

Analysing the Trade and Commerce Value Chain Based on Integration between Fiscal Data and Istat Surveys¹

*Analisi della Filiera Produzione-Commercializzazione Basata
sull'Integrazione tra Dati Fiscali e Indagini Istat*

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Riassunto: il lavoro propone alcune analisi statistiche economiche utili per lo studio dei profili competitivi delle imprese in relazione alle caratteristiche di specializzazione. Nella prima parte viene stimata la matrice del fatturato per attività prevalente dell'impresa e prodotto commercializzato, utilizzando dati delle indagini Istat (indagine mensile sulle vendite per il dettaglio e indagini sui conti delle imprese per l'ingrosso). La ricostruzione storica consente, inoltre, di individuare l'evoluzione della despecializzazione. Nella seconda parte, le quote stimate nella matrice sono applicate alla produzione netta nazionale stimata sui dati IRAP per ricostruire la ripartizione per prodotti. L'integrazione delle fonti (fiscali e indagini) consente di analizzare il sistema distributivo dei diversi tipi di prodotti negli aspetti territoriali e di composizione del valore aggiunto (componenti positive e negative).

Keywords: types of products, prevailing activity

1. Aim of our study

Recently the trade sector has been characterized by both an increasing specialisation and a simultaneous development of mixed formulas. This leads to a situation where different companies can sell the same product, some of which identify their main production with it; some others consider it as just a part of a wider range of production (Giorgi and Gismondi, 2002). The competitive profiles of retail trade companies can therefore be re-defined according to two different, and to certain extent overlapping, reading keys-specialization, linked to the prevailing activity, and market penetration, linked to the type of product sold (Colla, 1999). Taking into account what is here introduced, the objective of this study is to allow a statistical analysis of the trading division in terms of retail and wholesale in order to achieve a better interpretation of the competitive profiles of companies. For this reason information about types of products sold by trade companies has been gathered and processed. Sales are currently classified

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according to the prevailing activity². The lack of statistical information on this topic has created an obstacle to the development of the study hereby presented. In this work, we introduce the estimate of the turnover matrix based on the prevailing activity and on the commercialised product (both for retail and wholesale). In order to provide information about the time series analysis of the de-specialisation, the work starts from the matrix based on survey data and reconstructs its time series (year 1997, 2000 and 2002). Paragraph two introduces the methodology employed. Each matrix estimated on the survey data is therefore integrated with fiscal data of the Regional Tax on Production (Italian IRAP) in order to analyse the distributive system in aspects related to the territory and to the composition of the added value (positive and negative components; on this topic (see for instance Liberati, Pisani and Serra (2002)). Paragraph three explores the procedures adopted for the integrated elaboration of fiscal data and survey data, while paragraph four briefly enounces the main results and conclusions.

2. Data and estimation procedure

The estimate of the turnover matrix based on the prevailing activity and on the commercialised product is derived separately accordingly to the type of trade. For retail trade the estimate is based on data of trading turnover arranged per type of product collected through the monthly sales survey (ISTAT, 2003). For wholesale trade, data are gathered from ISTAT structural surveys which aim to collect annual data on accounts of Italian companies (SCI survey for companies with at least 100 employees - via a census - and PMI for companies up to 9 employees – via a sample)³. For sales retail the survey gathers the breakdown of the product monthly turnover retail trade (15 typologies of products). Briefly the steps of the process adopted can be summarized as follows:

1. Selection of the respondent companies (presence of sales value relative to the month divided by typology of sold products) in at least six on twelve months observed;
2. Selection of the branch of prevailing economic activities (7 branches);
3. Selection product groups (five groups of products: see rows in Table 1);
4. Computation of annual data using the summary of monthly data for each company⁴;
5. Estimate of the retail companies' annual turnover F_{att} classified by the activity sector s and sale of product type p . The computation is hence structured in two parts:
 - a) Given $\bar{Y}_{sp}$ (estimate of average turnover per company relative to each stratification cell and computed with sample data used in the sale survey) and N_s (number of active companies working in the sector considered as per ASIA archive of ISTAT), $(\bar{Y}_{sp} \cdot N_s)$ is the first raw estimate of turnover to be estimated and corresponds to the first part in brackets of the final estimate written below;
 - b) When p varies the sum of these estimates should reproduce a total estimate turnover of sector s that should differ from the estimate based on the structural

² Even the ATECO '91 classification (ISTAT, 1991) "specialised" and "non-specialised" is not sufficient in the interpretation of the distributive retail sector.

³ From this point on the entire methodology is referred to retail sales only as in the wholesale trade the procedure has been much simpler referring to some macro-typologies of products in comparison with those utilised in the retail trade.

⁴ An *ad-hoc* procedure is employed for the estimate of missing values for some months.

statistics of the ISTAT companies' accounts (and that according to EUROSTAT should represent the benchmark of reference as a short-term and structural data linkage within the same sector activity). Trade activity marginal turnovers are grossed up to the absolute levels derived by the 2000 structural surveys.

Let the structural estimate be $Y_{s,vero}$, hence the final estimate is computed

$$Fatt_{sp} = (\bar{Y}_{sp} \cdot N_s) \left[Y_{s,vero} / \sum_{p=1}^5 (\bar{Y}_{sp} \cdot N_s) \right].$$

The matrix of turnover by prevailing activity and by commercialized products is based on population estimates. It shows “who” sells (rows) and “what” is sold⁵ (columns).

3. Using fiscal and survey data for territorial analysis

IRAP fiscal data have the advantage of providing detailed territorial information. Applying the percentages produced in the turnover matrix by main activity and kind of product sold, computed using the methodology introduced in paragraph 2, the positive and negative components of income are computed by product. Also, using the difference between the two components, the net production IRAP, similar to the added value, and some indicators of efficiency of the distributive system (as; ratio of negative components on positive components; positive components on net production) are calculated. Using the IRAP data territorial detail it is also possible to estimate – applying the percentage matrix computed on ISTAT survey data – the net production by product within various territorial areas.

4. Results and concluding remarks

Table 1 shows the turnover percentage composition per product type given by the turnover matrix computed on ISTAT data; territorial data relative to the product added value (or net production) come along. The observation is restricted to the retail and wholesale trade only. A non-homogeneous territorial distribution in terms of added value is visible in the distribution sector. Table 2 compares specialisation retail trade indices reference based on ISTAT data on a three-year time; an increase in the despecialisation is clear⁶. Table 3 introduces a number of product distribution efficiency indicators; in particular, drawing the attention on the negative/ positive components ratio we find a quite different situation in the pharmaceutical production, which has a low weight of the positive components to the value added (net production). More detailed results of the processed data show interesting interpretation of the trade sector characteristics and the great informative content of the use of fiscal data integrated with survey data.

⁵ An analysis referring to 1997 was already carried out in 1999 within a European project.

⁶ The effects of the “Bersani” Reform are felt along periods (Decreto Legislativo 31 marzo 1998, n. 114: “Riforma della disciplina relativa al settore del commercio”).

Table 1 - Turnover by product in Italy and net production by product for territorial data

Type of product sold	(a) Italy *		(b) North Ovest°		(c) North Est°		(d) Centre°		(e) South°		(f) Islands°	
	Retail	Whole sale	Retail	Whole sale	Retail	Whole sale	Retail	Whole sale	Retail	Whole sale	Retail	Whole sale
Food, drinks, tobacco	42.2	39.6	35.7	12,8	36.3	19.6	33.1	17.3	34.8	25.2	35.5	29.2
Pharm., med., cos., toilet	9.9	13.4	17.9	7,4	13.5	5.6	14.8	7.3	18.7	6.3	16.1	5.4
Clothing and textiles	16.0	16.4	17.2	10,9	18.9	10.4	19.1	12.4	16.5	12.4	16.2	10.4
Household goods	17.4	17.0	12.1	10,2	13.1	8.3	13.3	10,7	12.5	9.6	13.7	8.7
Others	14.5	13.6	17.2	58,7	18.2	56.1	19.7	52.3	17.5	46.5	18.4	46.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Turnover Istat: survey data °Net production: IRAP fiscal data (estimates based on integration with survey data)

Table 2 - Sales specialization indexes in specialized firms

	2002	2000	1997
% mean weight of the main product	86.1	87.8	88.8
% mean weight of the second main product	9.9	8.4	7.9
Mean number of sold products	5.0	4.6	3.8

Table 3 - Indicators by product sold (based on integrated IRAP data), year 2000

Components	Food, drinks, tobacco	Pharm., med., etc.	Clothing, textiles	Households goods	Others	Total
Negative/ positive	0.88	0.84	0.89	0.90	0.89	0.88
Positive/net production	7.27	4.87	6.31	7.28	6.40	6.55

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