



XPortfolio Project

Enhancing Functionality for Business Management

A Major Qualifying Project Report

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This is a condensed report of the “XPortfolio Project: Enhancing Business Functionality for Business Management” Major Qualifying Project sponsored by The Royal Bank of Scotland. The recommendations devised for the firm cannot be disclosed due to confidentiality agreement with the sponsors.

1. Introduction

The foreign exchange market is one of the biggest and most liquid financial markets in the world with an average daily turnover of \$3.2 trillion for traditional foreign exchange instruments and of \$2.1 trillion for OTC derivatives in April 2007. In the FX market counterparties, including large corporations, central banks and governments, typically purchase a quantity of one currency in exchange for paying a quantity of another currency.

The foreign exchange market is the financial market that best qualifies as an example of perfect competition. FX trading runs almost 24/7 (with a few hours off on weekends) around the globe as coverage is transferred smoothly between the three major centers – London, New York and Tokyo. London is by far the frontrunner, estimated at handling around \$1.36 trillion, or 34.1% of the total daily foreign exchange market. Currency trading is also highly efficient and liquid with the bid (buy) – ask (sell) spread often cited in one-digit pips (the smallest unit by which a currency may change value, usually 1 pip = 1 basis point = 0.0001).

Financial instruments in the FX market relevant to this MQP are classified in the following categories:

- **Spot:** A spot transaction is a direct exchange between two currencies, settled in cash usually two days after the trade date.
- **Forward:** A forward transaction involves a contract between the counterparties to exchange a set amount of one currency for a set amount of another currency at a specific exchange rate at a future date.

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- Option: An FX option gives its holder the right but not the obligation to exchange a set amount of one currency for a set amount of another currency at a pre-agreed rate (strike price) at a specified date (expiry date). For example, the right to buy £1,000,000 in exchange for \$2,000,000 on 31 July 2009 is described as a GBP Call/ USD Put with a strike rate of 2.00.

As the main focus of this MQP is on the Royal Bank of Scotland's FX Options team, we will provide more in-depth information about the FX options. The FX options market is the most liquid of all options markets and the fastest growing – increasing by 71% from April 2004 to April 2007. The United Kingdom is the leading country for over-the-counter derivatives trading with a share of 42.5% of worldwide sales, followed by the United States with a share of 23.8%.

FX options are used for both hedging and speculative purposes. If a company has an overseas revenue-generating business unit, it might want to hedge its risk by purchasing an option. Alternatively, if the company has a view on the spot rate direction and wishes to participate in the movement, it can do that again by purchasing an option.

The RBS FX Options team is highly recognized among its industry peers for its expertise in pricing complex products and their mechanics as well as its capacity of handling a large flow of simpler, “commoditized” products. In the following section we will introduce you to the sequence of operations that take place in the FX Options team and which is the foundation of the RBS FX business.

2. Background Research

2.1. The Royal Bank of Scotland

The Royal Bank of Scotland Group is a banking and insurance holding company based in Edinburgh, UK. It includes the Royal Bank of Scotland Plc which was founded in 1727 by a Royal Charter of King George I and it also owns the Citizens Financial Group in the USA. The RBS Group is the largest banking group in Scotland and when it was at its peak it was ranked as the second largest in Europe. Its stock is listed primarily on the London Stock Exchange. The RBS Group is involved in various financial and banking services: it offers personal and business banking, private banking, insurance and corporate finance throughout its operations located in Europe, North America and Asia. In October 2008 the British government took a stake of 58% in a move aimed at recapitalizing the bank which had earlier in the year been hit by severe losses and write-downs.

2.2. The Life of an FX Trade

The flowchart below presents the chain of events in the life of a trade – from the very beginning when it is only a vague concept for the customer all the way to its execution and settlement. In these steps numerous people get involved but they can be broadly classified in the following groups: relationship managers, salespeople, structurers and traders. Each of these stages is described into more details in the following subsections explaining the rationale behind RBS's decision to sponsor this MQP and our approach to it.

2.2.1. Relationship Managers

A relationship manager (RM) is a broadly trained representative of RBS, responsible for meeting businesses and presenting potential business solutions RBS has to offer. RMs are dispersed throughout the country, instead of being centralized as the salespeople, and their primary objective is to evaluate the customers' business. If it is exposed to the FX markets and if there are any prospects for potential business for RBS, the respective salesperson is notified.

2.2.2. Salespeople

There are several general approaches that each salesperson has at his or her disposal to offer services to the portfolio of customers covered:

- A customer can approach their salesperson with a specific trading request and ask for a price quote. Depending on the complexity of the trade, the salesperson can provide a quote, or consult the structuring team.
- A customer can approach the salesperson with a problem arising from exposure to FX risk and ask for a solution. Depending on the complexity of the trade, salespeople price a quote or further discuss the customers' business needs with the structuring team to provide a customized trade.
- A salesperson that has a good understanding of all their customers' business and positions in the market will contact their customers with potential deals in regards to any spot movements in favor of the client's business.
- In case the spot rate moves against the customer's position the salesperson can propose to restructure the trade, thus renewing the customer's cash flows.

2.2.3. Structurers

The structurers serve three different roles within the FX options team on a global level.

- Act as consultants to the salespeople, as the salespeople structure options to find optimal solutions to their currency exposures.
- Price exotic options, which cannot be calculated by the generic calculators, with complex scripts.
- Enter trades accurately into the banks booking systems.

2.2.4. Traders

With each option sold to counterparty, RBS faces exposure to a related spot direction. It is the traders' task to hedge against that position in the market through broker and inter-bank deals. To generate income for the firm traders can also speculate in the market.

2.2.5. Middle Office/ Back Office

Once a trade is agreed upon by both counterparties and booked into the RBS systems, Middle Office and Back Office mitigate operational risk and ensure that each deal is in compliance with industry regulations.

- Trade Matching: On trade date (T), middle office ensures all trades are matched and are flowing downstream in the systems.

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- **Trade review:** The trade review team checks trade details for discrepancies amongst how a trade is booked and how it should be booked. Any discrepancies are raised to front office.
 - **Drafting:** A confirmation is drafted in order to ultimately represent all the features of a trade. A trade confirmation is the final legally binding document; hence all trade details must be accurate when it is sent to the counterparty.
 - **Retrievals:** Once a confirmation is sent to the counterparty, it must be signed and returned to retrievals. If the counterparty does not agree with certain trade details and refuses to sign the confirmation, the retrievals team deals with the discrepant trade details.
 - **Settlements:** This team handles the cash flows upon each expiry for trades. They monitor the systems to ensure RBS accounts are flat at end of day.
 - **Valuations:** The valuations team provides customers with monthly mid-market valuation reports regarding all their positions with RBS.

3. Statement of the Problem

XPortfolio has proved to be a highly versatile and practical application for the purposes of salespeople, structurers and management through the use of its reporting tool. However, the constantly shifting market conditions necessitate a tool that allows for swift assessment of business; an objective which can be best achieved through adding new metrics and displaying aggregated information in innovative ways.

4. Recommendations

This section is not presented due to confidentiality agreement.

5. Conclusion

XPortfolio is a highly capable and convenient reporting tool that has provided an immense edge to RBS FX Options business. In the future XPortfolio will be able to capture and compare risk measurements, performance metrics and correlations between market movements and trade details. XPortfolio will also be able to eliminate users' downtime and will provide valuable insight on potential business opportunities within the RBS Currency Options group.

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