

The Role of Trade Margins in Price Determination¹

Il Ruolo dei Margini Commerciali nella Determinazione dei Prezzi

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Riassunto. L'utilizzo dei dati fiscali può contribuire a migliorare l'informazione statistica necessaria per la costruzione del conto satellite del commercio. In particolare, dai dati IVA si traggono informazioni sui margini commerciali e, quindi, si quantifica il ruolo di *buffer* esercitato dal commercio nella determinazione dei prezzi pagati sia dagli utilizzatori finali (famiglie) che dalle imprese. Gli autori sono consapevoli dei limiti che caratterizzano il dato fiscale (principalmente quelli legati al fenomeno della frode fiscale), ciononostante, l'ampiezza informativa del database utilizzato consente di sviluppare analisi comparative attendibili sui comportamenti delle imprese commerciali e rappresenta un valido punto di partenza per effettuare stime sul sommerso.

Keywords: fiscal data, trade margins, satellite accounts.

1. Introduction

Trade satellite account provides an important reading key to interpret the economic development in the sector (Biffignandi, Pisani, 2000). The creation of this account requires a broad availability of data that usually statistical surveys are not able to provide. In order to avoid this lack of information it is possible to use fiscal data, which provide information on a much wider range of subjects. In particular, this study makes use of a database provided by the annual VAT (IVA in Italian) reports. The analysis aims to examine the role of trades within price determination process, either when price is paid by the final users (families) or by the businesses.

Using fiscal data (even if they present some limits)² it is possible to achieve useful information that relies on relative assumptions rather than absolute considerations.

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² Bare in mind that measures based on fiscal data are affected by a bias due to the phenomenon of tax fraud.

Observing the fiscal reality constitutes a valid starting point for the formulation of hypotheses on compulsory integrations in order to introduce the so-called “underground economy” issue. The work is structured as follows- next section goes through the essential procedural steps of the method employed, results are then presented in paragraph three and some conclusions are drawn from it.

2. The methodological framework

The followings three NACE groups identify the sector of trading observed: 50 (sales of motor vehicles and automotive fuel), 51 (wholesale trade) and 52 (retail trade); willing to concentrate the attention on the trading activity only, repair activities and on a fee or contract-based trade are excluded from the NACE groups selected.

Manipulating VAT data we derive a proxy of gross trade margins (Tmg)³. Aiming to analyse the role played by Tmg on the process of price creation, the study is concentrated on the rate of trade margin (rTmg), obtained by the ratio of Tmg to purchases of goods for resale (Pg). This ratio measures the increment in price of goods due to the service provided by the trading sector. Fiscal data allow per se the computation of rTmg by industry. Merging information from fiscal data with those taken from other sources it is possible to disaggregate the data for each industry by product. The optimal estimate is determined by finding the matrix of unknown variables that maximises the joint probability of the observed data and the conditional estimation matrix on the analyst’s methodological assumption and subjective information (Atkinson, 2003). The estimate of joint probability of the industry margin rates, the industry product sales to total industry sale proportions and an arbitrary matrix of industry-by-product margins rate is represented as:

$$\text{Probability}(\mathbf{m}, \mathbf{X}, \mathbf{Y}_i | \text{constraints}) \quad (2)$$

where: $\mathbf{m}$ is a vector of industry group margin rate, $\mathbf{X}$ is an industry-by-product matrix of each product’s proportion of total industry sale revenues, $\mathbf{Y}$ is an arbitrary matrix of industry-by product margin rate estimates, and “constraints” includes the relational assumption (accounting rules and expert knowledge). In this work a simplified version of the (2) is employed, using the data taken from an ISTAT sales survey (Giorgi, Gismondi, 2001) for the $\mathbf{X}$ matrix.

³ The output of the distributive trades is measured by the trade margin. Starting from the company accounting data, the trade margin is obtained with the following formula:

$$Tm \equiv Sg - Pg + \Delta I_n \quad (1)$$

where: Sg = sales of goods; Pg = purchases of goods for resale, ΔI_n = change in inventories of goods for resale. Assuming that the frequency of inventories of goods for resale is constant and ignoring ΔI_n , we can obtain a measure of the gross trade margin (Tmg), which represents a good approximation of the output in the trade sector (Piergiovanni, Pisani, 1999). Starting from VAT data, Tmg can be estimated using in formula (1) the following information declared to the fiscal authorities: “volume of turnover” (for businesses that have only trading activities it equals to Sg), and the “purchases of goods for resale”, representing a good approximation of Pg (“purchases of goods for resale” not only embodies purchases of goods employed in the production process, but also includes goods purchased in order to be re-sold without being manipulated).

3. Main results

As it is known the trade sector plays an important role in price determination through the mark-up margin applied on produced goods in order to remunerate the service provided. Hence this margin represents the *buffer*, which can amplify or reduce the inflation fluctuations registered during the production and usage periods. The following tables show the results in terms of trade margins classified by industry and dimensional class (Table 1): both wholesale and retail trade margins are very similar (more than 130%). Variability is found in the retail trade, since non-specialized food stores present trade margins which are lower (128.04%) than non-specialized non food stores (140.30%). Looking at the breakdown by turnover size classes, the gross margin increases across small turnover classes (from 100 to 359.9); afterwards it decreases along the increase of the turnover class.

Table 1. Market share and gross margins rate on purchases by industry and dimensional class (in terms of turnover) – year 1998 (percentage)

Industry	Market Share	Gross margins by industry	Gross margins by dimensional class (millions of liras)							
			Up to 19.9	20 to 49.9	50 to 99.9	100 to 359.9	360 to 999.9	1.000 to 4,999.9	5.000 to 9,999.9	Greater than 10,000
Motor vehicles and fuel	17.99	119.04	27.00	176.90	161.77	138.70	121.25	115.09	111.18	122.73
Wholesale	50.35	132.36	16.00	142.21	161.18	151.39	143.78	139.20	138.70	128.44
Retail	31.66	134.57	87.59	132.28	143.36	135.86	133.01	132.71	132.54	136.39
Of which: Non-specialised food store	10.18	128.04		138.51	131.21	128.26	126.56	123.81	123.81	129.76
Non-specialised no food store	1.75	140.30		152.60	156.12	140.01	138.26	130.00	136.35	140.74
Total	100.00	130.41	64.61	133.65	144.99	137.85	134.55	131.09	130.90	128.77

Table 2. Market share and gross margins rate on purchases by industry and geographical areas – year 1998 (percentage)

Industry	Market share				Gross margins			
	North	Centre	South	Italy	North	Centre	South	Italy
Motor vehicles and fuel	15.51	30.18	17.88	17.99	122.63	118.12	112.50	119.04
Wholesale	56.01	38.47	42.17	50.35	134.25	131.82	126.56	132.36
Retail	28.48	31.36	39.95	31.66	139.04	134.20	127.27	134.57
Of which:								
In non-special. food store	10.09	8.64	11.25	10.18	130.70	127.28	122.61	128.04
In non-special. no food store	2.11	0.35	1.56	1.75	140.42	140.19	139.90	140.30
Total	100.00	100.00	100.00	100.00	133.60	128.05	124.07	130.41

Table 2 shows the results classified by industry and geographical area. Gross margin rate on purchases varies according to the geographical area: it is higher in the North of Italy, much higher than the national result; moderate in the Centre (just equal to the

national datum), much less in the South. Patterns by product confirm the results discussed in Table 1.

Table 3. *Market share and gross margins rate on purchases by group of products and distributive channel* -year 1998 (percentage)*

Group of products	Wholesale		Retail	
	Market share	Gross marg.r.	Market share	Gross marg.r.
Food, beverage and tobacco	24.82	123.88	38.48	129.90
Pharmac., med., cosmetics, toiletries	7.84	137.71	10.98	136.23
Clothing and textiles	11.11	133.93	16.98	136.89
Household goods	9.50	137.71	13.93	136.56
Others	46.73	134.95	19.62	140.00
Total	100.00	132.36	100.00	134.57

*Motor vehicle and fuel sector is omitted since data are identical to results shown in Tables 1 and 2.

Table 3 shows gross margins on purchases by group of product and distributive channel. The results highlight the role both of wholesale and retail trade in price determination. Trade is a buffer on prices: wholesale increases the production price by 32.36% and retail charges 34.57% in addition.

4. Concluding remarks

This work highlights the potential information that can be obtained manipulating a VAT data archive. When properly used, these data can provide useful information while designing a trade satellite account, hence contribute in the process of price determination. Developing the integration procedure with statistical data allows creating a link between industry and product data.

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