Measuring Oligopoly Power of Processors in Regional Fluid-milk Markets by Natural Experiments

Sanggon Jeon*

ABSTRACT

Fluid-milk markets in Korea are served by relatively few suppliers but it has been difficult to find evidence of market power in these markets. To estimate market power this study measures how much of the cost shocks are passed through to prices in the regional fluid-milk markets instead of measuring cost function. Raw-milk prices used as a cost shifter in this analysis are exogenously determined by the government policy, so this study exploits a natural experiment that is helpful to explain the relationship between exogenous policy shocks and corresponding endogenous variables. Results imply that dairy processors do exert oligopoly power in the regional fluid-milk markets in Korea.

Key words: market power, natural experiment, milk

* Research Associate at Korea Rural Economic Institute(sangjun@krei.re.kr)
I. Introduction

The Korean dairy industry has only a few domestic dairy processors. However, few studies have been conducted to estimate market power in the Korean dairy industry.\(^1\) While there is a wide variety of dairy products, this study focuses on fluid milk products that are relatively homogeneous. This study recognizes the fact that fluid milk is highly perishable and costly to transport relative to unit value, so even in a relatively small country, there are several separate regional markets for fluid milk.\(^2\)

This paper estimates the degree of oligopoly power of dairy processors in the regional fluid milk markets in Korea by calculating the Lerner’s Index. The raw milk price paid by processors and received by producers is exogenously determined, but the fluid milk price for final fluid milk products is set by processors. Hence, this paper does not consider oligopsony power but oligopoly power of processors.

For economists, obtaining the degree of market power in an industry has been a great issue for several decades. As discussed by Carlton and Perloff (2004: 244-281), these studies are categorized into several groups according to the methodologies for estimating market power. If we have the information for price and marginal cost, we can directly calculate the degree of market power. However, in many cases, we do not have exact information on marginal cost of an industry (or a firm for that matter). With insufficient cost information, the New Empirical Industrial Organization (NEIO)

\(^1\) Market power generally indicates oligopoly power or oligopsony power, or both of them. Market power in this study only indicates oligopoly power.

\(^2\) ‘Region’ indicates province in this study. Korea has nine provinces: eight provinces are on the peninsula and one province (Jeju) is an island. Eight provinces are Gyeonggi (GG), Gangwon (GW), Chungbuk (CB), Chungnam (CN), Jeonbuk (JB), Jeonnam (JN), Kyeongbuk (KB), and Kyeongnam (KN). Some of the data for Jeju (JJ) province is missing, so Jeju province is excluded from this analysis. This study considers one shock in the raw milk prices in September, 2004. To extend the number of observations, this study uses regional price data. To check the credibility of the estimates of market power, this study compares the estimates obtained by regional price data and the estimate obtained by national average price data.