

Inflation, price dispersion, and market structure

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Abstract

In this paper, we use a novel data set containing prices from bazaars, convenience stores, and supermarkets in Istanbul to re-examine the relationship between price dispersion and inflation. Although existing evidence is mixed, we find positive and significant relationships between dispersion, on the one hand, and lagged dispersion and unexpected product-specific inflation on the other. We also find evidence that dispersion is initially decreasing in anticipated aggregate inflation but is eventually increasing. Finally, average price duration and dispersion are lowest in the bazaar. This is intuitive, since menu and search costs should be minimal in that market structure.

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Information search, thus, is the really advanced art in the bazaar, a matter upon which everything else turns.

Geertz (1978, p. 30), quoted in McMillan (2002, p. 41)

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1. Introduction

In this paper, we use a unique data set containing monthly price observations from individual sellers in Istanbul to explore several major issues in the literatures on search, sticky prices, and the relationship between inflation and price dispersion. A novel feature of the data is that it includes prices from three distinct market structures: *Bakkals* (small convenience stores), *pazars* (bazaars), and Western-style supermarkets, which should exhibit significant differences in terms of menu costs, search costs, and other important parameters identified by the relevant theoretical literatures.

We first investigate the frequency of price changes in the three different market structures, which we calculate according to the methodology in Bils and Klenow (2004). Since *pazars* contain a relatively large number of small sellers in a small geographical area, search and menu costs should be lower than in the other two market structures. According to the menu cost literature, including Sheshinski and Weiss (1977) and Bénabou (1988, 1992), prices should therefore turn over more quickly in the *pazar*, which is indeed what we find. Interestingly, we find that prices change more rapidly in supermarkets than in *bakkals*, and almost as fast as in *pazars*. A potential explanation, drawing on the recent literature on rational inattention, including Sims (2003) and Maćkowiak and Wiederholt (2005), is that supermarkets are relatively more sophisticated than the other two store types and hence may be able to track and react more quickly to changes in the economic environment. Our findings therefore suggest a role for both menu cost and rational inattention models in explaining observed price durations across distinct market structures.

We then turn to the empirical literature on the relationship between inflation and price dispersion, which includes Domberger (1987), Van Hoomissen (1988), Lach and Tsiddon (1992), Tommasi (1993), Reinsdorf (1994), Parsley (1996), Eden (2001), Baharad and Eden (2004), and Ahlin and Shintani (2007).¹ Overall, the existing evidence is mixed. Although several papers find a positive and significant relationship between inflation and dispersion, Reinsdorf (1994) finds a negative relationship driven by unanticipated inflation, while Eden (2001) and Baharad and Eden (2004) can discern no clear link.

The theoretical literature on search, inflation, and price dispersion consists of menu cost models—Bénabou (1988, 1992); signal extraction models—Bénabou and Gertner (1993) and Dana (1994); monetary search models—Peterson and Shi (2004) and Head and Kumar (2005); and the information investment model sketched in Van Hoomissen (1988). As our brief survey of this literature indicates (see Section 2), inflation plays very different roles across the different classes of models. Specifically, in menu cost and monetary search models inflation is assumed to be *fully anticipated* and its initial impact is to depreciate the real purchasing power of firms' revenues or buyers' fiat money, respectively. In contrast, signal extraction models focus on *unanticipated* inflation, whose effects are primarily informational. In practice, empirical researchers usually have access to more than one inflation rate² and the theory offers little guidance as to which one(s) are appropriate for

¹In this paper, we focus exclusively on *intra-market* relative price variability, but there is also a substantial literature on *inter-market* relative price variability, including Vining and Elwertowski (1976), Parks (1978), Neumann and von Hagen (1991), Debelle and Lamont (1997) and Belton et al. (2002).

²E.g., in our case we had access to at least four distinct (albeit correlated) inflation rates: Inflation for individual products in our sample, average inflation across all the products in our sample, inflation relative to a broad cost-of-living index specific to the city of Istanbul, and CPI inflation for Turkey as a whole.

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