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Data Onboarding, Custodian Statement Reconciliation and Investment Reporting Across Multi-Asset Modules: A study conducted for Asset Vantage - A Unidel Company

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Abstract

Investment reporting is only as reliable as the data that feeds it. Family offices hold assets across several custodians, currencies and legal entities, and their platforms are populated by onboarding custodian statements into a general ledger and then reconciling the ledger against the source statements. This paper studies that cycle empirically using aggregated operating data from a family-office WealthTech firm over June–August 2026: 2,161 reconciled transactions, 82 client accounts and four investment modules (direct equity, mutual funds, bank/cash and credit, and tax lots). The overall break rate was 7.1% (154 breaks). Break rates differed across modules, from 4.3% for mutual funds to 11.8% for tax lots ($\chi^2 = 19.0$, df = 3, $p < .001$), and the mix of causes also differed by module ($\chi^2 = 70.9$, df = 12, $p < .001$). Data-entry errors and timing differences explained 63% of breaks. Tax lots combined the highest break rate with the longest turnaround and, with bank/cash, absorbed an estimated 73% of resolution effort. The monthly break rate fell from 8.9% to 5.6% (trend $z = -2.48$, $p = .013$), consistent with a learning curve; the single-family versus multi-family difference was not significant ($p = .137$). A worked example shows that the cost-basis method alone can change a realised gain by 44.6%. A scenario analysis sizes the benefit of shifting control effort from detection to prevention.

Keywords: reconciliation, internal control, operational risk, tax-lot accounting, cost basis, family office, WealthTech, data quality

1. Introduction

1.1 Background and Motivation

A family office is a private wealth-management entity that manages the financial and investment affairs of a high-net-worth family. Because such families hold assets across multiple custodians, asset classes, currencies and legal entities, they rely on specialised software, commonly called WealthTech, to aggregate fragmented data into a single, ledger-backed view of net worth and performance (Asset Vantage, n.d.-b). The credibility of that view depends on a largely invisible operational process: custodian statements must be read and loaded into the platform, and then checked line by line against the source. Any unresolved difference between the two records, termed a *reconciliation break*, can misstate a client's holdings, cash, performance or capital-gains position.

For finance students this process sits at the intersection of financial accounting (the double-entry general ledger), investments (the instruments and corporate actions that change holdings) and risk management (the controls that stop errors reaching the client). Yet it is rarely studied with data. Discussion of reporting accuracy is mostly normative, describing what controls should exist, while little evidence shows where breaks actually arise, how long they take to resolve and what they cost in effort. This paper contributes such evidence from a live operating environment.

1.2 Problem Statement and Objectives

Reconciliation is a detective control: it finds errors after they have been made. If break rates are uneven across modules and concentrated in a few recurring causes, a uniform after-the-fact review is an inefficient way to protect reporting quality. The study therefore has five objectives: (a) to measure break rates and turnaround across four investment modules; (b) to classify breaks by root cause and test whether the cause mix differs by module; (c) to test whether the break rate changed over the observation window and whether it differs between single-family-office (SFO) and multi-



family-office (MFO) accounts; (d) to quantify the financial materiality of representative breaks, especially in tax-lot cost-basis accounting; and (e) to size, through scenario analysis, the benefit of moving part of the control effort from detection to prevention.

1.3 Research Questions and Hypotheses

Five hypotheses, stated in alternative form, structure the analysis. **H1:** the break rate differs across the four modules. **H2:** the distribution of break types is not independent of the module. **H3:** the overall break rate declined over June–August 2026. **H4:** the break rate differs between SFO and MFO accounts. **H5:** modules with higher break rates also have longer average turnaround times.

1.4 Significance and Structure

The findings matter to operations managers, who need to know where reviewer time is best spent; to finance and risk professionals, who need to connect operational error to reported values and tax outcomes; and to students, who can see internal-control, data-quality and operational-risk theory applied to operating data. Section 2 reviews the literature, Section 3 describes the setting, data and methods, Section 4 reports results, Section 5 discusses implications, control redesign, recommendations and limitations, and Section 6 concludes.

2. Literature Review

2.1 General-Ledger Accounting and Investment Reporting

Kieso et al. (2016) show that double-entry bookkeeping applied consistently through a chart of accounts is what allows disparate transactions to roll up into reliable financial statements. In an investment-reporting platform every module, whether equity, fund, cash or lot, posts to one ledger, which is what allows a single net-worth view to be produced (Asset Vantage, n.d.-c). The corollary is that an error in any one module propagates to the consolidated figure.

2.2 Internal Control and Reconciliation

The COSO (2013) framework identifies control activities, including reconciliations, as one of five components needed for reasonable assurance over the reliability of financial reporting. Auditing texts distinguish *preventive* controls, which stop an error being recorded (for example, a validation rule at data entry), from *detective* controls, which find it afterwards (for example, reconciliation; Whittington & Pany, 2019). Horngren et al. (2015) frame the economics: control effort is justified when its cost is below the cost of the errors it prevents. A process that relies mainly on a detective control is effective but reactive, and its cost scales with the number of breaks.

2.3 Operational Risk

The Basel Committee on Banking Supervision (2011) defines operational risk as the risk of loss from inadequate or failed internal processes, people and systems. Standard practice assesses each risk by likelihood and impact (Hull, 2018). In this paper the module break rate proxies likelihood and average turnaround proxies impact on effort, while a separate materiality analysis (Section 4.8) captures impact on reported values.

2.4 Data Quality

Wang and Strong (1996) conceptualise data quality from the consumer's viewpoint across intrinsic, contextual, representational and accessibility dimensions. Redman (1998) documents how poor data quality raises operating costs and weakens decisions, and Pipino et al. (2002) propose measurable quality metrics. In the present setting four dimensions are operational: accuracy (the system agrees with the custodian), completeness (every statement line is onboarded), timeliness (speed of onboarding and resolution) and consistency (the same event is always booked the same way).

2.5 Cost-Basis (Tax-Lot) Accounting

Under US tax rules the basis of property sold determines the gain or loss (26 U.S.C. § 1012) and the holding period determines whether it is short- or long-term (26 U.S.C. § 1222). Taxpayers may identify the specific lots sold (Treas. Reg. § 1.1012-1(c)); absent identification, first-in-first-out (FIFO) is assumed, and an average-cost method is permitted for mutual-fund shares (Internal Revenue Service, n.d.-a, n.d.-b). Tax-lot accounting therefore records each acquisition, whether by purchase, reinvestment, bonus issue or transfer-in, as a lot with its own date, quantity and unit cost, and a sale relieves lots according to the client's designated method. Because outcomes differ materially by method, errors in lot relief misstate tax-relevant income.

2.6 Family-Office Technology and the Research Gap

Rosplock (2014) identifies technology adoption as a primary driver of scalability as family offices grow in complexity and across generations, which explains why ledger-based platforms exist. The literature above is, however, largely normative: it prescribes controls, dimensions and risk matrices but offers few observations of break frequency, cause



and resolution effort in a live multi-asset reporting process. This paper addresses that gap with module-level data and links the operational findings to financial outcomes.

2.7 Conceptual Framework

Figure 1 summarises the framework. A statement moves through five process stages, is classified into one of four modules, may generate a break of one of five types, and the outcomes studied are break rate, turnaround, effort and the risk of misstating net worth or realised gains.

Figure 1

Conceptual framework: process stages, modules, break types and outcome measures



Note. Author's construction.

3. Methodology

3.1 Research Design

The study is a descriptive and exploratory quantitative case study, supplemented by worked numerical illustrations. The unit of analysis is the reconciled transaction, aggregated to module, month and client-segment level. A single-organisation design gives depth and access to process detail at the cost of generalisability (Section 5.4).

3.2 Research Setting

The setting is a family-office WealthTech provider founded in 2011 and operating from the United States, India and Singapore. Its platform is a cloud-based, general-ledger-driven system for accounting and investment reporting, used by single- and multi-family offices, institutional wealth managers and accounting firms (CB Insights, n.d.; Asset Vantage, n.d.-a). Company-reported scale metrics appear in Table 1. The sector is in the growth stage of its life cycle: rivalry among vendors is high, buyers are sophisticated but face high switching costs once a family's ledger is built, and market research anticipates continued growth in demand (Sharefair Market Research, n.d.). Consolidation and leadership investment continue, as with the appointment of a new global chief executive (Pulse2, 2026). The firm's differentiator is a native general-ledger architecture, whereas several larger competitors layered ledger functions over separate reporting systems (Family Office, n.d.). The corresponding weakness is continued reliance on semi-manual onboarding for statements received as PDF or Excel files, particularly for lot-level tax data.

Table 1

Approximate operating metrics of the case firm

Operating metric	Approximate value
Assets tracked on the platform	USD 400 billion+
Family-office clients served	340–400+ families
Countries of client presence	10+
Custodian and bank integrations	45+
Accounts aggregated	7,500+

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Note. Company-reported figures; not independently audited.

Operations follow a five-step sequence: receipt of a custodian statement; mapping to the client account and module; onboarding into the platform; line-by-line reconciliation against the statement; and resolution or escalation of breaks. Four modules are used: direct equity (purchases, sales, bonus issues, splits, dividends), mutual funds (purchases, redemptions, switches and reinvestments valued at net asset value), bank/cash and credit (interest, dividends, fees, wires, margin activity) and tax lots (lot-level cost basis underlying the equity positions). Statements from three global custodians were handled.

3.3 Data and Sample

The data are aggregated operating counts recorded between June and August 2026. The sample comprises 82 client accounts, 2,161 reconciled transactions and 154 identified breaks. The same transactions are cross-classified by module, by month and by client segment, and all three classifications reconcile to the same totals. Sector and company information come from the secondary sources cited. Client identifiers and portfolio values are withheld; the figures are aggregated and illustrative of the pattern of work rather than a client-level record.

3.4 Variables and Measures

Table 2

Variable definitions

Variable	Definition	Level
Break rate	Breaks identified ÷ transactions reconciled × 100	Module, month, segment
Break type	Timing, price/NAV, corporate action, data entry, currency	Module
Turnaround time	Average business days from detection to resolution	Module
Resolution effort	Breaks × average turnaround days (a proxy that applies the module average to each break)	Module
Financial materiality	Variance ÷ correct position value, or change in realised gain	Worked examples

Note. Author's definitions.

Break rate (%) = (Breaks identified ÷ Transactions reconciled) × 100

3.5 Statistical Methods

H1 and H2 are tested with Pearson chi-square tests of independence on module × (break, no break) and module × break-type tables, with Cramér's V as the effect size. Wilson 95% intervals are reported for proportions because they behave well for small counts. H3 is tested with the Cochran–Armitage test for a linear trend across the three months and a chi-square comparison of June with August. H4 uses a two-proportion z-test; the SFO and MFO break counts (75 and 79) are derived from the reported rates and transaction counts and sum to the 154 total. H5 uses Pearson and Spearman correlation across the four modules and is treated as descriptive given n = 4.

3.6 Validity and Ethical Considerations

Internal consistency was verified: the module, monthly and segment tables all sum to 2,161 transactions and 154 breaks, and the break-type matrix sums by row to the module break counts. Confidentiality obligations were observed throughout; no client names, account numbers or statement excerpts are reproduced.

4. Results

4.1 Descriptive Statistics

Table 3 summarises activity by module. Bank, cash and credit handled the largest volume (705 transactions, 32.6% of the total), reflecting that dividends, fees and transfers from other modules also pass through cash. Direct equity followed with 612 transactions, mutual funds with 488 and tax lots with 356.



Table 3

Accounts, transactions and breaks by module

Module	Accounts	Transactions	Breaks	Break rate	95% CI (Wilson)
Direct equity	18	612	37	6.0%	4.4% – 8.2%
Mutual funds	22	488	21	4.3%	2.8% – 6.5%
Bank, cash & credit	24	705	54	7.7%	5.9% – 9.9%
Tax lots	18	356	42	11.8%	8.8% – 15.6%
All modules	**82***	**2,161**	**154**	**7.1%**	6.1% – 8.3%

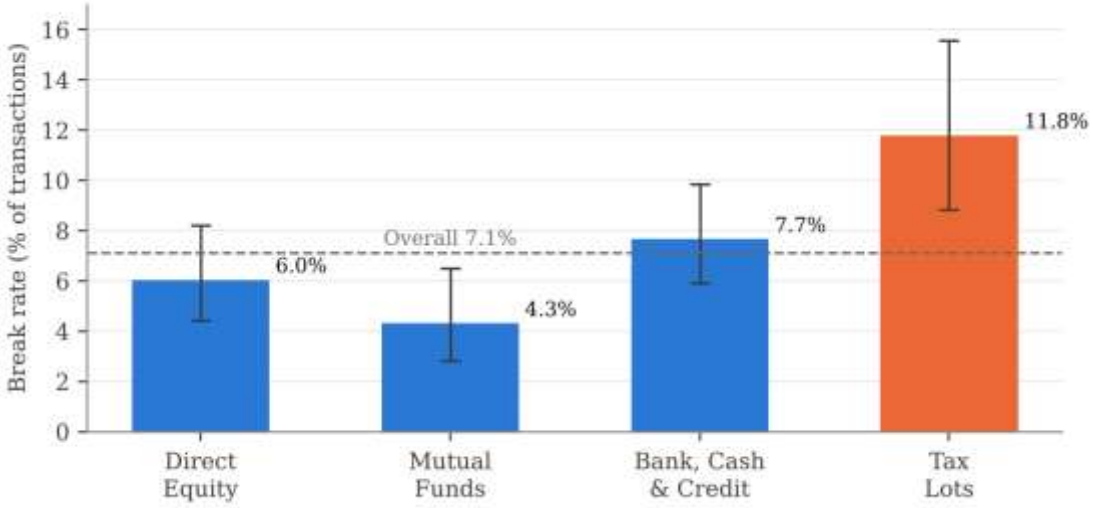
Note. June–August 2026. *Accounts are counted by the segment split (26 SFO + 56 MFO = 82). Confidence intervals computed by the author.

4.2 Break Rates Differ Across Modules (H1)

The chi-square test rejects equal break rates, $\chi^2(3) = 19.0$, $p < .001$, with a small-to-moderate effect (Cramér's $V = 0.094$). The result is driven by tax lots: their 11.8% break rate is 1.9 times the 6.2% rate for the other three modules combined, $\chi^2(1) = 14.05$, $p < .001$, and their confidence interval does not overlap with those of direct equity or mutual funds (Figure 2). Mutual funds had the lowest rate, while bank/cash and direct equity are statistically indistinguishable given overlapping intervals. H1 is supported.

Figure 2

Break rate by module with 95% Wilson confidence intervals



Note. Author's computation from the firm's aggregated operating data.

4.3 Break Composition by Module (H2)

Table 4

Break types by module: count and share of module breaks

Module	Timing	Price / NAV	Corporate action	Data entry	Currency	Total
Direct equity	9 (24%)	6 (16%)	14 (38%)	6 (16%)	2 (5%)	37
Mutual funds	8 (38%)	7 (33%)	1 (5%)	4 (19%)	1 (5%)	21
Bank, cash & credit	22 (41%)	–	–	19 (35%)	13 (24%)	54
Tax lots	5 (12%)	3 (7%)	8 (19%)	24 (57%)	2 (5%)	42
All modules	**44 (29%)**	**16 (10%)**	**23 (15%)**	**53 (34%)**	**18 (12%)**	**154**

Note. Shares computed by the author; percentages may not sum to 100 because of rounding.

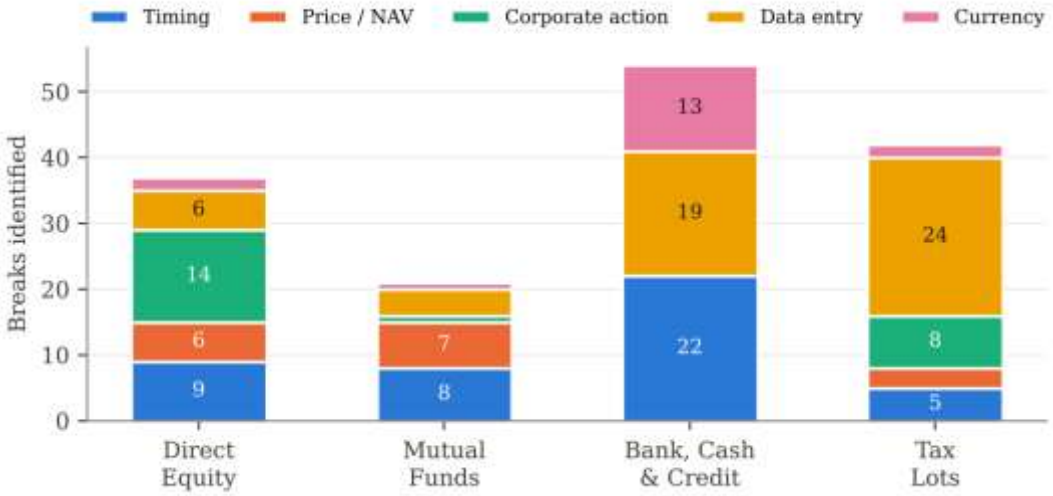
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Break composition is strongly dependent on module, $\chi^2(12) = 70.9$, $p < .001$, Cramér's $V = 0.39$ (a large effect). Two caveats apply: several expected cell counts are below five, and the two empty cells are structural, since price/NAV and corporate-action breaks do not arise in a cash ledger. The result is best read as a clear pattern rather than a precise p-value. H2 is supported. The module signatures are distinct (Table 4, Figure 3). Direct-equity breaks are dominated by corporate actions (38%): a bonus issue or split is booked before or after the custodian's effective date, or missed, creating a temporary quantity mismatch. Mutual-fund breaks are mainly timing and NAV-date differences. Bank/cash breaks come from timing (trade date versus settlement date) and currency conversion, because the platform and the custodian source exchange rates independently. Tax-lot breaks are 57% data-entry errors, most often the wrong lot relieved on a partial sale.

Figure 3

Breaks by module and cause

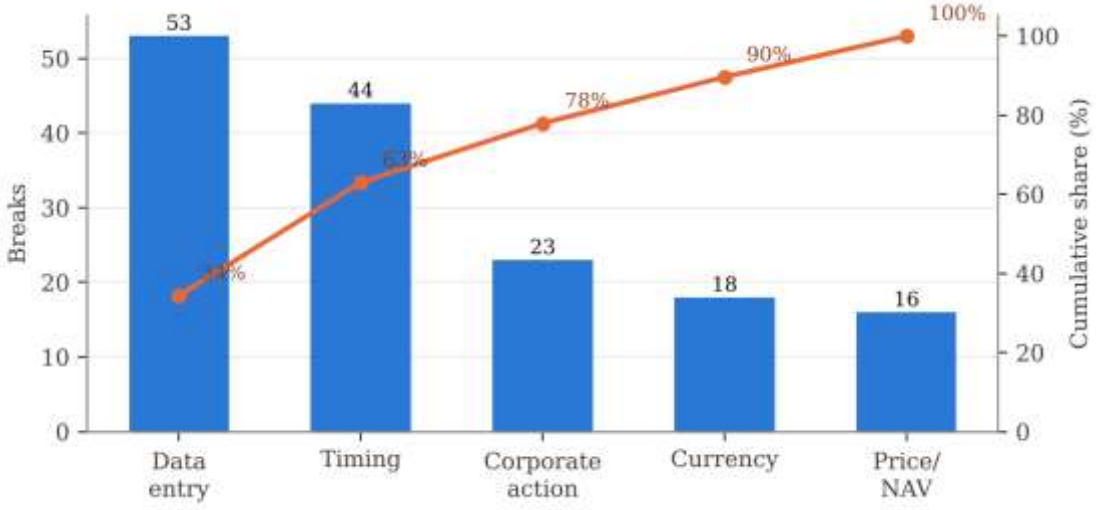


Note. Counts from the firm's aggregated operating data.

Pooling across modules, a Pareto view (Figure 4) shows that data-entry errors (53) and timing differences (44) account for 63% of all breaks; adding corporate actions raises the cumulative share to 78%. Three of the five cause categories are therefore enough to address most of the volume.

Figure 4

Pareto chart of break causes, all modules



Note. Author's computation. Bars show counts; the line shows the cumulative share.

4.4 Turnaround Time and Resolution Effort (H5)

Average turnaround ranged from 1.1 business days for mutual funds to 2.6 for tax lots (Table 5). Tax-lot breaks take longest because closing one means reconstructing the security's full acquisition history from several statements rather



than checking a single line. Because breaks are not equal in cost, multiplying breaks by average turnaround gives an effort proxy of 281.3 break-days in total. Tax lots generate the largest share (38.8%) from only 16.5% of transactions, and bank/cash adds 34.6%; together they absorb about 73% of resolution effort (Figure 5).

Table 5

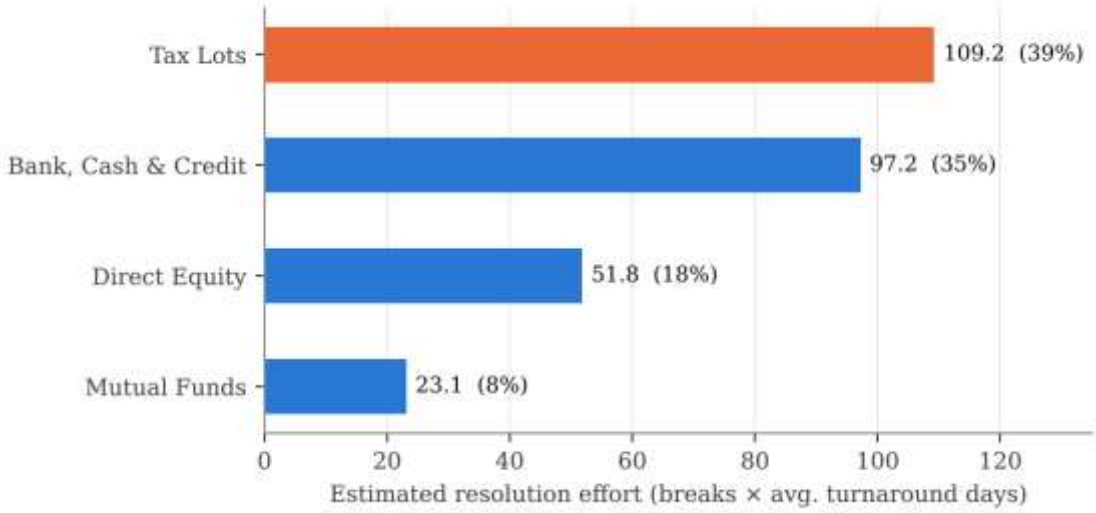
Turnaround and resolution effort by module

Module	Breaks	Avg. turnaround (days)	Break-days	Share of effort	Share of transactions
Direct equity	37	1.4	51.8	18.4%	28.3%
Mutual funds	21	1.1	23.1	8.2%	22.6%
Bank, cash & credit	54	1.8	97.2	34.6%	32.6%
Tax lots	42	2.6	109.2	38.8%	16.5%
Total	**154**	**1.83***	**281.3**	**100%**	**100%**

Note. *Break-weighted average (281.3 ÷ 154). Effort is a proxy that applies the module-average turnaround to every break in the module.

Figure 5

Estimated resolution effort by module (breaks × average turnaround days)

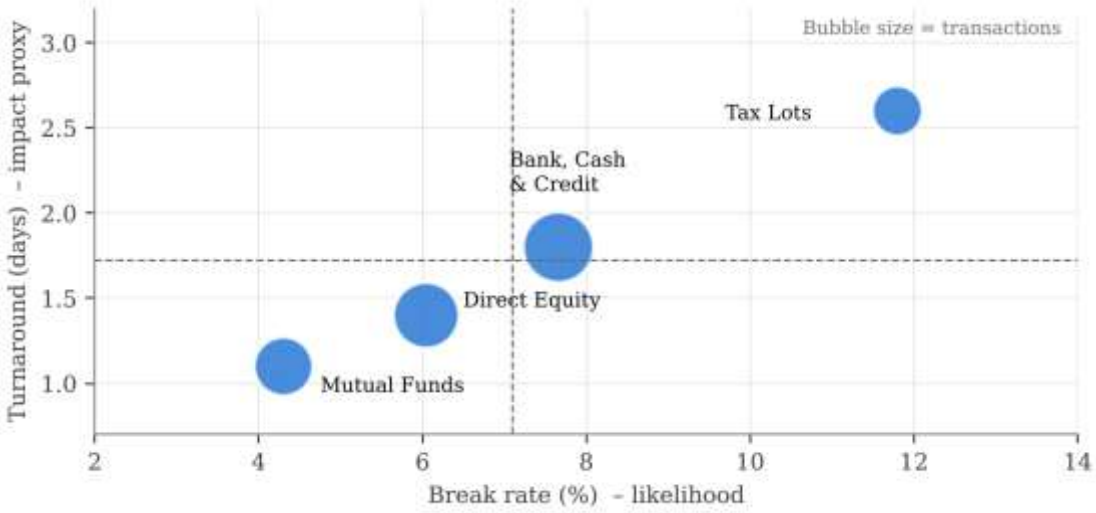


Note. Author's computation; see Table 5.

Figure 6 places the modules on a likelihood–impact map. Tax lots sit in the high-likelihood, high-impact corner and mutual funds are lowest on both. Across the four modules, break rate and turnaround are almost perfectly correlated (Pearson r = .999; Spearman ρ = 1.0). With n = 4, however, the exact two-sided permutation p-value for a perfect rank correlation is only .083, so H5 is supported descriptively rather than conclusively.

Figure 6

Likelihood–impact map of the four modules



Note. Author's construction. Bubble size is proportional to transactions; dashed lines mark the overall break rate and mean turnaround.

4.5 Trend in Break Rate (H3)

Table 6

Month-on-month break rate, all modules

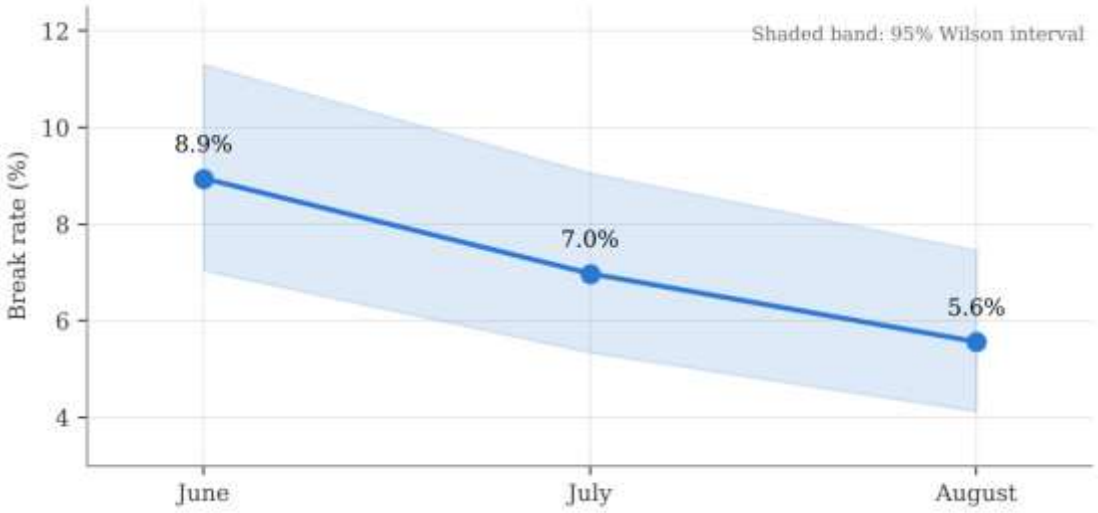
Month	Transactions	Breaks	Break rate	95% CI (Wilson)
June 2026	693	62	8.9%	7.0% – 11.3%
July 2026	731	51	7.0%	5.3% – 9.1%
August 2026	737	41	5.6%	4.1% – 7.5%

Note. Intervals computed by the author.

The break rate fell by about 1.7 percentage points a month (Figure 7). The Cochran–Armitage test confirms a significant downward trend, $z = -2.48$, $p = .013$, and August is significantly lower than June, $\chi^2(1) = 6.12$, $p = .013$, a relative reduction of 37.8%. H3 is supported. Because the process and platform did not change during the window, the most plausible explanation is a learning curve as each custodian's statement layout became familiar. This reading matches the operations team's observation that new joiners take four to six weeks to distinguish similar corporate actions across custodians, and it implies that part of the early break rate is avoidable through better onboarding material.

Figure 7

Monthly break rate with 95% Wilson interval



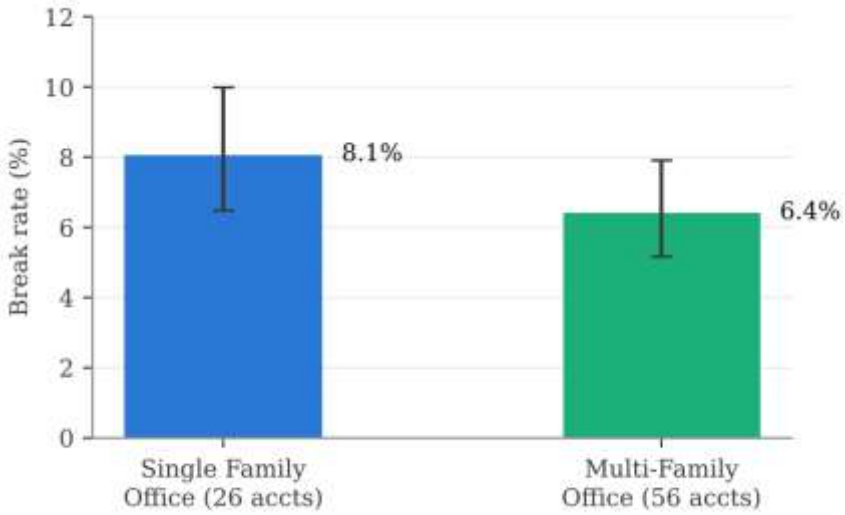
Note. Author's computation from the firm's aggregated operating data.

4.6 SFO Versus MFO Accounts (H4)

SFO accounts show a break rate of 8.1% (95% CI [6.5%, 10.0%]) against 6.4% ([5.2%, 7.9%]) for MFO accounts, in the expected direction because SFOs span more custodians and entities. However, the two-proportion z-test gives $z = 1.49$, $p = .137$, and the intervals overlap substantially (Figure 8). H4 is not supported: the sample cannot distinguish the two segments, and a larger sample would be needed to establish whether the gap is real.

Figure 8

Break rate for SFO and MFO accounts with 95% intervals



Note. SFO: 26 accounts, 929 transactions. MFO: 56 accounts, 1,232 transactions. Counts derived from reported rates.



4.7 Summary of Hypothesis Tests

Table 7

Summary of hypothesis tests

Hypothesis	Test	Statistic	p	Decision
H1: break rate differs by module	Chi-square (df = 3)	$\chi^2 = 19.0$	< .001	Supported
H2: break type depends on module	Chi-square (df = 12)	$\chi^2 = 70.9$	< .001	Supported*
H3: break rate declined over time	Cochran–Armitage	z = −2.48	.013	Supported
H4: SFO and MFO differ	Two-proportion z	z = 1.49	.137	Not supported
H5: higher break rate, longer turnaround	Pearson / Spearman (n = 4)	r = .999	.083†	Descriptive support

Note. *Low expected counts in some cells; structural zeros. †Exact two-sided permutation p for a perfect rank correlation with n = 4.

4.8 Financial Materiality of Breaks

Break counts treat a minor NAV error and a missing bonus issue as equivalent events. For a finance reader the relevant question is what each does to reported values. Table 8 compares three representative worked breaks that use simplified figures from the firm's process documentation.

Table 8

Worked examples of breaks and their size relative to the correct position

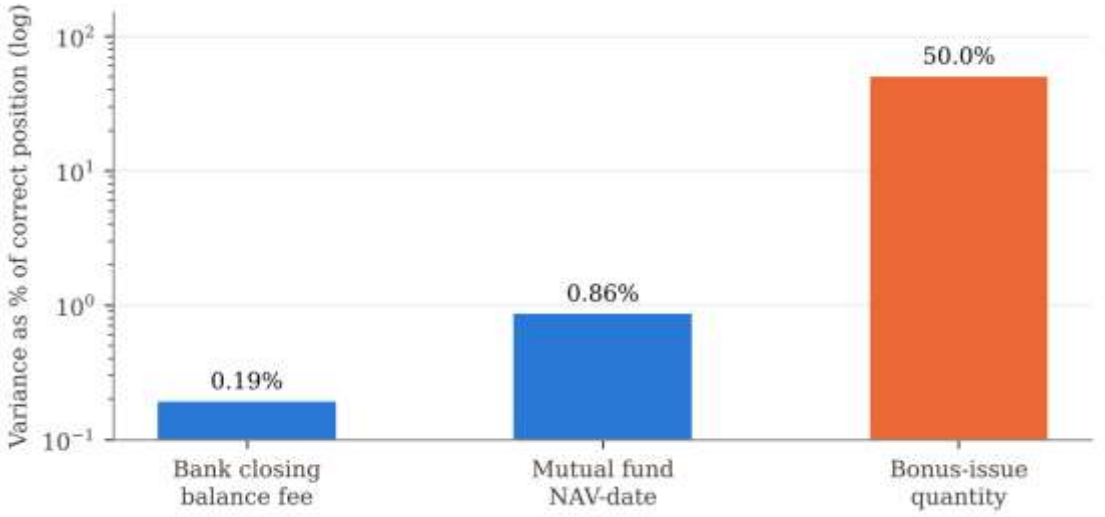
Break	Wrong value	Correct value	Variance	% of position
Bank closing balance (missed custodian fee)	$128,460	$128,215	$245	0.19%
Mutual fund NAV-date mismatch (5,000 units)	₹706,000	₹700,000	₹6,000	0.86%
Bonus-issue quantity (1:1 on 500 shares)	500 shares	1,000 shares	500 shares ≈ $37,000	50.0%

Note. Dollar value of the bonus break = 500 shares × $74 per share, implied by an illustrative consolidated account with net worth of $209,065.

The spread in materiality is large (Figure 9). The fee break is immaterial in percentage terms but still stops the cash balance tying, which is why a materiality threshold is used to separate genuine breaks from rounding noise. The bonus-issue break is different in kind: it halves the recorded equity quantity, and left unresolved it would understate the illustrative account's net worth by about $37,000, or 17.7%. This is the case for risk-weighting review effort rather than treating all breaks alike.

Figure 9

Variance as a percentage of the correct position for three worked breaks



Note. Logarithmic scale. Author's computation.

Tax-lot errors have a distinctive consequence because the lot relieved determines the taxable gain. The worked example holds three lots of one security (Table 9) and sells 450 shares at $58.00.

Table 9

Acquisition lots in the worked example

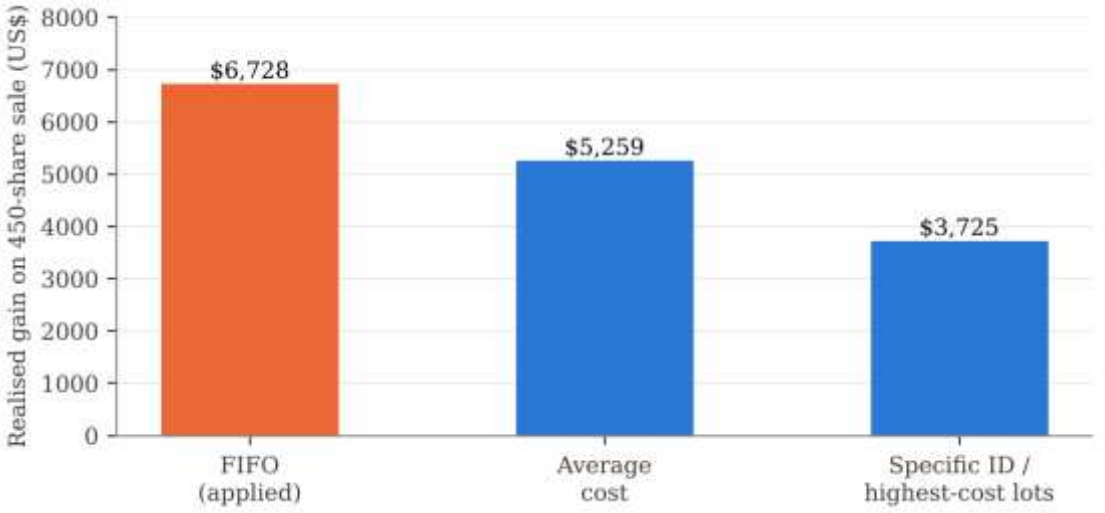
Lot	Acquisition date	Quantity	Cost per unit	Lot cost
Lot 1	12-Feb-2024	300	$41.20	$12,360
Lot 2	05-Sep-2024	200	$46.75	$9,350
Lot 3	18-Mar-2025	250	$52.10	$13,025
Total		**750**	**$46.31 (avg.)**	**$34,735**

Note. Totals and average computed by the author.

Under FIFO the sale relieves all of Lot 1 and 150 shares of Lot 2, giving proceeds of $26,100, cost of $19,372.50 and a realised gain of $6,727.50. Under average cost the gain would be $5,259.00, and if the highest-cost lots (Lot 3 and Lot 2) were specifically identified it would be $3,725.00 (Figure 10). The same sale therefore produces a gain $3,002.50, or 44.6%, lower under specific identification than under FIFO. Holding-period classification also depends on the sale date, which the example does not specify. Applying the wrong method or the wrong lot thus misstates taxable income, which explains why the tax-lot module, despite its lower volume, needs the most review.

Figure 10

Realised gain on the same 450-share sale under three cost-basis methods



Note. US$ at $58.00 per share. Author's computation from the lot data in Table 9.

5. Discussion

5.1 Interpretation of Findings

Three results stand out. First, errors are not uniformly distributed: the clearest finding is that tax lots are the problem module, and the cause is specific, namely data entry on partial sales. This agrees with the operational-risk view that review effort should follow likelihood and impact, not volume. Because tax lots handle only 16.5% of transactions but 38.8% of effort, allocating reviewer time by transaction count would under-resource them.

Second, the composition of breaks is module-specific, so a single generic checklist is unlikely to be efficient. Corporate-action calendars matter for equity, NAV-date checks for funds, settlement-date and rate conventions for cash, and lot registers for tax lots, which is consistent with the data-quality literature's emphasis on measuring quality in context.

Third, the fall in the break rate from 8.9% to 5.6% suggests that a substantial share of early breaks reflects familiarity rather than process design. This argues for structured onboarding aids for new joiners and cautions against attributing all later improvement to a new control. The non-significant SFO/MFO result is a reminder that plausible patterns should be tested: with 26 SFO accounts, the data cannot confirm the intuition that SFO complexity raises break rates. For finance practitioners the main message is that operational metrics such as break rate and turnaround should be read together with materiality measures.

5.2 Control Redesign and Scenario Analysis

The findings point to a mismatch between where errors arise and where the control sits. Corporate-action timing, currency-rate differences and tax-lot data entry together account for 65 of the 154 breaks (42%) and 136.4 of the 281.3 break-days (48.5%). Each is in principle detectable at entry (Table 10).



Table 10

Current detective control versus proposed preventive validation layer

Dimension	Current (detective)	Proposed (preventive plus detective)
Control point	After onboarding, during reconciliation	At data entry, before the record is saved
Corporate actions	Found as a quantity break	Cross-checked against a corporate-action calendar
Currency	Investigated as a break	Rate convention and tolerance applied automatically
Tax lots	History re-traced after the break	Open-lot register visible when a sale is recorded
Terminology	Personal cross-reference notes	Shared custodian-to-platform mapping table
Effort scales with	Number of breaks	Number of exceptions flagged

Note. Author's proposal.

To size the benefit, three scenarios assume that a validation layer prevents a given fraction of the addressable breaks before they reach reconciliation (Table 11, Figure 11). The reduction rates are assumptions, not measurements, chosen to span a cautious to an optimistic range; the results indicate order of magnitude only.

Table 11

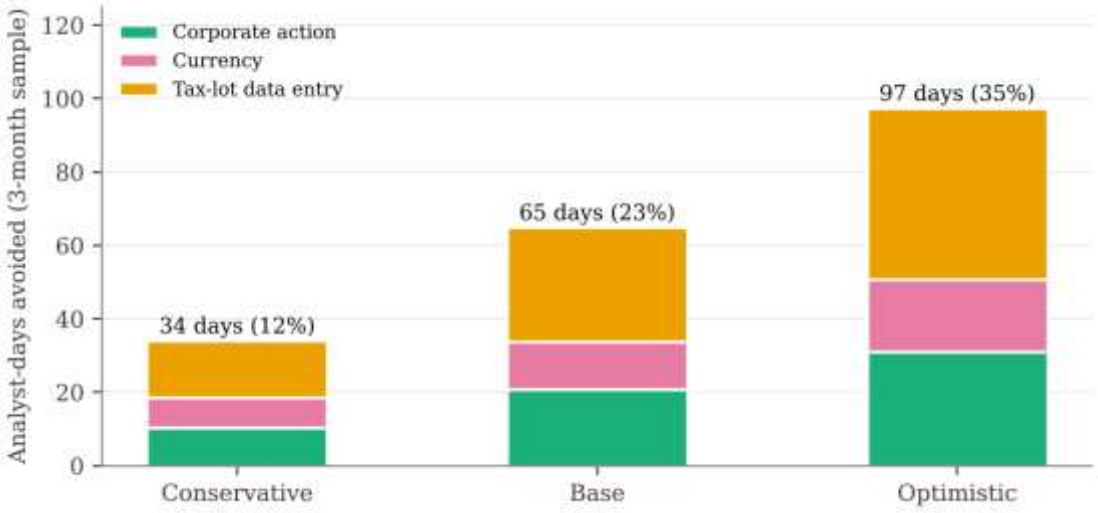
Scenario analysis of the validation layer on the three-month sample

Scenario	Reduction assumed (CA / FX / tax-lot entry)	Breaks avoided	Break rate after	Break-days avoided	Share of effort
Baseline	–	–	7.1%	–	–
Conservative	25% / 25% / 25%	16	6.4%	34.1	12.1%
Base	50% / 40% / 50%	31	5.7%	65.0	23.1%
Optimistic	75% / 60% / 75%	46	5.0%	97.4	34.6%

Note. Addressable break-days: corporate action (CA) 41.5, currency conversion (FX) 32.5, tax-lot data entry 62.4. Breaks avoided are rounded.

Figure 11

Analyst-days avoided under three scenarios



Note. Three-month sample. Reduction rates are assumptions.

Under the base case about 65 analyst-days, or 23% of effort, are avoided and the break rate falls from 7.1% to 5.7%. Converting this to money requires a loaded cost per analyst-day, which is internal to the firm; the decision rule is that the layer is worthwhile if the annualised value of days avoided exceeds its build and maintenance cost. A caution is needed: August's break rate (5.6%) already equals the base-case result, so part of any improvement credited to a new control could be achieved by experience alone. A pilot should therefore be benchmarked against an experienced-staff baseline, not against June. A phased rollout would limit risk: design the rules and a shared terminology table (months 1–2), pilot on bank/cash and tax lots (months 3–4), compare against the baseline (month 5), then extend to equity and funds (months 6–8), without changing the platform's ledger architecture.

5.3 Managerial Recommendations

First, introduce a preventive validation layer at the point of onboarding, beginning with tax lots and bank/cash, covering corporate-action calendar checks, currency-rate tolerances and incomplete lot-history flags. Second, maintain a live tax-lot register per security per client so the open lots and the client's designated method are visible when a sale is entered. Third, standardise custodian terminology in a shared mapping table so that, for example, differently named bonus events across custodians map to one transaction type. Fourth, allocate review effort by risk, weighting by materiality as well as break count, and apply an explicit materiality threshold to separate rounding noise from genuine breaks. Fifth, shorten the learning curve with a structured onboarding pack and a statement-layout guide for each custodian. Finally, evaluate any pilot with the same definitions used here.

5.4 Limitations and Future Research

The study rests on a single organisation, three months and 82 accounts, so the findings may not generalise to other platforms or custodians. Data are aggregated and illustrative because of confidentiality, and the worked examples use simplified representative figures. The effort measure applies a module-average turnaround to every break. The break-type chi-square has sparse cells, the H5 correlation rests on four observations, the SFO/MFO counts are derived from rounded percentages, and the scenario reduction rates are assumptions. The window is too short to reveal seasonality around corporate-action-heavy periods, and the author's own learning is confounded with any process effect. Future research could use break-level data to regress resolution time on break type, module and analyst experience; extend the window and the sample; test the validation layer in a controlled pilot; study AI-based statement extraction as a way to reduce manual onboarding; and add modules such as private equity.

6. Conclusion

This paper examined the onboarding and reconciliation of custodian data across four investment modules at a family-office WealthTech firm. Of 2,161 reconciled transactions, 154 (7.1%) produced breaks. Break rates and causes differ significantly by module; data-entry errors and timing differences explain most breaks; tax lots combine the highest break rate, the longest resolution time and the largest effort share; and the break rate fell significantly over three months. Worked examples show that the financial stakes of a break vary by orders of magnitude and that the cost-basis method alone can change a realised gain by almost half. The evidence supports shifting part of the control effort from after-the-



fact detection to preventive validation prioritised by risk. For finance students, the case shows how internal-control, operational-risk and cost-basis theory can be tested with operating data, and how reporting quality is ultimately an operational outcome.

Declarations

Conflict of interest: The author declares no conflict of interest. **Funding:** No external funding was received for this study. **Ethical approval:** The study used aggregated operational data containing no client-identifiable information, and no human participants were involved; confidentiality obligations were observed throughout.

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