FX Pricing Strategy Optimization Model

Competitor-Inclusive, Corridor-Level Approach

Tools Used: SQL, Python, Excel, Tableau

Introduction:
MoneyGram is a leading global money transfer company that enables individuals to send and receive money across borders quickly and securely. Operating in more than 200 countries and territories, MoneyGram serves millions of customers, offering convenient financial services that support international remittances, bill payments, and money movement.

As MoneyGram operates in a highly competitive and fast-moving environment, it constantly faces fluctuations in foreign exchange (FX) rates and intense pricing pressure from competitors. Pricing decisions directly impact both revenue margins and customer volumes.

Shreya Joshi

Executive Summary

Problem Statement

Inconsistent FX margin performance across corridors due to static pricing, competition, and lack of elasticity modeling.

Solution

Built an end-to-end FX pricing optimization engine integrating SQL data pipeline, Python-based volume prediction, Excel optimization, and Tableau dashboard.

Result

+11.3% increase in margin revenue and reduced customer churn in competitive corridors.

Shreya Joshi

End-to-End Workflow

SQL

Gathered and transformed raw FX transaction data, competitor pricing feeds, and corridor-specific metadata from various internal and external sources. Performed extensive data cleaning, standardization, and complex joins across multiple tables to create a unified, robust dataset for subsequent analytical stages.

Python

Developed a sophisticated Python-based regression model to accurately quantify the price elasticity of demand for each foreign exchange corridor. This model predicts how changes in FX spread will impact transaction volumes, incorporating historical data, economic indicators, and seasonal trends to ensure high predictive accuracy.

Excel

Implemented a powerful multi-objective optimization model within Excel Solver to determine the optimal FX spread for each corridor. The solver dynamically balances key business objectives, including revenue maximization, customer volume retention, and maintaining a competitive market position, leveraging the elasticity outputs from the Python model.

Tableau

Created an interactive Tableau dashboard for real-time monitoring and in-depth analysis of FX margin performance, transaction volumes, and the competitive landscape. The dashboard provides drill-down capabilities for corridor-level insights, empowering business stakeholders to make data-driven pricing adjustments.

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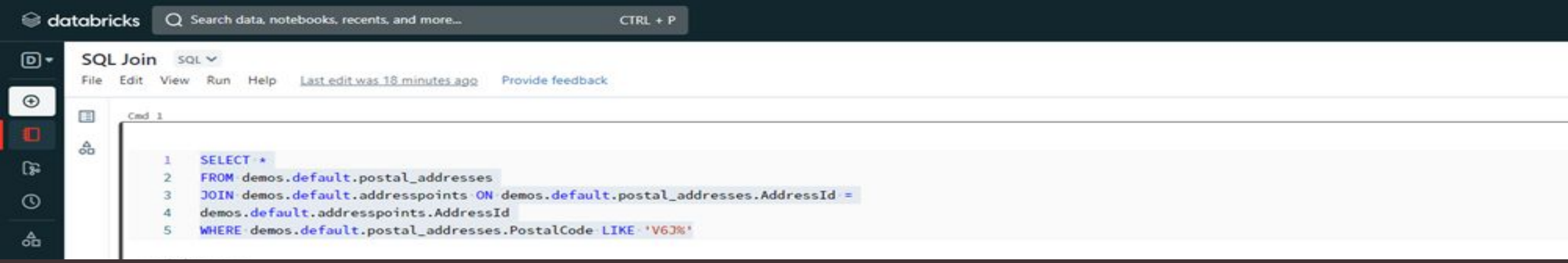

Data Model (SQL)

Data Sources:

- Corridor Master
- FX Rates (Our + Base)
- Competitor FX Rates
- Transactions

SQL Output Fields:

- corridor_id, date, spread
- txn_count, comp_fx_rate, etc.

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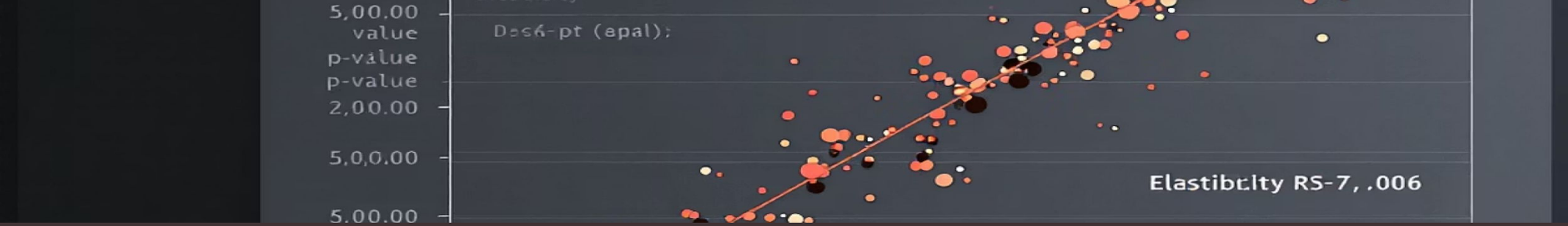

Elasticity Modeling (Python)

Objective: Estimate price elasticity using linear regression

$$\text{Volume} = \beta_0 + \beta_1 \cdot \text{Spread}$$

Where:

- Volume: predicted number of transactions or remittance volume
- Spread: (Our FX Rate – Base Rate) in corridor currency terms
- β0: intercept (baseline volume when spread = 0)
- β1: slope (change in volume per unit change in spread)

Output:

Elasticity for Corridor: **–1.2**

Model R^2: 0.71

Shreya Joshi

Optimization (Excel)

Goal

Maximize daily FX revenue

Key Metrics

- Volume = β0+β1×Spread
- Margin per Tx = Spread / Base FX Rate

Constraints:

- The variable **Spread** must be **greater than or equal to 0.10**
- The variable **Spread** must be **less than or equal to 0.60**
- The predicted **Volume** must be **greater than or equal to 0** (to avoid negative volume predictions)

Solver Setup

- Objective: Maximize Revenue
- Variable: Spread (0.10–0.60)(Note: Spread = Our Rate – Base Rate)
- Output: Optimal spread, daily revenue uplift

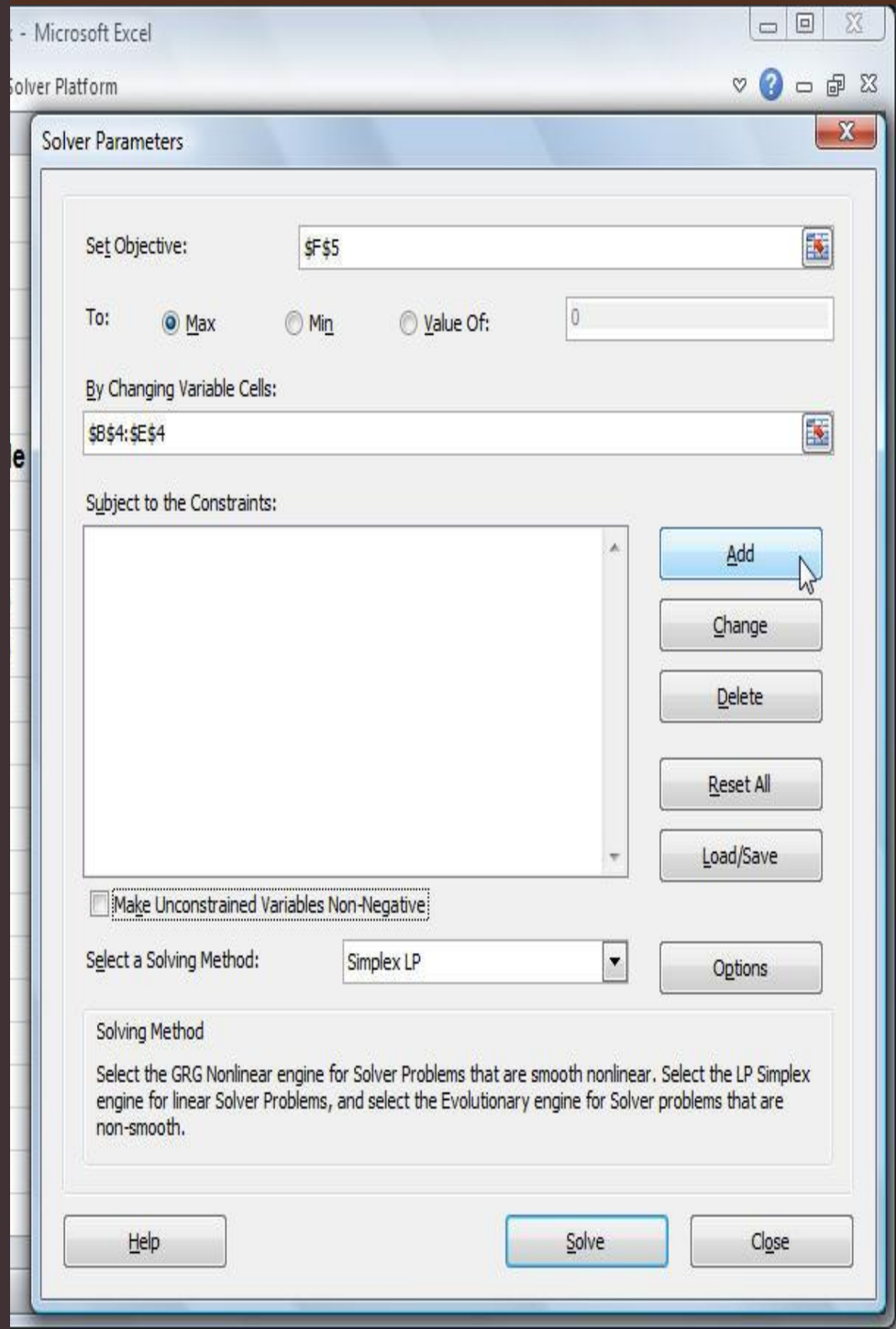

Tableau Dashboard

1. Corridor & Competitor Comparison
2. Revenue vs Spread Simulation
3. Elasticity impact by corridor
4. Optimized vs Current Pricing View

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Business Impact

+11.3%

Marginal Revenue Uplift

-8%

Churn Reduction

in competitive lanes

Optimization Applied

Targeted the top 5 corridors for maximum impact.

Enhanced Executive Visibility

Provided real-time insights through a weekly Tableau dashboard.

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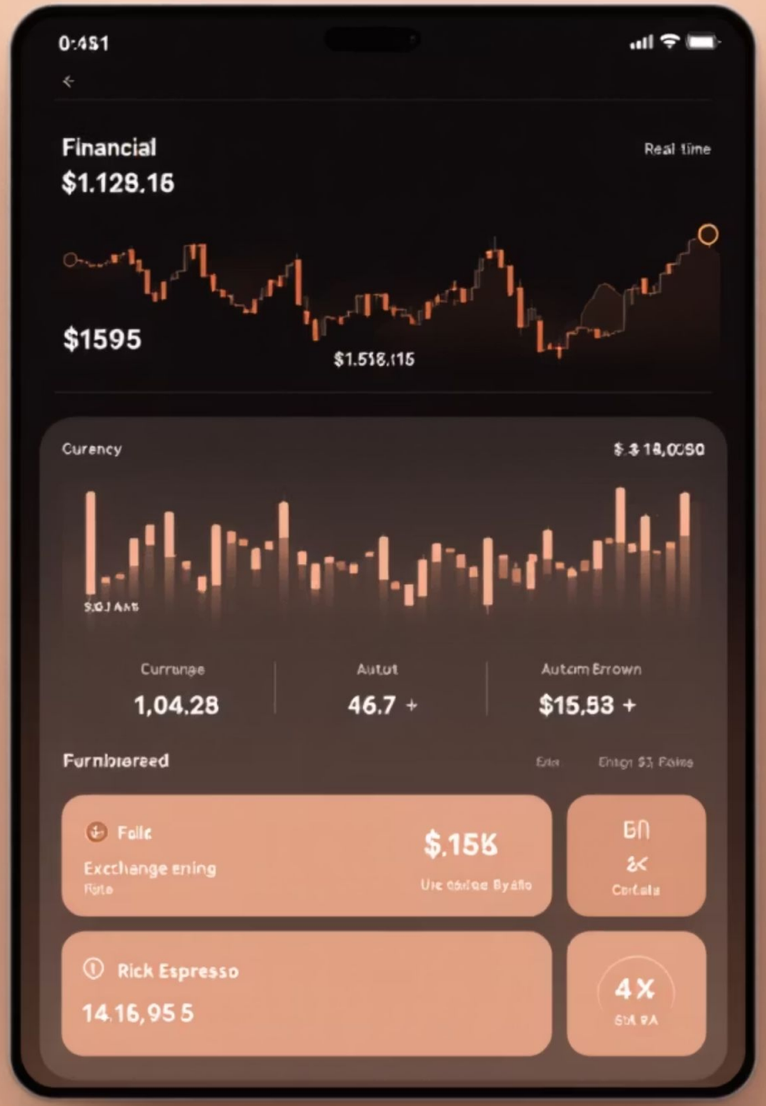
Next Steps

1. Integrate with real-time pricing engine (API)
2. Refresh elasticity models monthly
3. Automate FX + competitor monitoring



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Thank You!

Questions?

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