PAPER 2.2

PRODUCER PRICE INDEXES FOR BUSINESS SERVICES: AN OVERVIEW OF THE FRENCH EXPERIENCE

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INSEE

I. METHODOLOGY OF IMPLEMENTATION FOR A PRODUCER PRICE INDEX

The methodology used in business services is directly derived from the one used in the manufacturing industry.
Purpose : Set up a sample of contracts for a periodic price collection allowing a price index calculation for a group of services.

A. Defining the prices and a contract classification

The definition of the prices to be collected constitutes the first step. They have to be as close as possible to real transaction prices. The dialogue with firms is helpful at this stage.
The indexes will have the best quality if the contracts (whose prices will be collected) are selected through a stratified sampling. Three main criteria are generally used to define the strata of a market's segmentation:

- the companies providing the service
- homogeneous groups of products
- the companies purchasing the service.

A collaboration is strongly needed between the statistician and professionals of the concerned industry. The output of this first step will be a turnover table crossing products and customers.

B. Managing a pilot survey

This phase is experimental. The firms are selected as representatives of the several types of producers.
The purpose is essentially to verify the feasibility of a data collection based on the segmentation above:

- Will the firms easily value separately their production in the defined strata?
- Will the firms regularly (monthly or quarterly) give prices for all strata?
- Will quality changes be easily and precisely visible?

We try to a maximum to work retrospectively to reduce the length of this pilot operation.

C. Driving conclusions of the pilot survey

The purpose of this phase is to settle:

- The nomenclatures products and customers,
- The sample's characteristics,
- The quality change treatment.

D. Implementing the survey

The sample of producers is set up according to the defined characteristics.
Each selected firm is visited by a specialized inquirer. This visit has several purposes:

- to start a good relationship with the selected firm, in order to rely on a good background for the price collection,

- to split up the turnover according to the nomenclature of products and customers in order to define the weightings,
- to select representative contract(s) for each stratum.

This step is standard for all industries, but it may be more difficult in several industries like accounting, auditing and bookkeeping, architectural or legal services where there is a large proportion of individual entrepreneurs.
Each five years, a base change occurs and a new sample drawing is done.

II. THE CURRENT SITUATION

A. The security services price index

1. The security services

Those services belong to an autonomous class (NAF 74-6Z- equal to NACE 74.60 - inquiries and security services), which amalgamates about 2,900 firms for 14 billions francs of turnover, 10 billions francs of added value and 79,000 employees. One third of these firms are very small units, most without wage-earnings, specialized in private inquiries.
The greatest part of the receipts results from 1,900 firms in surveillance and security: most are small or medium firms, regional or local, and provide a proximity service; the largest are subsidiaries of services pools; finally the subsector of surveillance and security is relatively unconcentrated; 16 firms each hold more than 1% of market.
The situation is similar for remote surveillance services (tenth part of receipts), with only 22 firms each holding more than 1% of market.
On the opposite, the subsector of funds and values transport (tenth part of receipts) is very concentrated, 9 firms representing more than 80% of turnover.

2. The transactions in security services

The main types of services are: static security, active surveillance, fire and technical security, rounds and interventions, remote surveillance and remote security, shops surveillance, funds and values transport.
Ten types of customers or sites have been listed: warehouses and working sites, banks and jewellers, factories and industrial buildings, parking, hypermarkets, offices and head offices, specific markets (national defence, ...), tall buildings, general public houses and common ownerships, sports meetings, fairs and professional exhibitions.

3. The pilot survey

The test involved ten firms. A sample of 50 contracts were constituted; some, contracts were detailed in order to isolate prices of different component services; in other cases, mere prices lists were collected... in the end, about 80 prices were collected, of which 56 hourly rates and 22 monthly turnovers. The contracts with detailed invoices, the most comprehensive in prices observation, were rather concentrated on particular markets like national defence.

a) The transactions stratification

Though many security contracts cover 24-hour periods in France, some already separate day and night duty; the test led to the conclusion that the service was not similar on day and on night: the first concerns rather static security, the latter an active surveillance. In the same way, it seemed necessary to specify the treatment of week-ends and holidays as some invoices explicitly exclude the holiday periods, while others include them.

Distinction between warehouses and working sites were proposed, considering important differences between contracts about the two sites; naturally, it was difficult to find contracts about working sites for long time periods. So was it for meetings, fairs and professional exhibitions.

b) Contracts revision

Generally, an additional charge to an existing contract will result in an additional clause; such practice facilitates of course the prices observation of the initial service which remains available along a contracts duration.

But this draws attention to prices movements linked to additional services: if there is no homogeneity between the initial contract and the additional services, the two should be monitored separately.

c) The prices updating

In most cases, the contracts prices are reconsidered once a year. More exactly, 13% of prices have not changed on a six quarter period, 59% have been modified once and 26% twice. Only one price has been reconsidered more than twice on the period. Distribution of annual prices variations shows two intervals, the first with increases between 2% and 6%, and the second with increases going from 10% up to 15%; only one falls at minus 2%.

The variation rates seem to depend more on the producer than on the customer or the service type.

d) The firms cooperation

Most of the time, firms have very positively cooperated at this initial phase of the project: some difficulties encountered to obtain prices data are easily explainable by lack of personnel more than any reluctance. At the end, the project has not raised any other difficulties than those generally encountered when implementing a new sector for a manufacturing industry.

4. The index of security services prices

As part of the program of mandatory surveys since 1993, the index is established in collaboration with professionals affiliated to UFISS (Union Fédérale des Industries et Services de la Sécurité). The main technical characteristics of the index affect the covered field, the transaction analysis grids, the sampling, the definition of contract standards type of contracts and collected prices, the sequence of contracts replacement.

a) The covered field

- The security services are gathered in three large branches (weighting of indexes by main services branches based on information given by the professionals).
- the human surveillance, except bodyguards services and provisions for private persons (64.3% of receipts);
- the funds transport and values treatment (22.8% of receipts);
- the remote security, private housing excluded, services of remote assistance and pure

remote maintenance.

b) The transactions analysis grids

Each branch is described in a transaction analysis grid in a cross customer x service frame; the homogeneity's criteria are relative to prices evolution.

About human surveillance, the analysis grid can be directly deduced from initial grid that has been used during the pilot survey. About funds transport and values treatment, the notion of customer's activity is not useful because the services are similar. The remote security (13% of receipts) is more difficult to monitor, considering the heterogeneity of installations and price lists.

The acquired experience during the first years, will lead to an adjustment of the grids in a way of simplification, at the occasion of the next base change.

c) The sampling

It includes all groups and firms that have a national or multi regional network, and a sample of regional firms representative of the industry's structure by region, activity and services nature.

At the end, a hundred firms are questioned and 615 contracts collected.

d) Contracts and prices nature collected

The selected contracts are real contracts, representative of the branches as described in the transactions analysis grids.

Their amount is significantly important in terms of turnover for the reporting firm.

The main recorded elements for each contract are:

- as product branch: INSEE code, the services label according to grids and receipts of the firm for this kind of service;
- as transactions sample: a customer code kept by the firm to ensure the contracts confidentiality, the reference period of the contract, the location, the kind of service, the coded period (day, night, 24h/24, week -ends, etc) and the billings unit.

The recorded prices are tax free. They correspond exclusively to the services of the initial contract - out of additional clauses - still running during the observed quarter and used for customers invoicing. According to the services branches, the most frequent units are:

- for surveillance services, the hourly, monthly, quarterly or annual package;
- for funds transport, the collecting point, the monthly package for x collecting points or for x weekly collection;
- for moneys and values treatments, the coins roller, a 1000F account, the document, the cash dispenser (DAB) or a package for x cash dispensers;
- for remote surveillance, the monthly subscription;
- for intervention on alarm, the intervention or a monthly package.

e) Contracts replacement

Most contracts are replaced once a year, either at the beginning of the calendar year, or at the signature's anniversary. Where a contract is replaced without services modification, the treatment is quite simple.

In principle, all the other cases correspond to contracts changes:

- either there is a change in services contents;
- or the contract is not replaced, in which case the firm is asked to replace the dead contract by a similar one with its prices for the current and the past periods.

f) The results

The global index (base 100 in 1992) is regularly published in the INSEE monthly report of statistics; detailed indices, particularly by services branch, are up to now communicated to the sole professionals.

When the next base change will occur, it is foreseen to simplify the transactions classification.

Turnover (Estimate) 1992

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SE 01

SECURITY'S ACTIVITIES
HUMAN SURVEILLANCE

Firms name

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Services / Customers		GENERAL SURVEILLANCE	FIRE AND TECHNICAL SECURITY	SHOPS SURVEILLANCE
		1	2	3
WAREHOUSES	A			
BANKS	B			
JEWELLERS	C			
FACTORIES AND INDUSTRIAL BUILDINGS	D			
PARKING	E			
HYPERMARKETS	F			
OFFICES	G			
TALL BUILDINGS OFFICES	H			
TALL BUILDINGS HABITATION	I			
GENERAL PUBLIC HOUSE	J			
PECULIAR MARKETS	K			
FAIRS	L			
WORKING SITES	M			

Turnover (Estimate) 1992

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SE 02

SECURITY'S ACTIVITIES
FUNDS AND VALUES TRANSPORT

Firms name

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Services / Customers		FUNDS & VALUES TRANSPORT	DOCUMENTS TRANSPORT	MONEYS TREATMENT	BANK NOTES TREATMENT	CASH DISPENSERS MANAGEMENT
		1	2	3	4	5
BANKS, HYPERMARKETS...	B					

Turnover (Estimate) 1992

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SE 03

SECURITY ACTIVITIES
REMOTE SECURITY

Firms name

____

Services		REMOTE SURVEILLANCE			SECURITY INTERVENTION ON ALARM
Customers		INTRUSIONS	FIRE	TECHNICAL	
RISK	SURFACE	1	2	3	4
P1 SMALL (1,2,3)	< 500 m²				
P2	500 to 2500 m²				
P3	> 2500 m²				
M1 MEDIUM (4,5)	<500 m²				
M2	500 to 2500 m²				
M3	>2500 m²				
C1 HIGH	<500 m²				
C2	500 to 2500 m²				
C3	>2500 m²				
B1 FINANCIAL	<500 m²				
B2	500 to 2500 m²				
B3	>2500 m²				

B. The cleaning prices index

1. The cleaning industry (NACE 74.70, NAF 74.7Z)

In France, this activity is essentially directed to firms and administrations (95% of turnover). In relation to sectors prices, one must recall that the weight of personnel costs, social security costs, is particularly notable in this services profession (73% of operating costs, the second main item, products purchases representing 18%). Qualification and social regulation are of first importance for this labour intensive industry.

2. The transactions

Information to be collected are buildings destination, materials, surfaces, facilities and elements to be cleaned, interventions timetables.
The grid, as a conclusion of three finalization meetings, mixes only customers and services or, to use the professional language, customers activity, and kind of working site.
Concerning the customers, one note a line ‘private persons’ (out of scope); the line ‘school and university buildings’ recall first that it's an important customer, and above all, that these are specific working places because they don't open the whole year.
According to the usual process for test, it was first foreseen to request to voluntary firms a rough breakdown (a few percents precision is very sufficient) of their turnover according to a market nomenclature; this breakdown will be useful to point at the significant boxes for the firm and to evaluate the weights for the calculation of the global index; from the responses, one or two contracts will be selected as representative of each box. Those contracts should be as stable as possible in order to preserve from too frequent changes in nature.

3. The test and the grids rewriting

The grid initially developed was based on crossing sites nature with customers activity. It came out that it was too detailed in comparison with professional practices. In fact, turnovers are global and, naturally, contracts are mixed regardless of the nomenclature.
In order to rebuild a more operative nomenclature, two principles were kept:
The first one was to use the new nomenclature CPF (french products classification - derived from CPA). For the cleaning industry, this nomenclature distinguish at the top level:

- 1 industry disinfection, rats extermination, disinsectization;
- 2 windows;
- 3 current cleaning of buildings (commercial centres, offices, general public houses);
- 4 specialized cleaning (agribusiness, industrial);
- 5 chimney cleaning
- 6 other sites (with, in particular, transport vehicles).

The prices index for cleaning professionals will cover the categories 2 to 4 and 6 (the professional association doesn't cover activities 1 and 5).
The second principle was that mixed contracts regardless of the classification and subdivisions, would be considered under the main class, in other words according to the main cleaned site. Thus, a contract of hospitals under cleaning (category 3) that contains a minor part of surgical room cleaning (category 4) will be classified for the total in ‘current cleaning of buildings’.
Besides, it has been decided to distinguish public markets from private markets.

4. The sampling

The selections criteria of the sample are the firms size, according to the turnover, its specialization and its country. The firms with a turnover upper than 100 million francs are exhaustively surveyed; those with a turnover lower than 20 million francs are excluded, because their influence on markets is marginal; between 20 and 100 million francs of turnover, firms are surveyed by sampling, the sample size being fixed to 120 units.
Nowadays on 117 firms in the sample, 82 (about 70% of the sum) have accepted to give the required information; that is to say an even rough breakdown of turnover in the transactions grid, and above all the selection of representative contracts; half of firms have actually provided information, but, the collection cost is higher for one firm out of two: for those, the prices variation cannot be validated without additional information from the firm; the most frequent problem is that the bill has changed from one period to another, sometimes by simple postponement of the billing. Moreover, for 25% of the sample, more than 6 contacts were necessary before the first appointment!
Although the contracts collection continues with some difficulties, one must note, more positively, that, nearly unanimously, firms prefer to give real contracts rather than type contracts and that, on the other hand, firms can make the difference between prices variation and services variation where contract is changed. These two points show than there is no unwillingness from firms; but there is a clear lag in the implementation price index in this industry.
Because of these unexpected difficulties and the available sources, the first stage will end by the end of 1996 and the first index will be available later on.
This step has already permitted to collect precious information directly from firms about the way they manage their contracts, the new strategies used with the growth's slowing up ... This information complete those obtained during the test step.
The emphasis has been put especially on strategy used to obtain a new customer in a hard competitions context: it's actually in this case that the 'negotiation' factor has a particular importance. Generally, for the first year, the customer cannot easily specify his needs. The producer makes a bid at 100 from the billing of similar sites; but he will propose 80 to catch the market; then, if he gets this new contract, he will progressively increase the price until reaching the mean of other comparable contracts. This kind of behaviour is probably more frequent in sectors like cleaning, where the market is not saturated. It raises a problem for index calculation: how to reflect the price fall that occurs when the producer changes?
A statutory clause relative to the cleaning profession would have resolved this difficulty (appendix 7 of the industry's collective agreement); according to this clause, the firm who loses a market must dismiss workers assigned to the corresponding site, workers who will be re-engaged by the firm holder of the new contract; if it was so, this clause would permit to follow contracts, without changing the methodology by keeping surveying producers and not customers. In practice, it seems that the new contracting firm doesn't know the previous contract enough to chain the two situations.

Free tax turnover of year 19..
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CLEANING ACTIVITIES
NAF 74.7Z

Firms name
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		Interior 1		Windows 2		Exterior 3		4 Punctual services
		Manual	Mechanic	Simple access	Specific means	Manual	Mechanic	
		1	2	3	4	5	6	7
OFFICES (including those of public offices)	A							
FACTORIES AND SHOPS - BUILDINGS	B							
FACTORIES AND SHOPS - EQUIPMENTS	C							
TRANSPORTS INFRASTRUCTURE	D							
TRANSPORTS MATERIAL	E							
COMMERCIAL BUILDINGS	F							
COLLECTIVE EQUIPMENT (including fears, hotels)	G							
SPECIFIC PROVISIONS (sensitive zones)	H							
COMMON PARTS OF HABITATIONS	I							
SUM								

III. THE PROSPECTS

A. The temporary work services (NAF 74.5B Travail temporaire)

1. Generalities

The 74.5B class (part of NACE 74.50) exclusively concerns the providing, on a temporary basis, of employees recruited and paid by temporary employment agency, in respect of clauses fixed by law. It amalgamates about 800 firms for 38 billion francs of turnover, 36 billion francs of added value and 216,000 employees.

2. Observed prices nature

Because of the very short mean duration of contracts (2 weeks in 1994, half not passing a week), it is not possible to operate by selecting contracts to be monitored on a quarterly period as for other services. However some customer firms (or groups) negotiate global agreements with temporary employment agencies; these agreements manage the contracts of disposal placing on a duration planned in contract and can define a multiplier rate that will be applied to gross pay used in customer firm of which salaries grids are appended to contract. Two collection systems are possible:

- The temporary employment agency can calculate quarterly an average price for all or part of the strata of the grid (the grid is defined in the next pages); in this case, the mean price will be collected with the mean gross salary corresponding to the invoices. This solution would allow a better smoothing of elementary prices. The average price would be a simple mean of hourly tax-free price list used during the last month of the observed quarter.
- The firm could not calculate an average price; but it could operate a selection of existing contracts at the end of reference's quarter corresponding to all or part of grids strata. The data collected would then be the price invoiced of each selected contract and the mean gross salary paid for this contract.

The question raised and not yet answered is to know the nature of the calculated index. In fact, we have three possibilities:

- a global prices index reflecting both the evolution of temporary remunerations and the evolution of intermediation costs. This solution can make easier the use of the index for an unexperienced user.
- a prices index reflecting the only evolution of intermediation costs. This solution would permit national accounters to use a double deflation of production and of intermediate consumption, since the temporary salaries trends are derived from general salaries evolution.
- from the two indexes. Professionals of this service are not willing to allow publishing the two series. They consider that this could encourage a price fall.

3. Nomenclatures

The foreseen nomenclature includes nine kinds of professions and ten kinds of customers. The

strata are defined as crossing professions and customers.
The surveyed strata will be upper a minimal point (2%) in relation to the volume of the whole of delegations. This is expected to divide by three their number (90 at start).

The selected professions are the following: (percentages are given in relation to the works volume of the whole of delegations in 1994).

43	Intermediary professions of health and social work	2.3 %
47	Technicians	2.1 %
54	Administrative employees	14.2 %
62	Qualified workers of industrial type	14.9 %
63	Qualified workers of craft type	14.7 %
64	Drivers	3.1 %
65	Qualified workers of handling, warehousing and transport	3.9 %
67	Unqualified workers of industrial type	36.5 %
68	Unqualified workers of craft type	7.7 %

The customer's activities are the followings :

01	Agriculture, forestry and fishing	9.7 %
02	Agricultural and alimentary industries	6.7 %
03	Energy	1.5 %
04	Intermediate goods industries	13.2 %
05	Equipment goods industries	12.4 %
06	Consumer goods industries	6.4 %
07	Building, civil and agricultural engineering	26.4 %
08	Trade	6.3 %
09	Transports	5.8 %
10	Commercial services	10.0 %

4. Purpose of the test

The test is aimed to validate the initial postulates with the object to move up to the next step of prices observation.
The postulates to be checked are the following:

- It is possible to obtain average prices or real prices on existing contracts for all or part of the grids strata.
- The classifications nomenclatures of professions and customers are pertinent. In particular the prices span within a stratum is not too important.
- The firms division in two categories according to the employment size [500 and more] - [less than 500] is valid.
- The test is expected to determine the minimal point permitting the stratums observation (ratio between the stratums size and the total size). A too low point risks raising collection problems: we would not have observations each quarter for each of sampled firms.

Free tax turnover for year 19..

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TEMPORARY WORK SERVICES NAF 74.5B

Firms name

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Customers / Professions	01 Agriculture, forestry and fishing	02 Agricultural and alimentary industries	03 Energy	04 Intermediate goods industries	05 Equipment goods industries	06 Consumer goods industries	07 Building, civil and agricultural engineering	08 Trade	09 Transports	10 Commercial services
43 Intermediary professions of health and social work										
47 Technicians										
54 Administrative employees										
62 Qualified workers of industrial type										
63 Qualified workers of craft type										
64 Drivers										
65 Qualified workers of handling, warehousing and transport										
67 Unqualified workers of industrial type										
68 Unqualified workers of craft type										
TOTAL										

B. Other industries

The industries of passenger car rental (NACE 71.10 - NAF 71.1Z) and market research (NACE 74.13 - NAF 74.1E), on which preliminary works have been made, are actually at a standstill.

Other industries are actually in preparation:

- Accounting, auditing and bookkeeping (NACE 74.12 - NAF 74.1C),
- Construction machinery rental (NACE 71.32 - NAF 71.3C),
- Desk machines and electronic computers rental (NACE 71.33 - NAF 71.3E),
- Linen rental (NAF 71.4A - part of NACE 71.40).

Their progress will be a function of the advancing of discussions with professional organizations of these industries and of means in researcher given by INSEE at price indexes for business services. The choice made up to now to privilege the systematic visit of questioned firms is expensive at this level, a researcher visiting in mean 140 firms each year.