# INTRODUCTION

## The OTS Net Portfolio Value Model

This manual describes the OTS Net Portfolio Value (NPV) Model. The manual provides an overview of the NPV Model for those interested in a general understanding of how the model works, as well as a detailed description for those interested in a more technical explanation.

## Outline of the Manual

Chapters 1-3 are directed at readers who want a basic understanding of the NPV Model:

- Chapter 1 outlines the OTS approach to measuring interest rate risk (IRR).
- Chapter 2 describes the IRR Exposure Report that presents the results of the NPV Model including key ratios used to evaluate an institution's interest rate risk exposure.
- Chapter 3 provides a short summary of how the Model calculates the economic value of each asset, liability, and off-balance sheet instrument that comprises NPV.

Chapters 4-8 are directed at readers who want a detailed understanding of the NPV Model:

- Chapter 4 describes the Asset and Liability Price Tables produced by the NPV Model and published quarterly by OTS, and how they can be used by institutions to perform certain types of analyses.
- Chapters 5 through 7 describe in detail how the economic values are calculated for certain assets, liabilities, financial derivatives, and off-balance sheet contracts whose methodologies require a detailed description.
- Chapter 8 describes how the term structure of interest rates and implied forward rates are calculated and used in the NPV Model.

Appendix A provides a copy of Schedule CMR of the Thrift Financial Report. Schedule CMR is the primary source of financial information on savings associations used in the NPV Model.

## Notation Used in the Manual

The following notation is used in equations throughout the manual unless an exception is noted for a particular equation:

### *Dollar Values*

| | | |
|---|---|---|
| B | = | outstanding dollar balance |
| PV | = | present value |
| I | = | interest payment |
| CF | = | cash flow |
| P | = | price |

### *Time*

| | | |
|---|---|---|
| t | = | any representative month |
| T | = | month of maturity |

### Interest Rates and Other Variables

| | | |
|---|---|---|
| c | = | coupon |
| cost | = | servicing cost |
| df | = | discount factor |
| f | = | monthly implied forward rate; or the simulated 1-month rate in the option-adjusted spread (OAS) framework |
| index | = | index rate (e.g., prime rate or other) |
| margin | = | margin on adjustable-rate instruments |
| n | = | used to denote a representative path of interest rates in the OAS framework |
| oas | = | option-adjusted spread |
| p | = | monthly prepayment rate |
| s | = | constant monthly spread used to calculate discount factors |
| z | = | monthly zero coupon rate |

### Questions and Comments on the NPV Model

Questions and comments regarding the NPV Model should be addressed to the following members of the OTS Risk Management staff in Washington:

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