



Experiment 7

Aim: Analyse Financial Balance Sheet, Cash flows and Profit & Loss.

Balance Sheet Items Forecast using Rebates Payable estimation

Theory: The balance sheet and the profit and loss (P&L) statement are two of the three financial statements companies issue regularly. Such statements provide an ongoing record of a company's financial condition and are used by creditors, market analysts and investors to evaluate a company's financial soundness and growth potential. The third financial statement is called the cash-flow statement.

Balance Sheet

A balance sheet reports a company's assets, liabilities and shareholder equity at a specific point in time. It provides a basis for computing rates of return and evaluating the company's capital structure. This financial statement provides a snapshot of what a company owns and owes, as well as the amount invested by shareholders.

The balance sheet shows a company's resources or assets, and it also shows how those assets are financed—whether through debt under liabilities or by issuing equity as shown in shareholder equity. The balance sheet provides both investors and creditors with a snapshot of how effectively a company's management uses its resources. Just like the other financial statements, the balance sheet is used to conduct financial analysis and to calculate financial ratios. Below are a few examples of the items on a typical balance sheet.

Profit and Loss (P&L) Statement

A P&L statement, often referred to as the income statement, is a financial statement that summarizes the revenues, costs, and expenses incurred during a specific period of time, usually a fiscal year or quarter. These records provide information about a company's ability (or lack thereof) to generate profit by increasing revenue, reducing costs, or both. The P&L statement's many monikers include the "statement of profit and loss," the "statement of operations," the "statement of financial results," and the "income and expense statement."

Balance Sheet Items Forecast using Rebates Payable estimation produces diverse paper which it sales to retailers, publishers and commercial printers both through its own sales team and through the external agents. External agents have an advantage of being paid rebates periodically. Amounts of rebates are significant and being paid periodically (monthly, quarterly, etc.) make sufficient accrued balances at the end of each period. So it perfectly make sense to estimate those balances of accrued and unpaid rebates for the purpose of cash flow management.

Use regression analysis over historical data in order to estimate rebates balances in the future.



Lab Experiment to be done by students:

1. Import Python Library package Statsmodels which helps to explore data, estimate statistical models, and perform statistical tests.
2. Read historical data on rebates payable and sales
3. Since the size of commission depends from sales revenue. Prepare data series and calculate correlation between rebate and sales.
4. Improve the model in order to increase the predictive power of the model to test different lagging for commission balance against sales and see which will return highest correlation coefficient.
5. Generate datasets with rebates payable lagged and put all datasets in a list
6. Finding the lag providing the best result
7. Brining additional variables to improve the predictive power of the model by implementing Multiple Regression
8. Split Dataset with coefficients for prediction of rebates balances in the future.
9. Compare predicted balances with actuals.