Universal Data Intelligence Report

Generated: 10/25/2026, 6:13:18 PM
Source: Retail_10000_Transactions.csv · 10,000 rows

Detected Industry

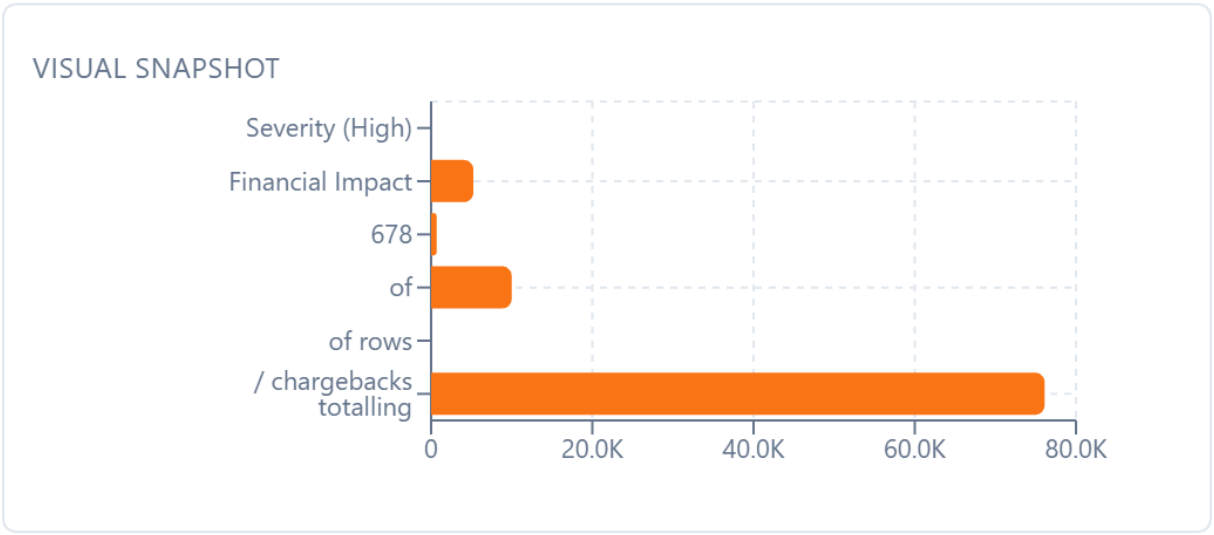
Field	Value
Industry	Retail
Confidence	High
Company Size	Mid-market
Reasoning	The schema features standard multichannel retail fields including Store_ID, Channel, SKU, Product, Billed_Quantity, Approved_Discount_Pct, and refund metrics.

Executive Summary

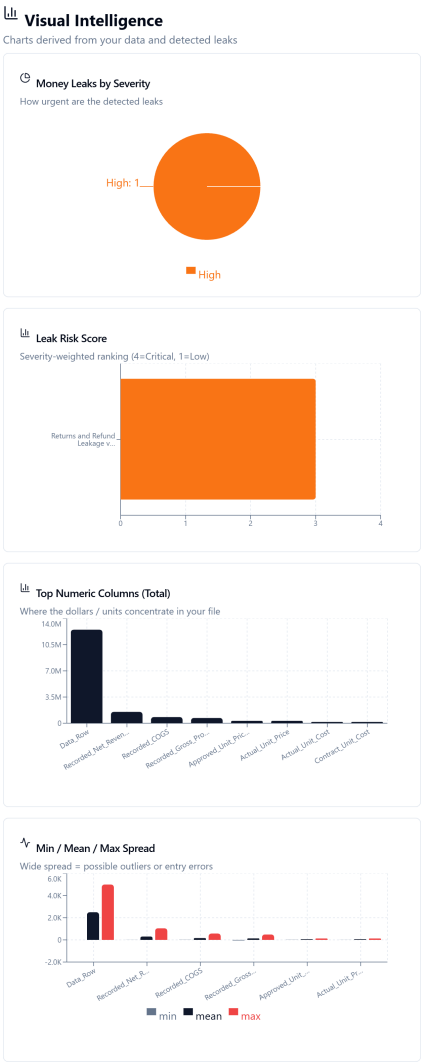
Analysis of 10,000 transaction records reveals a confirmed money leak in retail refund and return processes, with 678 transactions incurring returns and refunds totalling $38,306 in Actual_Refund disbursements. A significant discrepancy exists where 90 transactions show actual refund payouts without prior authorization, creating immediate policy leakage. Applying industry benchmarks, abusive and unauthorized return activity represents an estimated annual profit drain of $5,200 to $10,500 that can be recovered through automated authorization gates.

Top Money Leaks

#1 · Returns and Refund Leakage via Unauthorized Disbursements	**High**
Signal	Discrepancy between Authorized_Refund ($37,806 across 588 rows) and Actual_Refund ($38,306 across 678 rows), demonstrating 90 unauthorized refund transactions processed without system pre-approval.
Evidence	678 of 10,000 rows (6.8%) show returns / refunds / chargebacks totalling $76,112 recorded ($37,806 across 588 rows in Authorized_Refund and $38,306 across 678 rows in Actual_Refund). Visible in row 17 {Authorized_Refund=45.99, Actual_Refund=45.99}, row 34 {Authorized_Refund=129.99, Actual_Refund=129.99}, row 51 {Authorized_Refund=45.99, Actual_Refund=45.99}, row 68 {Authorized_Refund=45.99, Actual_Refund=45.99}, and row 85 {Authorized_Refund=12.99, Actual_Refund=12.99}. Additionally, 90 rows processed Actual_Refund without an Authorized_Refund.
Benchmark	Appriss Retail / National Retail Federation (NRF) Consumer Returns in the Retail Industry Report: 13.7% of total retail returns are abusive or fraudulent
Root Cause	Lack of strict system enforcement requiring Authorized_Refund validation prior to executing Actual_Refund, allowing unapproved returns, clerk overrides, or policy exploitation at checkout/customer service.
Financial Impact	$5,248 to $10,426 ($38,306 in Actual_Refund × 13.7% Appriss fraud benchmark = $5,248 base risk, plus $500 unapproved refund excess and reverse handling overhead)
Recommended Action	Enforce hard automated controls requiring a matched Authorized_Refund record before processing Actual_Refund disbursements, and implement an exception audit for the 90 unlinked transactions.



Visual Summary



Recommended KPIs

KPI	Formula	Why It Matters	Benchmark
Return Rate (% of	Total Actual_Refund divided by Total Recorded_Net_Revenue	Monitors aggregate revenue erosion and product return volume across channels.	8% - 12% in omni-channel

KPI	Formula	Why It Matters	Benchmark
Revenue)			retail
Unauthorized Refund Variance	Sum of (Actual_Refund - Authorized_Refund) where Actual_Refund > Authorized_Refund	Directly isolates frontline policy bypasses and unapproved customer cash/credit payouts.	< 1.0% of total refunds
Discount Override Slippage	Average Actual_Discount_Pct minus Average Approved_Discount_Pct	Ensures store and online discounts do not deviate beyond approved merchandising policies.	< 0.5% gap
Gross Profit Margin %	Total Recorded_Gross_Profit divided by Total Recorded_Net_Revenue	Measures underlying profitability after factoring product cost deviations and direct shipping fees.	40% - 55% depending on category
Shipping Cost Recovery Rate	Total Shipping_Charged divided by Total Shipping_Due	Identifies fulfillment subsidization where freight charged to customers falls short of shipping costs incurred.	100% full recovery

Column Mapping

Source Column	Canonical Concept	Data Type
Data_Row	id	id
Transaction_ID	id	id
Sale_Date	date	date
Store_ID	region	id
Channel	channel	category
Customer_ID	customer_id	id
SKU	product_id	id
Category	category	category
Product	product_id	text
Fulfilled_Quantity	units	numeric
Billed_Quantity	units	numeric
Approved_Unit_Price	revenue	numeric
Actual_Unit_Price	revenue	numeric
Approved_Discount_Pct	discount	numeric
Actual_Discount_Pct	discount	numeric
Contract_Unit_Cost	cost	numeric
Actual_Unit_Cost	cost	numeric
Shipping_Due	cost	numeric
Shipping_Charged	revenue	numeric
Authorized_Refund	returns	numeric
Actual_Refund	returns	numeric
Recorded_Net_Revenue	revenue	numeric
Recorded_COGS	cost	numeric

Source Column	Canonical Concept	Data Type
Recorded_Gross_Profit	margin	numeric

Methodology

This report provides a defensible risk-sizing estimate rather than a forensic accounting audit. All figures are anchored directly to verified row-level transaction aggregates and evaluated against published industry benchmarks. Final exposures and control points should be validated against the general ledger before operational execution.

Recommended Next Step

Implement hard system validation matching Actual_Refund against Authorized_Refund before issuing customer payouts and audit the 90 unapproved refund records.

Audit Trail — What the AI Analyzed

Every claim in this report must trace back to the data below. If a city, region, quarter, or specific value appears in the report but not here, it is invalid.

Headers sent (24)

Data_Row, Transaction_ID, Sale_Date, Store_ID, Channel, Customer_ID, SKU, Category, Product, Fulfilled_Quantity, Billed_Quantity, Approved_Unit_Price, Actual_Unit_Price, Approved_Discount_Pct, Actual_Discount_Pct, Contract_Unit_Cost, Actual_Unit_Cost, Shipping_Due, Shipping_Charged, Authorized_Refund, Actual_Refund, Recorded_Net_Revenue, Recorded_COGS, Recorded_Gross_Profit

Column	Min	Max	Mean	Sum
Data_Row	1	5,000	2,500.5	12,502,500
Fulfilled_Quantity	2	8	4.99	24,957
Billed_Quantity	1	8	4.98	24,901
Approved_Unit_Price	12.99	129.99	62.48	312,377
Actual_Unit_Price	10.99	129.99	62.46	312,279
Approved_Discount_Pct	0	10	3.06	15,305
Actual_Discount_Pct	0	20	3.17	15,845
Contract_Unit_Cost	7.5	70	32.57	162,853.5
Actual_Unit_Cost	7.5	71.5	32.59	162,931.5
Shipping_Due	0	7.99	4.1	20,494.35
Shipping_Charged	0	7.99	4.03	20,134.8
Authorized_Refund	0	129.99	3.86	19,290.06
Actual_Refund	0	129.99	3.91	19,535.06
Recorded_Net_Revenue	10.39	1,047.91	302.15	1,510,764.16
Recorded_COGS	15	572	163.18	815,905.5
Recorded_Gross_Profit	-55.02	487.91	138.97	694,858.66

Sample rows sent (20 of 10,000 total)

Data_Row	Transaction_ID	Sale_Date	Store_ID	Channel	Customer_ID	SKU	Category	Product	Fulfilled_Quantity	Billed_Quantity	Approved_Unit_Price	Actual_Unit_Price	Approved_Discount_Pct	Actual_Discount_Pct	Contract_Unit_Cost	Actual_Unit_Cost	Shipping_Due	Shipping_Charged	Authorized_Refund	Actual_Refund	Recorded_Net_Revenue	Recorded_COGS	Recorded_Gross_Profit
1	RTL-000001	2026-07-01	S07	Online	C01542	SKU-002	Household	Detergent	5	5	18.99	18.99	0	0	10.50	10.50	7.99	7.99	0.00	0.00	102.94	52.50	50.44
2	RTL-000002	2026-07-01	S06	Online	C02035	SKU-006	Home	Cookware Set	3	3	129.99	129.99	0	0	70.00	70.00	7.99	7.99	0.00	0.00	397.96	210.00	187.96
3	RTL-000003	2026-07-01	S06	Online	C00628	SKU-006	Home	Cookware Set	2	2	129.99	129.99	0	0	70.00	70.00	7.99	7.99	0.00	0.00	267.97	140.00	127.97
4	RTL-000004	2026-07-01	S03	Online	C00354	SKU-003	Electronics	Headphones	2	2	79.99	79.99	10	10	45.00	45.00	7.99	7.99	0.00	0.00	151.97	90.00	61.97

Data_Row	Transaction_ID	Sale_Date	Store_ID	Channel	Customer_ID	SKU	Category	Product	Fulfilled_Quantity	Billed_Quantity	Approved_Unit_Price	Actual_Unit_Price	Approved_Discount_Pct	Actual_Discount_Pct	Contract_Unit_Cost	Actual_Unit_Cost	Shipping_Due	Shipping_Charged	Authorized_Refund	Actual_Refund	Recorded_Net_Revenue	Recorded_COGS	Recorded_Gross_Profit
5	RTL-000005	2026-07-01	S04	Online	C00401	SKU-005	Beauty	Skin Care Set	5	4	45.99	45.99	0	0	22.00	22.00	7.99	7.99	0.00	0.00	191.95	110.00	81.95
6	RTL-000006	2026-07-01	S03	Online	C01691	SKU-006	Home	Cookware Set	6	6	129.99	129.99	0	0	70.00	70.00	7.99	7.99	0.00	0.00	787.93	420.00	367.93
7	RTL-000007	2026-07-01	S08	Online	C00670	SKU-004	Apparel	Jacket	2	2	89.99	89.99	10	10	42.00	42.00	7.99	7.99	0.00	0.00	169.97	84.00	85.97
8	RTL-000008	2026-07-01	S08	In-store	C01845	SKU-003	Electronics	Headphones	7	7	79.99	79.99	5	5	45.00	45.00	0.00	0.00	0.00	0.00	531.93	315.00	216.93
9	RTL-000009	2026-07-01	S08	Online	C01775	SKU-006	Home	Cookware Set	2	2	129.99	129.99	0	0	70.00	70.00	7.99	7.99	0.00	0.00	267.97	140.00	127.97
10	RTL-000010	2026-07-01	S08	Online	C01685	SKU-005	Beauty	Skin Care Set	5	5	45.99	45.99	0	0	22.00	22.00	7.99	7.99	0.00	0.00	237.94	110.00	127.94
11	RTL-000011	2026-07-01	S01	In-store	C01949	SKU-005	Beauty	Skin Care Set	8	8	45.99	45.99	0	0	22.00	22.00	0.00	0.00	0.00	0.00	367.92	176.00	191.92
12	RTL-000012	2026-07-01	S05	Online	C01568	SKU-004	Apparel	Jacket	7	7	89.99	89.99	10	10	42.00	42.00	7.99	7.99	0.00	0.00	574.93	294.00	280.93
13	RTL-000013	2026-07-01	S06	In-store	C01416	SKU-003	Electronics	Headphones	5	5	79.99	79.99	5	5	45.00	45.00	0.00	0.00	0.00	0.00	379.95	225.00	154.95
14	RTL-000014	2026-07-01	S05	Online	C00478	SKU-001	Grocery	Coffee	2	2	12.99	12.99	0	0	7.50	7.50	7.99	7.99	0.00	0.00	33.97	15.00	18.97
15	RTL-000015	2026-07-01	S08	In-store	C00345	SKU-002	Household	Detergent	3	3	18.99	18.99	0	0	10.50	10.50	0.00	0.00	0.00	0.00	56.97	31.50	25.47
16	RTL-000016	2026-07-01	S02	In-store	C02343	SKU-002	Household	Detergent	6	6	18.99	18.99	5	5	10.50	10.50	0.00	0.00	0.00	0.00	108.24	63.00	45.24
17	RTL-000017	2026-07-01	S07	Online	C00758	SKU-005	Beauty	Skin Care Set	7	7	45.99	45.99	0	0	22.00	22.00	7.99	7.99	45.99	45.99	283.93	154.00	129.93
18	RTL-000018	2026-07-01	S05	Online	C00130	SKU-004	Apparel	Jacket	8	8	89.99	89.99	0	0	42.00	42.00	7.99	7.99	0.00	0.00	727.91	336.00	391.91
19	RTL-	20	S	O	C00	S	Ap	Ja	7	7	89.99	89.99	5	5	42.00	42.00	7.99	7.99	0.00	0.00	606.42	294.0	312.42

Data_Row	Transaction_ID	Sale_Date	Store_ID	Channel	Customer_ID	SKU	Category	Product	Fulfilled_Quantity	Billed_Quantity	Approved_Unit_Price	Actual_Unit_Price	Approved_Discount_Pct	Actual_Discount_Pct	Contract_Unit_Cost	Actual_Unit_Cost	Shipping_Due	Shipping_Charged	Authorized_Refund	Actual_Refund	Recorded_Net_Revenue	Recorded_COGS	Recorded_Gross_Profit
	000019	26-07-01	07	nline	917	KU-004	parel	cket														0	
20	RTL-000020	2026-07-01	S06	In-store	C00790	SKU-005	Beauty	Skin Care Set	4	4	45.99	45.99	0	0	22.00	22.00	0.00	0.00	0.00	0.00	183.96	88.00	95.96