

Fragmentation of Information and Sectoral Price Dynamics^{*}

Tatsushi Okuda[†]

Bank of Japan

Tomohiro Tsuruga[‡]

Bank of Japan

January 29, 2019(Preliminary)

Abstract

Exploiting survey results for Japanese firms, we document an empirical puzzle in sectoral prices from the viewpoint of dispersed information models: (i) the sensitivity has positive correlation with concentration of the information about changes in costs. (ii) However, the sensitivity is invariant to the variance of noises in the information. To account for such observation, we develop a sector-level dispersed information model of firms' pricing where the number of the types of the noises are finite (N), and shared by some $(1/N)$ portion of firms. We show that the sensitivity of prices to information about changes in the costs exhibits negative relationship with *fragmentation* of the information (N), and the model successfully replicates the decline of the sensitivity in Japan from 1975-1994 (0.75) to 1995-2018 (0.55) only with modest changes in *fragmentation* of information (from $N=2$ to $N=4$). Finally, we discuss the factors affecting the degree of *fragmentation* of information.

JEL Classification: E31, D80, L11

Keywords: Inflation dynamics, Imperfect information, Semi-public signals

^{*}The authors thank Yenan Wang and staffs at the Bank of Japan for their invaluable comments. Views expressed in this paper are those of the authors and do not necessarily reflect the official views of the Bank of Japan.

[†]Economist, Research and Statistics Department, Bank of Japan: tatsushi.okuda@boj.or.jp

[‡]Senior Economist, Institute for Monetary and Economic Studies, Bank of Japan: tomohiro.tsuruga@boj.or.jp