An Interagency Fare Choice Model for the Chicago Region

Presented to:

Transport Chicago

Presented by:

Monique Stinson Urban, Cambridge Systematics
Kimon Proussaloglou, Cambridge Systematics
Joseph Moriarty, Regional Transportation Authority

June 7, 2013

Topics

- Study Overview
- Interagency Fare Choice Overview
- Market Segments
- Data Sources
- Interagency Fare Choice Modeling Framework
- Interagency Model Parameter Estimates

Study Overview

- Objective: Provide quantitative evaluation of potential interagency fare products
- Collaborating Agencies: RTA, Metra, CTA, and Pace
  - Identify potential fare products
  - Conduct rider and non-riders surveys
- Model development
  - Identify market segments
  - Develop econometric model of interagency fare choice
- Incorporate all analytical tools in a unified framework

Interagency Fare Choice: An Overview

- Policy Questions
  - Is there is a market for additional or modified inter-agency fare media?
  - What drives this market (convenience, discount)?
- Methodology
  - – Stated Preference Survey
    - Hypothetical “Choice Experiments”
    - Evaluate appeal of new options
  - – RTA Fare Survey: Summer 2012
  - – About 3,000 completed surveys
    - Two SP questions per survey
    - 4,384 observations for ***inter-agency fare choice model***

A Market-Based Approach

- Market Segments for Model Development
  - Different fare preferences by:
    - Socioeconomics
    - Transit behavior
    - Services used – Metra, CTA, Pace
  - Evaluate appeal of new fare options to different types of riders
  - Key decision factors (e.g., convenience vs. cost)
- Market Segments for Model Application
  - Ridership by market segment
- Same Attributes in Development and Application

Market Segments

- Type of rider, defined by agencies & fare media used:
  - Intra-agency models
    - Riders use only one service board (intra-agency riders)
    - Riders that can choose between services
  - Inter-agency fare choice model
    - Includes both Intra- and Inter-agency riders
    - Riders that use Metra Monthly (alone or with CTA/Pace products)
    - Riders using other Metra products (alone or with CTA/Pace products)
    - Riders using CTA or Pace only
- Frequency of travel
- Trip purposes
  - Work/School
  - Discretionary

Data Sources

- Total Ridership (Weighted)
  - Key attributes
    - Metra O-D Survey
    - CTA O-D Survey
    - Pace Customer Satisfaction Survey (CSS)
  - Other attributes: Metra CSS and Pace CSS
- Interagency Fare Choice Model: RTA Fare Survey
- Assumptions
  - Fare media hierarchies
  - Frequency categories

Interagency Fare Choice Modeling Framework

- Fare Options in Stated Preference (SP) Experiments
- Discrete Choice Model
  - Evaluate impacts of new fare options:

Fare Options
- Current Method
- Open Payment ("Convenience")
- Regional Fare Card ("Discount")

INTERAGENCY MODEL PARAMETER ESTIMATES

The Effect of Discounts

- RFC Discount Level
  - No discount: RFC is less appealing than other options
  - 10% discount: appeal of RFC is similar to Current and Open options
  - “Super Link-up” option: similar result

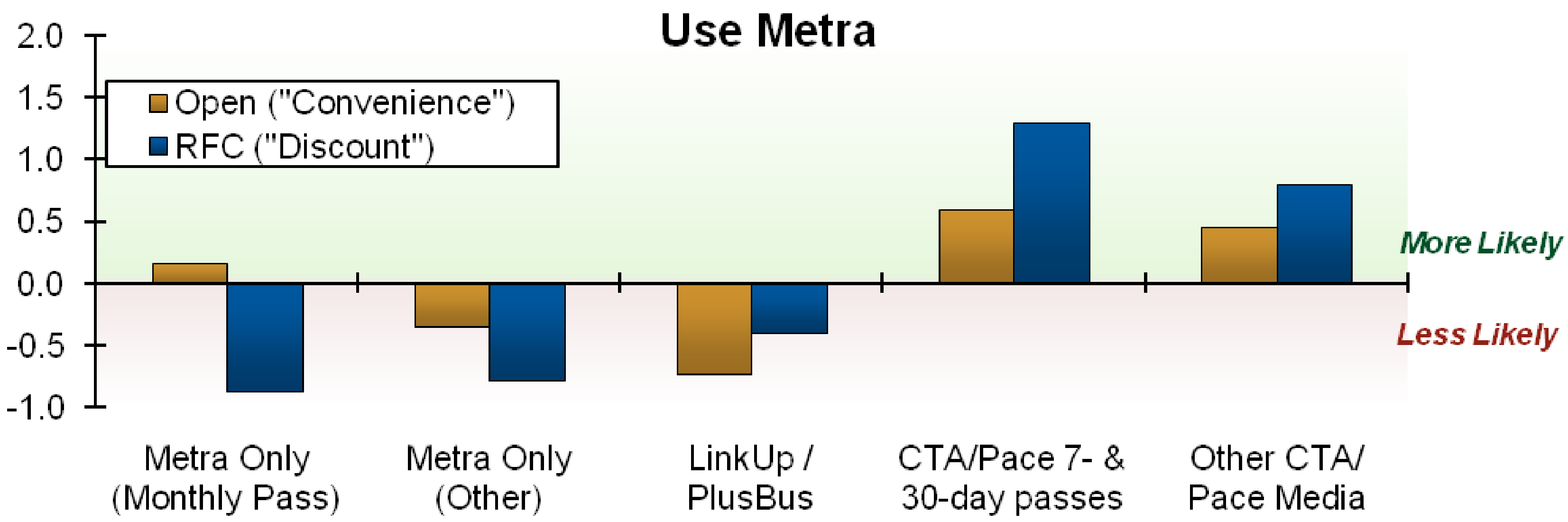
Regularity of Trip-Making

- Higher-frequency, single agency riders unlikely to use new options
- Riders with more discretionary trip-making more likely to use new options

Riders That Use Metra

	Current	Open ("Convenience")	RFC ("Discount")
Only Ride Metra:			
Metra Monthly Pass		+	--
Other Metra Media		-	--
Ride Metra and CTA / Pace:			
Link-up / PlusBus		--	-
CTA & Pace 7- and 30-day passes		++	+++
Other CTA/Pace media		+	++

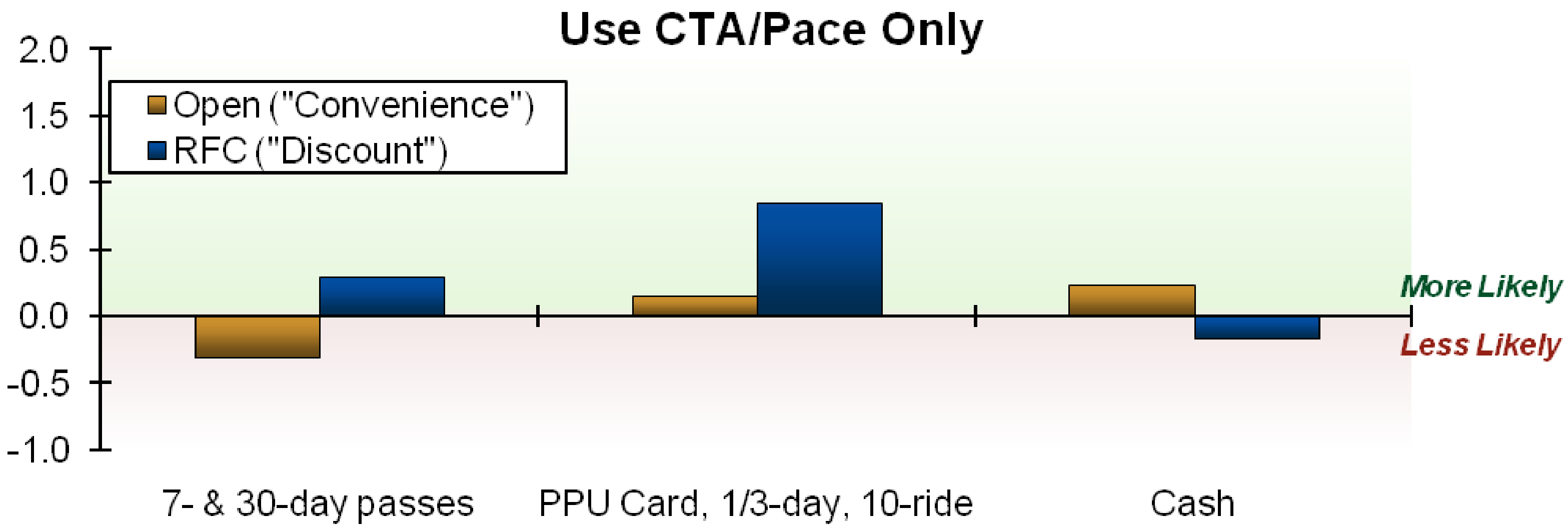
Riders That Use Metra (2)



Riders That Use CTA/Pace Only (No Metra)

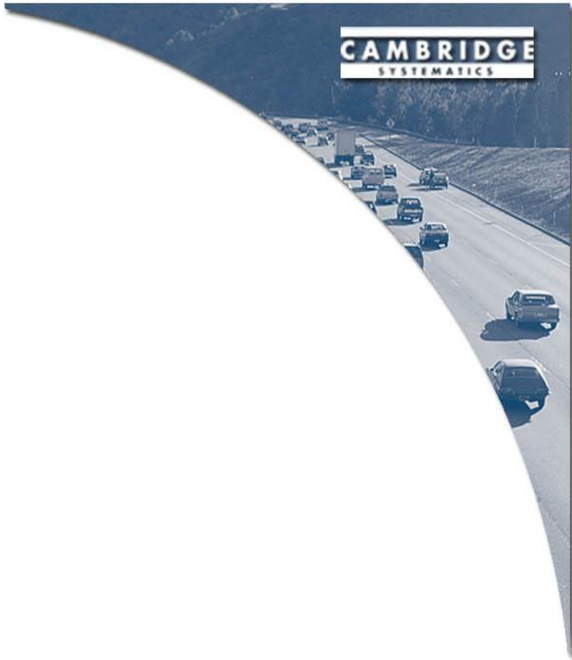
	Current	Open ("Convenience")	RFC ("Discount")
CTA & Pace 7- and 30-day passes		-	+
CTA & Pace PPU Cards*, 1/3-day passes, 10-ride		+	++
Cash		+	-

Riders That Use CTA/Pace Only (No Metra) (2)



Interagency Fare Choice Model Summary

- Quantitative evaluation to support fare policy decisions
- Model Results
  - Intuitive
  - Statistically significant
- Key Findings – Likelihood of Using New Options:
  - Less likely
    - Metra-only riders
    - Plusbus, Linkup riders
  - More likely
    - Greater variety of trips
    - Other CTA/Pace riders that use Metra (i.e., not Plusbus/Linkup users)
    - Some interest from other CTA/Pace only markets



THANK YOU!

QUESTIONS?