

IEOR E4601: Dynamic Pricing and Revenue Management

Lecture 4: Booking limits

1 Study Guide

By the end of this lecture, you should be able to

1. Describe in what situation booking limits are appropriate.
2. Explain why booking limits might work better than simple price optimization.
3. Describe concisely the three problem settings: two-class problem, overbooking problem, and newsvendor problem.
4. Derive Littlewood's formula in the above 3 settings.
5. Apply Littlewood's formula to solve for the optimal decision in the above 3 settings.
6. Identify the common theme running across the above 3 settings.

2 Motivation

Discussion: What is wrong with this approach? Is there an opportunity to do better?

3 Two-class problem

Discussion: Why do we assume that all low-fare customers arrive first?

4 Overbooking problem

5 Newsvendor problem

6 Common framework

Discussion: What are we trying to match with our decision q in the 3 problems above? What are the costs c_u and c_o in the two-class problem? The overbooking problem? The newsvendor problem?
