French grocery store prices: Evidence from a price comparison website

(Very preliminary)

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Abstract:

The French supermarket chain Leclerc operates a price comparison website which allows to compare each of its stores with some local competitors, and provides aggregate chain comparisons at the national level. This papers questions the contribution of this website to consumer information and investigates heterogeneity in local market competitiveness across France.

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1 Introduction

Since the seminal paper of Stigler (1961), a large literature on the topic of consumer search and price dispersion has developed. Regarding theory, a paradigm emerged following Varian (1980) in which price dispersion results from the absence of pure pricing strategies in equilibrium. Empirically, evidence has remained rather scarce due to difficulty of collecting data really fit for hypothesis testing. Recent examples are Chandra and Tappata (2011) and **?** which work with retail gasoline data and investigate changes in positions occupied by stations in local market price distributions. A current active field of research related to search and price dispersion is the understanding of competition between supermarkets.

The first part of this paper reviews the methodology used by the website quiestlemoinscher.com to compare French supermarkets. Store comparisons are shown to be actually often highly sensitive to the basket of goods considered, suggesting that it is very costly for consumers to purchase at the lowest price(s). TODO: comment relation between information and price "‘dispersion"’ + comment regressions on price levels (and dispersion?) on local market characteristics, in particular proxies for competition intensity.

2 Description of quiestlemoinscher.com

The following section briefly relates the history of the price comparison website and its methodology.

2.1 History

Soon after its launch in May 2006, the website was forced to close by a court decision. The French group Carrefour had indeed filed a complaint about the lack of transparency and potential biases in store and product choices. An updated version of the website was released on November 2006 and has since then remained online. Legal proceedings nervetheless continued until the rejection by the court of cassation of Carrefour's claims in January 2010.

A major merit of the legal action undertaken by Carrefour is its consequence for the transparency, namely the release of well identified store product price data. The following section provides an overview of the methodology of the comparison website, two crucial aspects of which are the choices of stores and products.

2.2 Stores

Before 2013, the website only offered comparisons at the chain level. For each chain, according to Qlmc, prices were collected a sample of store expected to be representative of the store population. Broad constraints were thus imposed on store location and size, while exact store choice was claimed to be random.

From 2013 on, the development of the "drive" concept in France has allowed the comparison website to cover far more stores, and thus to start displaying store level comparison. The concept of "drive" implies that consumers are offered the opportunity to shop online from a physical store (at the same prices) and collect their purchases whenever it suits them. The collection of prices can then be achieved efficiently on the internet, as opposed to traditional store visits. As of March 2015, Qlmc claimed to cover 60% of the stores of the 10 supermarket chains compared (44% in August 2013). Regarding store level comparisons, Qlmc methodology states that each Leclerc is compared with a selection of its most relevant competitors, based on Leclerc managers' expertise.

2.3 Products

As of March 2015, only national brand products are covered by the website. Products are identified at the bar code level. There are seven food product categories: meat and fish, vegetables and fruits, backery, fresh food, frozen food, savoury grocery, sweet grocery, baby food and drinks. Non food products are split in four categories: health and beauty, houdesold, pets and home and textile. Products are further classified wihin product families. The number of products covered within each family is determined by the volume of national hypermarket and supermarket sales, with a global objective of 3,000 products. Within each family, products are chosen based on the national hypermarket and supermarket detention rate. Products whose detention rate is below 30% (i.e. products referenced by less than 30% of the stores) are dropped. This led to a total of 2,461 national brand product references covered for March 2015 (2,510 in August 2013).

2.4 Price comparison

The comparison of Leclerc with a competing chain can be described in a few simple steps. First, the average price of each product is computed successively over Leclerc stores and over the competing chain's stores. Whenever a product is carried by too few stores of one of the two chains, the product is dropped from the comparison. The basket of goods compared is then simply composed by all products for which an average price is available for both chains.

The comparison result displayed by Leclerc is then the percentage difference between the price of the basket for the competing chain and for Leclerc:

$$\frac{\sum\limits_i P_{iC} - \sum\limits_i P_{iL}}{\sum\limits_i P_{iL}}$$

s where i refers to all products in the baskets, P_{iC} and P_{iL} respectively stand for the average price of product i for the competing chain (C) and for Leclerc (L).

The comparison between two stores is very similar except that the first step is not needed.

3 Data and replication

As of March 2015, the website did not allow to easily extract price records. However, a database could relatively easily be constituted by crawling each store level comparison. Regarding the 2007-2012 period, data were made available in pdf files and were thus downloaded and processed. Pdf files also exists for price records of May 2014 but are not used in the current version of the paper.

3.1 Overview of stores and products over 2007-2012

Table 1: Overview of stores and products

P	Date start	Date end	Nb rows	Nb stores	Nb products	Avg nb products by store
0	09/05/2007	25/05/2007	554,691	344	2,325	1,612
1	10/08/2007	31/08/2007	570,193	335	2,384	1,702
2	21/01/2008	12/02/2008	544,366	318	2,374	1,712
3	04/04/2008	30/04/2008	417,272	246	2,443	1,696
4	01/04/2009	30/04/2009	414,911	701	1,471	592
5	01/09/2009	28/09/2009	432,510	726	1,463	596
6	05/03/2010	03/04/2010	446,309	739	1,466	604
7	18/10/2010	16/11/2010	385,253	624	1,479	617
8	28/01/2011	22/02/2011	357,188	634	1,383	563
9	28/04/2011	20/05/2011	240,710	637	954	378
10	17/10/2011	09/11/2011	430,968	640	1,674	673
11	30/01/2011	22/02/2011	464,604	617	1,657	753
12	12/05/2012	01/06/2012	607,185	605	1,805	1,004

3.2 Overview of stores and products over 2015

References

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