Chapter I Introduction

Chapter II Literature Review

Chapter III Methodology

Chapter IV A Two-Asset Cash Management Model

4.1 Introduction

(a) Why use two-asset model?

-*Considered both endogenous and exogenous factors that*

*could affect cash flow.*

*-Compound profit from profitable asset*

(b) Two-asset models in literature.

(Bensoussan, Anshuman Chutani, Suresh P. Sethi, 2009)

4.2 Problem Description and Modeling Approach

(a) Model descriptions and assumptions

(b) Formulate the problem as a continuous MDP

(c) Simplify assumptions, do discretization.

**Q:** Should we talk about the techniques such as Hermite Gaussian quadrature and linear interpolation? (put these into methodology chapter)

4.3 Insolvency Risk

1. Calculation method.
2. Results (Compare with other intuitive cash management policies), consider policies from literature.

4.4 Numerical Results

(a) change the discretization scale (three plots, discretization effect, boundary effect)

1. different parameters (transaction cost, shortage penalty, return rate)
2. cash flows with non-constant variance

4.5 Conclusion

Chapter V A Cash Management Model with Loan options

5.1 Introduction

5.2 Problem Description

5.3 Using DP and heuristic method to solve the model

5.4 Multiple Loans; Loan Surface;

i.e. Companies with lower probability of going bankrupt can get better loan (lower interest rate, longer payment). Look into finance area about the nature of loans.

Chapter VI ADP in Cash Management Models