



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

Papers downloaded from AgEcon Search may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.



***Selected Presentation at the 2020 Agricultural & Applied Economics Association Annual Meeting,
Kansas City, Missouri, July 26-28***

Copyright 2020 by authors. All rights reserved.

Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

Measuring the Effect of Direct-to-Consumer Marketing Strategy on Farm Income: A Generalized Propensity Score Approach

Feng-An Yang¹, Shih-Hao Chen¹

¹ Department of Agricultural Economics
National Taiwan University

Introduction

- Direct-to-consumer marketing refers to selling farm products directly to consumers in agricultural business.
- It has become increasingly popular in many countries in recent years.
- While a number of studies have examined the effect of direct-to-consumer marketing on farm income, there is no consensus on whether direct marketing can increase farm income.
- Most work relies on a binary indicator of participation in direct-to-consumer marketing.
- However, farmers in practice can have different combinations of marketing channels and adopt different numbers of direct marketing strategies.

Objective

- To investigate the relationship between direct-to-consumer marketing and farm income.
- To estimate a dose-response function of farm income (response) on a continuous measure of direct-to-consumer marketing strategy adopted by farmers (dose).

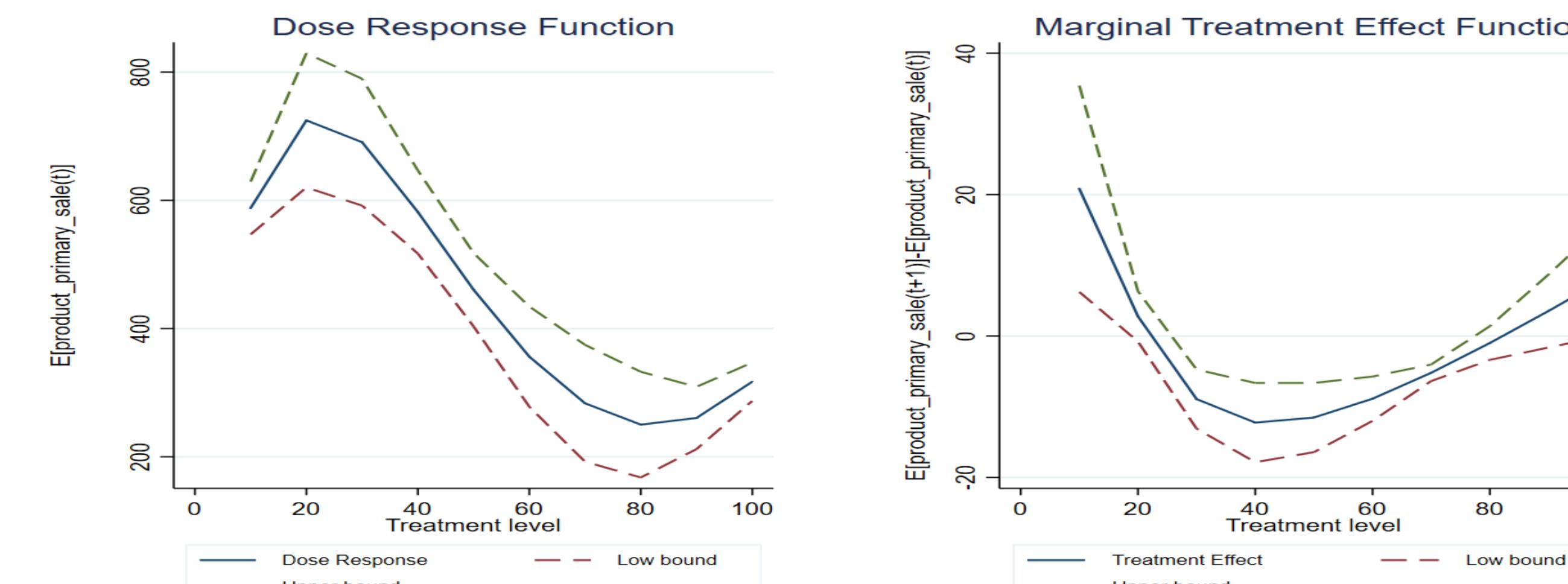
Empirical Strategy

- We use a Generalized Propensity Score (GPS) approach to deal with the continuous treatment variable (the percentage sales to consumers).
- Farm products at the different treatment levels are similar conditional on the estimated GPS.
- They only differ in percentage sales to consumers.

Data

- 2013 Core Farm Households Survey.
- A nationally representative sample of farm households with an annual agricultural income greater than NT\$ 200 thousand
- Include 13,482 product-specific observations from 9,563 farm households.

Dose-Response Function



Balancing Property

Table 1. Covariate balance before and after adjustment

Variable	Before adjustment		After adjustment	
	Mean Difference	t value	Mean Difference	t value
Age	0.880***	3.65	-0.242	0.23
Male	0.003	0.48	-0.005	0.01
Primary	-0.031***	-2.89	0.015	0.01
Junior	-0.044***	-4.54	-0.008	0.01
Senior	0.047***	4.89	-0.002	0.01
College	0.028	5.84	-0.005	0.00
Years of experience	-0.022***	-0.07	-0.238	0.33
Agricultural production and marketing group	0.099	9.27	-0.034***	0.01
Agricultural cooperative	-0.006	-1.21	0.004	0.00
Farmer Association	-0.016 **	-2.21	-0.012 *	0.01
Plot area	-1.036	-0.41	-6.256 **	2.80
Contracting farming	-0.008***	-2.77	0.003	0.00

***, **, * are significant at the 1, 5, and 10% level, respectively.

Conclusion

- Direct-to-consumer marketing has a nonlinear effect on farm income.
- Increasing percentage sales to consumers up to approximately 20% leads to higher farm income.