

4.1 Document formal procedures for the key administration process areas which includes version control, identifies key roles and responsibilities, and documents who has reviewed the procedure documentation.

Current year findings

4 Lack of documented version control within procedures
Control Design

Management action plan

4.1 Whilst formal procedure documentation is in place, this will now include version control, and the recommendation of annual review of key processes is accepted, and will be resourced and recorded per recommendation.

Responsible person/title:
.....
Tracey Russell (Service Manager,
Financial Services)
.....
Target date: 30 September 2024
.....

Finding rating

Impact	2
Likelihood	iv
Rating	Low

Current year findings

5

Opportunity for automation of manual processes and controls

Control Design

Finding rating

Impact	N/A
Likelihood	N/A
Rating	Advisory

Finding and root cause

TPF are dependent on certain manual processes for the processing and managing of the three areas of administration in scope for this review. This manual processing increases the risk of errors, inefficiencies and delays and hinders the potential to streamline the efficiency of the processes.

The following areas of the processes which are reliant on manual controls are detailed below:

Processing of Payments:

- As part of the payments process for refunds and retirement benefits, there is manual input of the payments data due to be processed. This includes manual input of: the name of the member, the specific ledger code, employer details, bank account details, and number of contributions made by the employer.
- Once the new Sundry system is implemented within TPF, there is an opportunity for data to flow automatically into the Sundry payment system in order to streamline the processing of payments once they have been approved.

Reporting:

- Manual extraction of data and reporting from the Altair system on a weekly basis by the Team Leader, which includes all open cases of deaths, refunds and retirement payments.
- Manual processes for tracking all cases. Currently, the tracking of open cases is documented in a single spreadsheet which is manually updated by the Team Leader for case monitoring.

There is an opportunity for data to be managed and communicated directly via automatic Altair data extracts and reports instead of a manually extracted and maintained spreadsheet. It is noted that TPF is currently implementing an automated real-time dashboard within the Altair system which will replace the manual reporting.

Potential implications

A reliance on manual controls and processes increases the risk of administration errors, inefficiencies and compliance risks. A lack of automation of these processes can hinder the accuracy and timeliness of tasks.

NOTE: In respect of Altair, our sample audit testing did not identify any exceptions regarding review and approval of activities. We observed that each activity was initialled on the system by: (i) the “doer” (evidencing completion of the task); and (ii) the “checker” (evidencing review of the task). As such, this provides comfort that manual activities are being reviewed for completeness and accuracy. We are therefore raising the above as “advisory” to support the future operation of the administration function.

Current year findings

5

Opportunity for automation of manual processes and controls

Control Design

Finding rating

Impact	N/A
Likelihood	N/A
Rating	Advisory

Recommendations

- 5.1 Implement an automated workflow to replace manual input of payment information data into the Sundry system.
- 5.2 Implement system reporting which is automatically extracted from the Altair system on a timely basis and automatically shared with the relevant team members.

Management action plan

- 5.1 In relation to the introduction of the new sundry payment system, any automated functionality between the 2 standalone systems will be utilised, but may be limited.
- 5.2 Insights (Altair Management Dashboard) is currently in testing phase and once fully implemented will meet the recommendation made. This is expected to be fully functional by September 2024.

Responsible person/title:

Tracey Russell (Service Manager, Financial Services)

Target date:

5.1 - 31 March 2025

5.2 - 30 September 2024

Appendices



This page is intentionally left blank

Appendix A: Basis of our classifications

Individual finding ratings

Findings are assessed on their impact and likelihood based on the assessment rationale in the tables below.

Impact rating	Assessment rationale
6	A finding that could have a: <ul style="list-style-type: none">• Critical impact on operational performance; or• Critical monetary or financial statement impact; or• Critical breach in laws and regulations that could result in material fines or consequences; or• Critical impact on the reputation or brand of the organisation which could threaten its future viability.
5	A finding that could have a: <ul style="list-style-type: none">• Significant impact on operational performance; or• Significant monetary or financial statement impact; or• Significant breach in laws and regulations resulting in large fines and consequences; or• Significant impact on the reputation or brand of the organisation.
4	A finding that could have a: <ul style="list-style-type: none">• Major impact on operational performance; or• Major monetary or financial statement impact; or• Major breach in laws and regulations resulting in significant fines and consequences; or• Major impact on the reputation or brand of the organisation.
3	A finding that could have a: <ul style="list-style-type: none">• Moderate impact on the organisation's operational performance; or• Moderate monetary or financial statement impact; or• Moderate breach in laws and regulations with moderate consequences; or• Moderate impact on the reputation of the organisation.

Appendix A: Basis of our classifications

Individual finding ratings

Impact rating	Assessment rationale
2	<p>A finding that could have a:</p> <ul style="list-style-type: none"> • Minor impact on the organisation’s operational performance; or • Minor monetary or financial statement impact; or • Minor breach in laws and regulations with limited consequences; or • Minor impact on the reputation of the organisation.
1	<p>A finding that could have a:</p> <ul style="list-style-type: none"> • Insignificant impact on the organisation’s operational performance; or • Insignificant monetary or financial statement impact; or • Insignificant breach in laws and regulations with little consequence; or • Insignificant impact on the reputation of the organisation.
Advisory	A finding that does not have a risk impact but has been raised to highlight areas of inefficiencies or good practice.

Likelihood

Likelihood rating	Assessment rationale
vi	Has occurred or probable in the near future
v	Possible in the next 12 months
iv	Possible in the next 1-2 years
iii	Possible in the medium term (2-5 years)
ii	Possible in the long term (5-10 years)
i	Unlikely in the foreseeable future

Appendix A: Basis of our classifications





Finding rating

This grid is used to determine the overall finding rating. Issues with a low impact and likelihood rating will not be reported.

Likelihood rating	Impact rating					
	6	5	4	3	2	1
vi	Critical	Critical	High	High	Medium	Medium
v	Critical	High	High	Medium	Medium	Low
iv	High	High	Medium	Medium	Low	Low
iii	High	Medium	Medium	Low	Low	Low
ii	Medium	Medium	Low	Low	Low	Not reportable
i	Medium	Low	Low	Low	Not reportable	Not reportable

Report classifications

The report classification is determined by allocating points to each of the findings included in the report.

Findings rating	Points	Report classification	Points
Critical	40 points per finding	 Satisfactory	6 points or less
High	10 points per finding	 Satisfactory with exceptions	7 – 15 points
Medium	3 points per finding	 Needs improvement	16 – 39 points
Low	1 point per finding	 Unsatisfactory	40 points and over

Appendix B: Terms of reference

Background

Tayside Pension Fund has been administered by Dundee City Council since 1st April 1996. It is part of the Local Pension Government Scheme (LGPS), which is a statutory scheme established under the primary legislations of the Superannuation act 1972 and Public Service Pensions Act 2013.

Tayside's participating employers include local authorities, as well as their subsidiary companies and contractors; a number of universities and colleges ; and a range of organisations with funding or service links to local government.

Since our last pensions administration Internal Audit review in 2020 which was rated 'Medium risk', the administration processes and systems remain the same with the exception of the recent implementation of member self-service platforms which allows members to access an online portal to view and update details for their pension.

An audit of Tayside Pension Fund (TPF) Pension Administration is included in the 2023/24 Internal Audit Plan approved by the Pension Sub-Committee.

Audit Objective

Effective Scheme Administration is essential to providing a good quality member experience and to discharge the responsibilities of the scheme manager and pensions board in paying benefits to members. Key objectives that support this experience include the payment of complete and accurate benefits to each member, including in cases of contributions refunds, deaths and payments or retirement benefits. These should all be processed in accordance with the Trust Deed and Rules, and in line with service level agreement deadlines.

Scope

Design effectiveness

Through a series of walkthroughs, we will review the design effectiveness of the processes and controls in place as detailed in the table below.

Operating effectiveness testing

We will test the quality and appropriateness of the key oversight and monitoring controls identified during our design effectiveness walkthroughs on a sample basis to ensure that the controls are operating as designed. We will utilise the information gathered during our design effectiveness walkthroughs to develop a testing approach that will focus on areas of risk.

Our scope will consist of the following:

Appendix B: Terms of reference

Sub-process	Objectives	Risks
Refund of Contributions	<ul style="list-style-type: none"> • TPF has controls in place to ensure the accuracy of contribution refund calculations, including calculation of any applicable deductions. • The refund process is clearly documented in adequate policies and procedures. • Controls are in place to ensure refunds are approved and authorised by an appropriate officer. • Adequate segregation of duties across the refund processes are in place. • Controls are in place to process contributions refunds in a timely manner to avoid unnecessary delays to members. 	<ul style="list-style-type: none"> • Incorrect calculation of refund amounts leading to negative financial impacts and inaccurate member benefits. • Inadequate controls increasing the risk of fraudulent activity, such as unauthorised refunds. • Delays in the refund process can lead to regulatory breaches or member dissatisfaction and reputational impacts.
Deaths	<ul style="list-style-type: none"> • Effective controls are in place to ensure prompt notification, identification and recording of member deaths. • Procedures are in place to verify the accuracy of death information, including obtaining official documents. • Deaths are processed in a timely manner to prevent overpayments of benefits. • Performance metrics are in place to monitor the quality and timeliness of deaths processing. • Training is in place to ensure that administrators processing deaths and senior administrators checking cases are competent to perform their roles. 	<ul style="list-style-type: none"> • Inaccurate or delayed notification and processing of member deaths can lead to errors in benefit payments. • Inefficient processes or insufficiently trained staff may result in delays to processing death benefits.
Payment of Retirement Benefits	<ul style="list-style-type: none"> • TPF has controls in place to ensure that retirement benefit calculations are reviewed by an appropriate officer who has the required training and experience to perform their role. • Quality assurance programme is in place to ensure that calculation processes and controls are reviewed and monitored, as well as the timeliness of the processing of retirement payments. • Approval controls are in place to ensure all transactions are authorised by a senior member of staff. 	<ul style="list-style-type: none"> • Inadequate controls in place to ensure that benefit calculations performed are accurate and member cases are completed and paid to members in a timely basis. • Quality of administration of payment of benefits is not monitored leading to poor administration performance.

Appendix C: Limitations and responsibilities

Limitations inherent to the internal auditor's work

We have undertaken this review subject to the limitations outlined below:

Internal control

Internal control systems, no matter how well designed and operated, are affected by inherent limitations. These include the possibility of poor judgment in decision-making, human error, control processes being deliberately circumvented by employees and others, management overriding controls and the occurrence of unforeseeable circumstances.

Future periods

Our assessment of controls is for the period specified only. Historic evaluation of effectiveness is not relevant to future periods due to the risk that:

- The design of controls may become inadequate because of changes in operating environment, law, regulation or other changes; or
- The degree of compliance with policies and procedures may deteriorate.

Responsibilities of management and internal auditors

It is management's responsibility to develop and maintain sound systems of risk management, internal control and governance and for the prevention and detection of irregularities and fraud. Internal audit work should not be seen as a substitute for management's responsibilities for the design and operation of these systems.

We endeavour to plan our work so that we have a reasonable expectation of detecting significant control weaknesses and, if detected, we carry out additional work directed towards identification of consequent fraud or other irregularities. However, internal audit procedures alone, even when carried out with due professional care, do not guarantee that fraud will be detected.

Accordingly, our examinations as internal auditors should not be relied upon solely to disclose fraud, defalcations or other irregularities which may exist.

Thank you

[pwc.co.uk](https://www.pwc.co.uk)

This document has been prepared only for Tayside Pension Fund and solely for the purpose and on the terms agreed with Tayside Pension Fund in our agreement dated 30 November 2023. We accept no liability (including for negligence) to anyone else in connection with this document, and it may not be provided to anyone else.

Internal audit work was performed in accordance with PwC's Internal Audit methodology which is aligned to Public Sector Internal Audit Standards. As a result, our work and deliverables are not designed or intended to comply with the International Auditing and Assurance Standards Board (IAASB), International Framework for Assurance Engagements (IFAE) and International Standard on Assurance Engagements (ISAE) 3000.

In the event that, pursuant to a request which Tayside Pension Fund has received under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004 (as the same may be amended or re-enacted from time to time) or any subordinate legislation made thereunder (collectively, the "Legislation"), Tayside Pension Fund is required to disclose any information contained in this document, it will notify PwC promptly and will consult with PwC prior to disclosing such document. Tayside Pension Fund agrees to pay due regard to any representations which PwC may make in connection with such disclosure and to apply any relevant exemptions which may exist under the Legislation to such report. If, following consultation with PwC, Tayside Pension Fund discloses any this document or any part thereof, it shall ensure that any disclaimer which PwC has included or may subsequently wish to include in the information is reproduced in full in any copies disclosed.

© 2024 PricewaterhouseCoopers LLP. All rights reserved. In this document, "PwC" refers to the UK member firm, and may sometimes refer to the PwC network. Each member firm is a separate legal entity. Please see www.pwc.com/structure for further details.

190219-133533-JS-OS

This page is intentionally left blank

Internal audit report 2023/2024

Liquidity

Tayside Pension Fund ('TPF')
Final
February 2024



This page is intentionally left blank

Contents

1. Executive Summary	1
2. Current year findings	5
Appendices	12
Appendix A: Basis of our classifications	13
Appendix B: Terms of reference	16
Appendix C: Limitations and responsibilities	19

Distribution list

For action:
Stuart Norrie, Senior Banking & Investment Officer (Corporate Finance)



This page is intentionally left blank

Executive summary

Report classification



Satisfactory

Total number of findings

	Critical	High	Medium	Low	Advisory
Control design	-	-	-	3	-
Operating effectiveness	-	-	-	-	-
Total	-	-	-	3	-

Background

A fundamental requirement of a pension scheme is that it has sufficient assets available to pay benefits as and when they become due. In order to achieve this, pension schemes need to ensure that they have sufficient liquidity available to meet the benefit demands, through direct holdings in cash and cash-like assets, having assets that can be easily and quickly sold and through receipts from the investments that they hold. It is also important to ensure that the right balance is struck such that the investments are not overly cautious as to impact on the return.

While making regular pension payments can be relatively predictable, pension schemes will have other requirements for cash which can be volatile and lumpy in nature such as to:

- Satisfying member optionality around transfers out and cash at retirement.
- Support any collateral requirements from any of the scheme's assets (e.g. swaps).

Liquidity Management can therefore be complex and requires a strong understanding of what the uncertain and certain payments in and out of a pension scheme could be and how cash could be made available in times of stress.

As an example, following an extended period of historically low interest rates and high levels of outturn inflation driven by exiting the pandemic and the Ukraine conflict, over the course of 2022 we saw the Bank of England steadily increase the base rate which consequently led to increases in the rate of interest for Government debt. During September 2022, a mini-budget announced by the Government included a wide range of tax cuts and spending promises, which impacted the confidence in the UK government's ability to pay its debts leading to rising interest rates over a very short time scale. The pace and magnitude of the rate rises, together with the rises that had occurred over the year, caused a 'doom-spiral' effect in yields leading to crisis in LDI positions. A number of schemes did not have sufficient cash set aside and appropriate liquidity mechanisms in place to meet the associated collateral demands, leading to a loss of their interest rate and inflation hedging.

While this did not directly impact Tayside Pension Fund ('TPF'), it demonstrates the potential market volatility that funds should prepare for. It has led to liquidity management and its associated governance becoming a key focus for many pension scheme trustees and managers.

Executive summary cont.

Scope

As part of the audit, we reviewed the design and operating effectiveness of key controls in place relating to TPF's cash flow requirements in both the short and long term, including:

- Determining cash flow requirements;
- Governance of liquidity risks;
- Cash flow forecasting model data and inputs; and
- Cash flow forecasting model output and integrity.

Limited operational effectiveness testing was performed for the short term daily cash flow requirements due to the absence of formal documentation of the daily process. Refer to the Findings 2 and 3 for further details.

Summary

The overall rating of this report is 'Satisfactory with Exceptions' driven by three Low-rated findings. These are summarised in the table below. Full details, alongside agreed actions from Management are within the following sections of the report.

The following areas of good practice were identified:


- TPF has a clearly defined Investment Strategy Statement which details the long-term and short-term strategic asset allocations and cash flow requirements.
- There is adequate oversight of portfolio Management, including appropriate monitoring and reporting with fund managers.
- The Liquidity Management team is informed and knowledgeable over the Management of the fund.
- The responsibilities of investment managers is appropriately defined.

Executive summary cont.

The table below outlines where we have observed good practice and areas of improvement across the scope objectives of this review:

Sub-process	Scope objectives	Summary of findings
Determining cash flow requirements	<ul style="list-style-type: none">• There is a defined document that clarifies Management's investment strategy and how Management determine the cash flow requirements in the short and long term.• Evidence that those making decisions receive adequate training on the cash flow models.• Appropriate timely reviews of the in place strategies.• Consideration of all the areas which feed into the decision making process.• A clear distinction between the short and long term strategy.• Demonstrable process in place to ensure that failure to pay benefits is minimised.• Short term: A governance procedure in place over: data and spreadsheets which feed into the models, and management of monthly pension payrolls.• Long term: Clear responsibilities in development of the upcoming models and annual long term forecasting.	<ul style="list-style-type: none">● Finding 1 (Low) - Tolerances and stress analysis built into cash flow forecasting: From walkthroughs with the Liquidity Management team and review of documentation received, the daily short term cash flow model produced by TPF is based on historical data and there are limited assumptions or tolerances built into the forecasts which allow for uncertainties or unexpected events. TPF rely on assuming that the parameters in the cash flow model from the previous 12 months will be the same as the next 12 months, increasing the risk that models are not an accurate forecast for the current period. TPF also do not perform scenario analysis on their long term cash flow models. There are no scenario analysis tolerances built into the model assumptions or performed on the models, and the cash flow inflows for the long term forecasts are assumed to be consistent with previous years historical data with no consideration or adjustment, such as for any stress events.
Governance of Liquidity risks	<ul style="list-style-type: none">• There is a defined document that clarifies Management's investment strategy and how Management determine the cash flow requirements in the short and long term.• Appropriate timely reviews of the strategies in place.• There are policies and procedures in place, including treasury management policies and investment strategies, which adequately define and consider the key liquidity risks.• The delegated responsibilities of the investment managers and relevant counterparties have been clearly defined.• There is adequate oversight of portfolio management, including appropriate monitoring and reporting with fund managers.	<ul style="list-style-type: none">● Finding 3 (Low) - Documentation of policy, procedures, roles and responsibilities: While a suite of policy and strategy document exists at TPF, there is limited supporting procedures to support these documents and provide guidance over any of the regular cash flow activities. The knowledge to manage TPF's liquidity is concentrated within the Liquidity Management team and is not documented, creating a significant key person dependency within the team of five. In addition to this, the roles and responsibilities of the Liquidity Management team are not outlined within any of the documentation available. As such it is not apparent who is responsible for cash flow activities for both short term and long term considerations, nor is it clear where the remit of Liquidity Management falls within the team.

Executive summary cont.

Sub-process	Scope objectives	Summary of findings
Cash flow forecasting model data and inputs	<ul style="list-style-type: none">• Testing has been performed to make sure that the data inputs are received correctly and timely. Consideration has been given around whether alternative inputs could be used which are more relevant to the calculations.• Internal models which are used have been tested and that they all link together and consider the key areas which affect cash flow requirements• Regular exercises and reviews are conducted to verify the appropriateness of the data and inputs.	<p> Finding 2 (Low) - Model review processes (leading to key person dependency and deficiencies in model governance): Walkthroughs of both short term and long term cash flow activities demonstrated that management could not consistently provide evidence of their review, nor are the review processes defined and documented. This creates a key person dependency and reduces the reliability of the review process.</p> <p>There is also no real-time version control maintained for any of the spreadsheets, limiting the accountability for updates within the spreadsheets as changes are not tracked. Management noted that version control is being implemented in Q2 2024 with the movement over to Sharepoint from Citrix.</p>
Cash flow forecasting model output and integrity	<ul style="list-style-type: none">• Testing that appropriate validation checks exist on the results of the model.	<p>Finding 1 (Low) - Tolerances and stress analysis built into cash flow forecasting: This observation (as described above) also impacts TPF's ability to manage cash flow forecasting model data and inputs.</p>

Current year findings

1 Lack of tolerances and stress analysis built into cash flow forecasting

Control Design

Finding rating

Impact	4
Likelihood	ii
Rating	Low

Finding and root cause

TPF performs cash flow forecasting on a daily basis for short term forecasts and on an annual basis for long term forecasts. These forecasts are used to ensure there are sufficient funds to pay benefits and other scheme payments when they fall due over both a short and long term period.

Short term cash flow model (12 month horizon):

The daily short term cash flow model produced by TPF is based on historical data and there are no assumptions or tolerances built into the forecasts which allow for uncertainties or unexpected events. TPF rely on assuming that the parameters in the cash flow model from the previous 12 months will be the same as the next 12 months, increasing the risk that models are not an accurate forecast for the current period. For example, we would expect to see the following scenarios considered:

- Scenarios which would cause spikes in one-off payments, such as transfers and increases in deaths; and
- Uncontrollable events such as a large number of employers leaving at once.

Long term cash flow model (up to 10 years):

TPF has a long term cash flow model in place which is updated and reviewed annually. Internal Audit noted that the cash flow model could be further enhanced to be more in line with good practice in the following areas:

- Implementing stress analysis tolerances into the model assumptions or performing them on the model, as current cash inflows used in long term forecasts are assumed to be consistent with previous years historic data with no consideration or adjustment for any stress events;
- Considerations for economic fluctuations such as inflation and interest rates; and
- Considerations for the change in member demographic over time.

Note: Internal Audit acknowledge that this was the first year TPF implemented the long term model. It was published in June 2023 and management noted that it is still being developed year on year.

Current year findings

1 Lack of tolerances and stress analysis built into cash flow forecasting

Control Design

Finding rating

Impact	4
Likelihood	ii
Rating	Low

Potential implications

A lack of scenario analysis and reliance on historical data in cash flow forecasting may lead to inaccurate cash flow predictions and potential underestimation of liquidity risks from unexpected events or overestimation leading to poorer investment performance. This may impact TPF's ability to meet liquidity obligations, putting members at financial risk and potential reputational impacts.

NOTE: A lower risk rating has been allocated to this observation at this time owing to:

- The nature of TPF's current asset allocation (with circa 80% of fund allocation being in liquids);
- The current level of cash reserves available; and
- The investment strategies focus on future investment in more liquid assets, including its current liquidity profile and investment strategy.

Notwithstanding, Management recognises that, in line with good practice, scenario analysis will enable for better long term modeling and understanding of the extent to which the fund can withstand liquidity stress.

Recommendations

- 1.1 Document the key assumptions and tolerance levels, and implement these into the short term cash flow forecasting models.
- 1.2 Implement a trend analysis approach to the cash flow model assumptions by analysing prior years' historical data to identify and track variances in the data used.
- 1.3 Consider relevant stress scenarios and implement scenario analysis into the long term cash flow assumptions. The scenarios considered should be clearly documented and approved by an appropriate officer. The key areas of focus for stress testing may relate to: CPI increases; increasing benefit payments and bulk transfers out / cessations when the scheme is in surplus; and economic fluctuations such as inflation and interest rates.

Management action plan

An additional resource is required to accommodate. These recommendations and resource requirement will be incorporated into a larger review.

Responsible person/title:

Stuart Norrie, Senior Banking & Investment Officer

Target date: December 2024

Current year findings

2 Model review processes (leading to key person dependency and model governance deficiencies)

Control Design

Finding rating

Impact	2
Likelihood	iv
Rating	Low

Finding and root cause

A number of checking and reconciliation controls for the short and long term cash flow activities were identified, however, TPF do not have formal documentation of the review process creating a key person dependency for preparation and review. We were also not able to consistently evidence the review processes taking place during both short and long term cash flow activities:

1) No formally documented process(es) that define the review and approval process for cash flow requirements and an inability to evidence review steps performed: Currently, there are several daily review activities performed by the Liquidity Management team but there are no formal procedures defined or documented which detail how and why the review processes are completed. As a result, there is key person dependency risk as the review steps in the process would not be able to be performed by alternative senior team members if the Senior Banking & Investment Officer is unavailable. Two examples where review is inadequately documented are:

- The 'Treasury Action', which is the key output of the daily short term cash flow model, is signed off by both the preparer (member of the Liquidity Management team) and the reviewer (senior member of the Liquidity Management team) on the spreadsheet. However, management were not able to evidence the clear step by step process that is completed as part of the review. The sign-off process does not provide an adequate audit trail of the checks performed and the checks that are required to be performed are not formally documented.
- To verify that contributions are being received correctly and timely, TPF maintain a contributions tracker which was set up by IT and is updated on a daily basis by the Liquidity Management team. The Senior Banking & Investment Officer visually inspects the contributions tracker to check the accuracy of the spreadsheet before posting it to the General Ledger ('GL') every month, but this does not include a clear audit trail and evidence of the checks performed. To post the tracker to the GL, the Senior Banking & Investment Officer will PDF the document and email it to the corporate business support team stating that it is balanced for the month. Whilst this demonstrates formal evidence of review and provides accountability, there are no formal procedures documenting the checks that need to be performed.

We noted that management's main purpose for performing TPF's cash flow model review activities is to support the daily and long term investments decision making process. However, we were unable to evidence an active focus on identifying errors and checking the accuracy of the data as part of their review process.

2) Data inputs are entirely manual and there are no automated checks over the accuracy of inputs: Both the short term and long term cash flow models utilised by TPF rely heavily on the manual inputs by the Liquidity Management team, which increases the chances of data inputs not being complete and accurate. While there are some visual checks throughout the process, there is no audit trail of this. The introduction of automated checks will reduce the risk of error by limiting input values and, where possible, capturing data directly from the source. Examples include:

- minimum/maximum value checks for outgoing pension payments (for example ensuring that fund expenses stay within a pre-decided minimum and maximum specified range);
- magnitude tests for cell values (for example applied to various input parameters such as contribution projections to assess the reasonableness of the projected increases); or
- automated formula driven checks within cells where data is being input (for example verifying that the data entered into cells involving outflows are negative values only).

Current year findings

2 Model review processes (leading to key person dependency and model governance deficiencies)

Control Design

Finding rating

Impact	2
Likelihood	iv
Rating	Low

Finding and root cause

3) Cash flow models are not appropriately backed up resulting in insufficient audit trails: Cash flow requirements are carried out within singular spreadsheets that are maintained, and updated daily and annually for the short term and long term models respectively. The cash flow spreadsheets are stored on citrix servers which are updated every evening. While this provides a suitable location to maintain the spreadsheets, there are no real-time backups and clear version history. It would be prudent to move the models to a cloud-based location which allows live updates, maintains continuous version history and reduces the risk that data may be lost through spreadsheet corruption. Management confirmed that there is a plan in place, to move the cash flows to Sharepoint in Q2 2024. This will enable live updates, provide continuous back ups and provide an effective audit trail of all changes.

Potential implications

A lack of a formal and documented review process may reduce transparency across processes and produce inconsistencies and variation in how different processes or transactions are being considered.

The absence of a process for automated testing on the cash flow forecasts increases the risk that errors in the data are not identified.

The inability to see the version history in real time of the daily cash flow models for changes made throughout the day increases the risk of data changes going unnoticed and management not addressing any urgent daily changes in a timely manner.

Recommendations

- 2.1 Define and document the review processes and checks that are performed across both short term and long term models. When the review checks are performed they should be clearly documented to provide a clear audit trail if not already addressed by embedded automated checks.
- 2.2 Embed automated checks, where relevant, into the short and long term cash flow forecast model spreadsheets to test for validity of the data, including reasonableness, magnitude and completeness tests for the cell values in the spreadsheets. Review the input and/or output testing on a periodic basis to ensure it is working as intended.
- 2.3 Complete the transition of the cash flow models to Sharepoint, ensuring appropriate version history is maintained.

Current year findings

2

Model review processes (leading to key person dependency and model governance deficiencies)

Control Design

Management action plan

Recommendations accepted. Automated checks to cash flow management will be integrated per PwC assistance & guidance.

Responsible person/title:

Stuart Norrie, Senior Banking & Investment Officer

Target date: December 2024

Finding rating

Impact	2
Likelihood	iv
Rating	Low

Current year findings

3

Lack of formal documentation of procedures and roles and responsibilities

Control Design

Finding rating

Impact	3
Likelihood	iii
Rating	Low

Finding and root cause

Tayside Pension Fund's administering authority, Dundee City Council, maintains a suite of policy and strategy documents for TPF within their publicly available website. These provide a set of rules and principles that should be adhered to when carrying out daily treasury operations and they provide a plan for how the funds investments should be managed. To underpin these documents, there are limited supporting guidance or procedural documents which detail how Tayside staff should complete cash flow and Liquidity Management activities and there is no version control in place for some of the policy and strategy documents:

No formal documentation, including clear roles and responsibilities, of processes performed:

TPF's Liquidity Management team consists five team members which includes the Senior Banking & Investment Officer, two senior team members and two junior team members. The following processes detailed below are performed by the Liquidity Management team, however, there is no formal documentation detailing the processes performed. The roles and responsibilities of those involved in these processes are also not clearly defined. Therefore, it is not clear where the remit of the various controls and processes fall within the team.

Determining cash flow requirements:

- How both the short term and long term cash flow models should be optimally used, including the step by step process that is carried out each day, the estimation methodology used and how forecasting is completed;
- How investments should be made including the sign-off process;
- How contributions are monitored and updated within models; and
- Communication with and oversight of the custodian;

Governance of Liquidity risks:

- How fund managers should be monitored, including communication and reporting;
- The requirements of the Pensions Sub-Committee; and
- The types and location of reports that should be reviewed to provide ongoing monitoring of the fund.

Cash flow forecasting model data and inputs:

- The review and approval processes for key cash flow activities (See finding 2).

Current year findings

3

Lack of formal documentation of procedures and roles and responsibilities

Control Design

Finding rating

Impact	3
Likelihood	iii
Rating	Low

Potential implications

Without detailed procedures in place to support TPF's policy documents, a key person dependency risk is created over the individuals who are responsible for completing daily cash flow activities and maintaining adequate liquidity as there is no way to understand the process without their guidance or input. This may lead to processes being completed inconsistently, ineffectively or incorrectly, leading to operational disruption and potentially financial loss.

If roles and responsibilities are not clearly defined for the Liquidity Management team, there may be increased inefficiencies due to duplication of efforts or key controls missed across cash flow activities.

Recommendations

3.1 Produce a set of procedures that describe and explain both daily and long term cash flow Management activities that are performed. This should include clear roles and responsibilities, the review processes and frequency.

Management action plan

Documentation specific to TPF will be developed and issued.

Responsible person/title:

Stuart Norrie, Senior Banking & Investment Officer

Target date: December 2024

This page is intentionally left blank

Appendices



This page is intentionally left blank

Appendix A: Basis of our classifications

Individual finding ratings

Findings are assessed on their impact and likelihood based on the assessment rationale in the tables below.

Impact rating	Assessment rationale
6	A finding that could have a: <ul style="list-style-type: none">• Critical impact on operational performance; or• Critical monetary or financial statement impact; or• Critical breach in laws and regulations that could result in material fines or consequences; or• Critical impact on the reputation or brand of the organisation which could threaten its future viability.
5	A finding that could have a: <ul style="list-style-type: none">• Significant impact on operational performance; or• Significant monetary or financial statement impact; or• Significant breach in laws and regulations resulting in large fines and consequences; or• Significant impact on the reputation or brand of the organisation.
4	A finding that could have a: <ul style="list-style-type: none">• Major impact on operational performance; or• Major monetary or financial statement impact; or• Major breach in laws and regulations resulting in significant fines and consequences; or• Major impact on the reputation or brand of the organisation.
3	A finding that could have a: <ul style="list-style-type: none">• Moderate impact on the organisation's operational performance; or• Moderate monetary or financial statement impact; or• Moderate breach in laws and regulations with moderate consequences; or• Moderate impact on the reputation of the organisation.

Appendix A: Basis of our classifications

Individual finding ratings

Impact rating	Assessment rationale
2	A finding that could have a: <ul style="list-style-type: none"> • Minor impact on the organisation’s operational performance; or • Minor monetary or financial statement impact; or • Minor breach in laws and regulations with limited consequences; or • Minor impact on the reputation of the organisation.
1	A finding that could have a: <ul style="list-style-type: none"> • Insignificant impact on the organisation’s operational performance; or • Insignificant monetary or financial statement impact; or • Insignificant breach in laws and regulations with little consequence; or • Insignificant impact on the reputation of the organisation.
Advisory	A finding that does not have a risk impact but has been raised to highlight areas of inefficiencies or good practice.

Likelihood

Likelihood rating	Assessment rationale
vi	Has occurred or probable in the near future
v	Possible in the next 12 months
iv	Possible in the next 1-2 years
iii	Possible in the medium term (2-5 years)
ii	Possible in the long term (5-10 years)
i	Unlikely in the foreseeable future

Appendix A: Basis of our classifications





Finding rating

This grid is used to determine the overall finding rating. Issues with a low impact and likelihood rating will not be reported.

Likelihood rating	Impact rating					
	6	5	4	3	2	1
vi	Critical	Critical	High	High	Medium	Medium
v	Critical	High	High	Medium	Medium	Low
iv	High	High	Medium	Medium	Low	Low
iii	High	Medium	Medium	Low	Low	Low
ii	Medium	Medium	Low	Low	Low	Not reportable
i	Medium	Low	Low	Low	Not reportable	Not reportable

Report classifications

The report classification is determined by allocating points to each of the findings included in the report.

Findings rating	Points	Report classification	Points
Critical	40 points per finding	 Satisfactory	6 points or less
High	10 points per finding	 Satisfactory with exceptions	7 – 15 points
Medium	3 points per finding	 Needs improvement	16 – 39 points
Low	1 point per finding	 Unsatisfactory	40 points and over

Appendix B: Terms of reference

Scope

Cash flow management and liquidity is a key focus of Management and the Trustees. We will review the design and operating effectiveness of key controls in place relating to TPF's cash flow requirements in both the short and long term.

Our scope will consist of the following:

Sub-process	Objectives and areas of review	Risks
Determining cash flow requirements	<ul style="list-style-type: none"> Evidence that those making decisions receive adequate training on the cash flow models. There are documented and defined responsibilities for liquidity issues if they arise. Consideration of all the areas which feed into the decision making process. A clear distinction between the short and long term strategy. Demonstrable process in place to ensure that failure to pay benefits is minimised. Short term: A governance procedure in place over data and spreadsheets which feed into the models; the management of monthly pension payroll; daily cash forecasting and oversight of money received from the custodian. Long term: Clear responsibilities in development of the upcoming models. 	<ul style="list-style-type: none"> Short term cash flows: Ineffective framework to determine the levels of liquid and illiquid assets resulting in members not being paid their benefits or investment performance being adversely impacted. Long term cash flows: Failure to sufficiently consider the expected future cash flows impacting on investment performance.
Governance of Liquidity risks	<ul style="list-style-type: none"> There is a defined document that clarifies Management's investment strategy and how Management determine the cash flow requirements in the short and long term. Appropriate timely reviews of the strategies in place. There are policies and procedures in place, including treasury management policies and investment strategies, which adequately define and consider the key liquidity risks. The delegated responsibilities of the investment managers and relevant counterparties have been clearly defined. There is adequate oversight of portfolio management, including appropriate monitoring and reporting with fund managers. 	<ul style="list-style-type: none"> Ineffective investment strategy leading to unclear investment objectives and failure to consider a long term cash flow strategy. Failure to consider counterparty risk in relevant cash flow policies and strategies, leading to increased liquidity risk e.g. payment interruption. Inadequate oversight of portfolio management leading to the fund's cash not being managed in line with objectives, or inability to identify poor portfolio performance.

Appendix B: Terms of reference

Sub-process	Objectives and areas of review	Risks
Cash flow forecasting model data and inputs	<ul style="list-style-type: none">• Testing has been performed to make sure that the data inputs are received correctly and timely. Consideration has been given around whether alternative inputs could be used which are more relevant to the calculations.• Internal models, including short term monthly pension payrolls and long term 10 year forecasts, have been tested and that they all link together and consider the key areas which affect cash flow requirements.• Regular exercises and reviews are conducted to verify the appropriateness of the data and inputs.	<ul style="list-style-type: none">• Data sources and model inputs for short and long term models are erroneous leading to incorrect investment decisions being made.
Cash flow forecasting model output and integrity	<ul style="list-style-type: none">• Testing that appropriate validation checks exist on the results of the models.	<ul style="list-style-type: none">• Model output is not being reviewed for reasonableness.

Appendix B: Terms of reference

Limitations of scope

As part of our review, we will not perform the following testing:

- Independently test and validate the results of the cash flow models – our review instead focuses on how the data is used and how output influences the decision making process.
- Suggest any strategic changes based on our understanding of investment markets.
- Undertake a detailed review of how the long term cash flow requirements are determined.
- Review of the governance process for determining long term cash flows.

Any observations we may report are limited to those identified through the course of our work and are not intended to represent an exhaustive list of all potential issues or considerations. Our work is not designed to ensure compliance with all laws and regulations. Fraud, error, or non compliance with laws and regulations may occur and not be detected. Furthermore, the scope of our work does not constitute assurance over compliance with any laws and regulations.

Audit approach

Our audit approach is as follows:

Determining cash flow requirements

- Review of the governance process for determining short term cash flows.
- Review of the relevant policies, procedures, controls and documentation, through discussions with key personnel.
- Review of the relevant treasury and liquidity strategies in place.

Governance of liquidity risks

- Review of the relevant strategies and policies in place to determine how they address and consider the key liquidity risks.
- Review of governance processes and delegated responsibilities in place for the relevant fund managers.

Model data and inputs

- Review of the data sources used to populate models.
- Review of the process taken to derive any other inputs and consideration of whether these are the most appropriate for their purpose.
- Understanding how TPF's use of models combine to give an output which is fit for purpose and a review of the efficiency of its approach and its robustness.

Appendix C: Limitations and responsibilities

Limitations inherent to the internal auditor's work

We have undertaken this review subject to the limitations outlined below:

Internal control

Internal control systems, no matter how well designed and operated, are affected by inherent limitations. These include the possibility of poor judgment in decision-making, human error, control processes being deliberately circumvented by employees and others, management overriding controls and the occurrence of unforeseeable circumstances.

Future periods

Our assessment of controls is for the period specified only. Historic evaluation of effectiveness is not relevant to future periods due to the risk that:

- The design of controls may become inadequate because of changes in operating environment, law, regulation or other changes; or
- The degree of compliance with policies and procedures may deteriorate.

Responsibilities of management and internal auditors

It is management's responsibility to develop and maintain sound systems of risk management, internal control and governance and for the prevention and detection of irregularities and fraud. Internal audit work should not be seen as a substitute for management's responsibilities for the design and operation of these systems.

We endeavour to plan our work so that we have a reasonable expectation of detecting significant control weaknesses and, if detected, we carry out additional work directed towards identification of consequent fraud or other irregularities. However, internal audit procedures alone, even when carried out with due professional care, do not guarantee that fraud will be detected.

Accordingly, our examinations as internal auditors should not be relied upon solely to disclose fraud, defalcations or other irregularities which may exist.

Thank you

[pwc.co.uk](https://www.pwc.co.uk)

This document has been prepared only for Tayside Pension Fund and solely for the purpose and on the terms agreed with Tayside Pension Fund in our agreement dated 30 November 2023. We accept no liability (including for negligence) to anyone else in connection with this document, and it may not be provided to anyone else.

Internal audit work was performed in accordance with PwC's Internal Audit methodology which is aligned to Public Sector Internal Audit Standards. As a result, our work and deliverables are not designed or intended to comply with the International Auditing and Assurance Standards Board (IAASB), International Framework for Assurance Engagements (IFAE) and International Standard on Assurance Engagements (ISAE) 3000. In the event that, pursuant to a request which Tayside Pension Fund has received under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004 (as the same may be amended or re-enacted from time to time) or any subordinate legislation made thereunder (collectively, the "Legislation"), Tayside Pension Fund is required to disclose any information contained in this document, it will notify PwC promptly and will consult with PwC prior to disclosing such document. Tayside Pension Fund agrees to pay due regard to any representations which PwC may make in connection with such disclosure and to apply any relevant exemptions which may exist under the Legislation to such report. If, following consultation with PwC, Tayside Pension Fund discloses any this document or any part thereof, it shall ensure that any disclaimer which PwC has included or may subsequently wish to include in the information is reproduced in full in any copies disclosed.

© 2024 PricewaterhouseCoopers LLP. All rights reserved. In this document, "PwC" refers to the UK member firm, and may sometimes refer to the PwC network. Each member firm is a separate legal entity. Please see www.pwc.com/structure for further details.