

The 40th Voorburg Group Meeting

Sector paper

**ISIC 77/40 Leasing of intellectual property and similar products, except
copyrighted works (SPPI)**

Emmanuel Caicedo

Insee, France

Table of contents

1. Industry Description and Characteristics (CPF 77.40).....	3
1.1 Industry Definition.....	3
1.2 Market Conditions and Constraints.....	4
1.3 Economic Models and pricing structures.....	5
2. Measuring Service Producer Price Indices (SPPI).....	6
2.1 General Framework.....	6
2.2 Sampling for branch 77.40.....	7
2.3 Price measurement for branch 77.40.....	8
2.3.1 Tarification based on unit price.....	8
2.3.2 Tarification based on turnover per unit.....	8
2.3.3 Tarification based on global turnover.....	9
2.3.4 Tarification based on profit margin.....	10
2.3.5 Summary table for measurements in branch 77.40.....	10
2.4. Tools, method and dissemination for branch 77.40.....	10
3. Evaluation of renewal and measurement.....	13

This paper examines the **measurement of Service Producer Price Indices (SPPI)** for Branch 77.40, focusing on:

- An **economic description** of the branch (patents, trademarks, franchises)
- The **methodologies** used by INSEE to construct price indices for the branch for C (production sold in France - basic prices), CM (production sold in France – market prices), E_7740 (production exported) and P (total production).
- An **evaluation of the renewal** in data collection (response rates, transfer pricing, non-responses) and some **improvement perspectives**.

1. Industry Description and Characteristics (CPF 77.40)

According to the international Standard Industrial Classification of All Economic Activities (ISIC Rev 4), branch 77.40 Leasing of intellectual property and similar products, except copyrighted works includes « *the activities of allowing others to use intellectual property products and similar products for which a royalty payment or licensing fee is paid to the owner of the product (i.e. the asset holder). The leasing of these products can take various forms, such as permission for reproduction, use in subsequent processes or products, operating businesses under a franchise etc* ».

1.1 Industry Definition

Branch 77.40 (NAF 77.40Z) covers intellectual property leasing services, including:

- **Patents:** Exclusive rights to inventions (20-year validity), monetized via **royalties** (e.g., pharmaceutical or mechanical technologies).
- **Trademarks:** Licenses for logo/commercial name usage (e.g., franchises like McDonald's).
- **Franchises:** Contracts allowing business model replication (e.g., retail networks).
- **Mining Prospecting:** Licenses for geological data exploitation.
- Internet domains, taxi licences, architectural plans, rights of designed or developed board games

The ISIC also specifies that the current owners may or may not have created these products.

Exclusions:

- Copyright-protected works (books, software, films → Branches 58–59).
- Real estate or tangible asset leasing (→ Branches 68.2 and 77.1–77.3).

Blurred lines: 74.91: Patent brokering and marketing service activities

- Brokering and marketing activities on patents
- Management services for copyrights and their revenues
- Management services for rights to industrial property (patents, licences, trademarks, franchises etc.)
- Activities of collective rights management organisations

Associated Products (CPF Level 6):

- 77.40.11: Licenses for R&D results (e.g., pharmaceutical patents).
- 77.40.12: Licenses for trademarks and franchises.

- 77.40.13: Licenses for mining data.
- 77.40.19: Other licenses (architectural plans, industrial designs).

1.2 Market Conditions and Constraints

Intellectual property (IP) is a cornerstone of the modern economy, enabling businesses to monetize innovation and secure competitive advantages. In France, branch 77.40 - dedicated to licensing services for intellectual property products (excluding copyright-protected works) - plays a pivotal role in this landscape. With a total turnover of €22.06 billion in 2021 according to national accounts, this sector highlights the growing importance of intangible assets in corporate competitiveness. Exports account for 55%, reflecting high internationalization and the dominant role of multinational corporations.

According to the ESA survey, Patent royalties (7740Z11) and trademark or franchise licenses (7740Z12) account for the majority of 77.40 turnover. Also, ESA shows that a large part consists of intra-group transactions. However, this leaves some gaps in our detailed understanding of these transactions as most of this turnover is unprecised by responding businesses (7740Z00) and the measure by ESA survey accounts for only 6.1 billion of the 22 billion estimated by national accounts.

7-digits Classification		€ Millions
7740Z00	Exploitation of industrial property rights (licences, patents, trademarks, franchises, etc.)	2 482
7740Z11	Patent royalties	1 525
7740Z12	Licences for trademarks and franchises	772
7740Z18	Taxi licence leases	2
7740Z19	Other licensing services, such as plans and models	2
7740Z91	Intra-group services—Patent royalties	182
7740Z92	Intra-group services—Licences for trademarks and franchises	856
7740ZB0	Leases of intellectual property and similar products	92
7740ZO0	Leases of intellectual property and similar products, excluding works subject to copyright	199

The French market in this sector is proving to be particularly dynamic. French patent applications have remained at a high level since 2021 and are set to accelerate significantly in 2025. After 14,758 applications in 2021—a 3.1% increase compared to 2020—the number of filings stabilized in 2022 at 14,747 (-0.1%), before rising again in 2023 to 15,566 (+5.6%). In 2024, filings declined slightly to 15,458 (-0.7%), before reaching 16,807 in 2025, an 8.7% increase year-over-year. This level is the highest for the period under review and exceeds the 2021 figure by nearly 14%. The INPI thus highlights the marked resurgence in patent filings in 2025, which have returned to a level higher than that seen before the pandemic. This growth is driven by the automotive and aerospace industries but also owes a significant portion to public research: the French Atomic Energy Commission (CEA) and the National Center for Scientific Research (CNRS) rank among the top 10, and nine public institutions appear in the top 50.

The trend in trademark applications is more mixed. After a record high of 113,070 applications in 2021—up 6.5% from 2020—filings saw a sharp decline in 2022, with 94,426 applications, representing a drop of approximately 16.5%. According to the INPI, this decrease reflects a return to a more normal level following two particularly dynamic years.

Year	Number of patent deposits	Evolution (%)	Number of trademarks deposits	Evolution (%)
2021	14 758	3,10 %	113 070	6,50 %
2022	14 747	-0,10 %	94 426	-16,50 %
2023	15 566	5,60 %	93 081	-1,40 %
2024	15 458	-0,70 %	90 874	-2,40 %
2025	16 807	8,70 %	103 645	14,05 %

Source: Inpi (National institute for intellectual property)

1.3 Economic Models and pricing structures

The pricing structure of a franchise generally relies on three main revenue streams. First, the franchisee pays an initial entry fee, usually as a lump sum, which gives access to the brand, business concept, know-how and support services. In the restaurant sector, for example, this fee can reach around €30,000. Second, the franchisor receives royalties, typically calculated as a percentage of the franchisee's turnover. These generally range from 3% to 5%, with additional contributions sometimes charged for indirect costs or marketing. A restaurant franchisee, for instance, may typically pay around 4% of turnover in royalties. Finally, the franchisor may generate additional revenue through commercial margins when it supplies products, equipment or services to its franchisees.

For **patents**, there is no standard price: their value depends primarily on their expected economic benefits. Key value drivers include the **exclusivity** provided by the patent, its **remaining validity period**—up to 20 years from the filing date—and the **size and potential of the market** covered by the invention. A pharmaceutical patent with global commercial potential, for example, may be considerably more valuable than a patent protecting a niche mechanical innovation.

Patents can also be involved in **cross-licensing agreements**, whereby companies grant each other rights to use their respective patented technologies. These agreements are particularly common in sectors with highly interconnected technologies, such as **telecommunications, electronics and pharmaceuticals**, and can help companies avoid litigation while securing access to essential technologies.

The price of intellectual property assets can vary significantly depending on several factors. First, the patent lifecycle has a direct impact on licensing prices: as the patent approaches expiration, the remaining exclusivity period becomes shorter and royalty rates may decline. This effect is particularly visible in the pharmaceutical sector, where the arrival of generic drugs can further reduce the economic value of the patent. Second, the level of competition can influence licensing costs. In sectors such as telecommunications, patent pools allow companies to share access to multiple patents, potentially reducing individual licensing costs and transaction complexity. Finally, transfer pricing policies can affect the royalties recorded within multinational groups, as companies may structure intra-group intellectual property transactions according to international tax rules. For example, Michelin has adopted the OECD Profit Split Method in certain transfer pricing

arrangements, allocating profits between entities based on their respective contributions to value creation. These factors highlight why observed royalty rates cannot be interpreted independently from the legal, competitive and economic context in which they are determined.

2. Measuring Service Producer Price Indices (SPPI)

2.1 General Framework

The INSEE's survey for services' price indices (Observation of Prices in Industry and Services: Opise) monitors the evolution of production prices for services from French services companies. The Services Producer Price Index (SPPI) is one of **the variables compiled in the system of short-term statistics**. Data on SPPI are released quarterly within 60 days after ending the reference quarter.

In terms of precision, we release price indices with a lower level of granularity than the one required by EBS and the FRIBS regulations. Indeed, because our indices are used for volume indices calculation, as deflators for National Accounting (supply-use balance) and for Service Production Indices (SPI), INSEE disseminates SPPI until the NACE at 4 digits level (classes) instead of the 2 digits level (divisions) required by the FRIBS regulation. The SPPI are compiled for all markets (BtoAll) and, if possible, disseminated for the different markets (BtoB, BtoC, export).

The definitions of SPPIs must respect National Accounts concepts. Thus, SPPIs are expected at basic prices (including intra-group transactions, subsidies and excluding taxes). For the purpose of indexing contracts, market prices are also released.

SPPIs aim to:

- Feed national accounts (basic prices).
- Index contracts (market prices).
- Track sectoral inflation (e.g., rising royalties for pharmaceutical patents).

The structure at the CPA-4-digits levels comes from the structural business statistics. The details of products are issued of the renewal operation. The renewal of the service industries for French SPPIs is a continuous process: each industry measurement is refreshed once every five years on average, although this interval may be adjusted to take into account technological, product or market swift shifts.

Samples are determined at two different levels: first, firms and secondly, service products.

- For firms, samples are defined by cut-off at the CPA-4-digits levels from the survey database which is the last available Annual sectoral survey (Y-2). For every CPA-4-digits level, service companies are sorted by decreasing "product based" turnover. Then, thresholds of coverage define the size of each sample, in order to provide better coverage of one of the different markets. A qualitative analysis is also conducted on the sample drawn from the survey database to remove companies which obviously are not to be surveyed (deceased, restructured, out of scope...);

- For service products, INSEE engineers-surveyors interview the selected firms to define or re-define services that will be followed in a customized quarterly questionnaire. The aim of these interviews is to provide standard products whose prices are easy to follow through time, which guarantees a good index quality. Respondents are asked to select a number of service products representative of their total output.

Benchmark products are identified during engineer interviews and selected according to three key methodological criteria: **representativeness, temporal stability, and data availability**. The benchmark should be representative of actual market transactions and accurately reflect the pricing mechanisms observed for intangible assets, such as royalty rates for automotive patents. **Temporal stability** is essential to ensure that observed price changes capture genuine market movements rather than changes in the characteristics or composition of the product, thereby limiting substitution bias. Each benchmark must also be supported by **reliable and traceable documentation**, including contracts, invoices, and detailed pricing or calculation methods. The appropriate price indicator depends on the type of intellectual property and its underlying business model. Pharmaceutical patents may be monitored through a **unit price per drug box**, while restaurant franchises can be measured as a **percentage of franchisee turnover**. Luxury brand licensing may combine a **fixed annual fee with a percentage of sales**. These prices can then be tracked over time using appropriate sector-specific price indices, such as the Health IPP Index, Restaurant CPI, or Consumer Price Index.

Once the products have been defined, the prices of transactions are collected quarterly. They refer to a precise service sold on a market. For some companies, rates are collected only once or twice a year, particularly when pricing policy is reviewed only once a year. Without compromising the economic analysis, this practice increases the response rate of companies to the Opise survey.

2.2 Sampling for branch 77.40

For industry 77.40, the sample selection process revealed reporting errors by companies regarding their business activity in 7740, mostly compared to their business activity in 7491. The initial selection of 35 companies, representing an apparent 70% turnover coverage rate (ESANE source), was reduced to 16 companies following the analysis.

Rather than expanding the sample based on the ESANE source, auxiliary sources were therefore used to provide the broadest possible coverage of the sector's activity:

- Tax returns and more particularly the “other operating revenue” (line R704), which does not correspond to traditional sales or operating revenue (sales, services rendered, etc.) but rather to ancillary income related to their business activities. “Other operating revenue” includes extraordinary income (compensation, operating subsidies), the revenue derived from concession agreements but also income such as royalties received for the use of patents, licenses, trademarks, or intellectual property rights. This revenue is reported in box A3 of the tax return, which is specifically designated for royalties from patent concessions, licenses, or similar rights. It is a main source for National accounts when estimating the 77.40 industry production: “other revenues” make it possible to identify companies that monetize intangible assets (patents, licenses), even if this is not their core business. 28 businesses were selected among this list.

- The leading companies that have filed patents in France in recent years: the INPI (National Institute of Industrial Property), the French public agency responsible for protecting and promoting industrial property rights (patents, trademarks, and designs) for businesses and inventors, provides such a list.
- The franchise network leaders, as recognized by the French Franchise Federation (FFF)—the professional organization that represents and promotes the franchise model in France by defending the interests of franchisors and their franchisees—comprise nearly 190 member networks (approximately half of all franchise brands).

The final sample consists of 49 companies. Selecting the sample using a cutoff based on different sources increases the overrepresentation of large companies and major corporate groups. Small businesses are significantly underrepresented. As a result, certain industrial sectors are also overrepresented. INSEE does not disclose information about its PPI samples in order to protect the confidentiality of the price data provided by companies. However, when it comes to patents, we all know here that Renault, Airbus, Sanofi and L'Oréal are French companies, unlike ASML, Infineon, and SAP.

As a result, the coverage rate for 77.40 industry within SPPI cannot be easily calculated. The companies in the sample account for 41% of the Esane reports filed under code 77.40 and 22% of other operating income reported on tax returns (which covers a broader range than royalties). In retrospect, it is worth noting that the prices collected represent total revenue of 8.5 billion euros, compared to the 6 billion reported by companies under the ESANE program and the 22 billion estimated by the national accounts.

2.3 Price measurement for branch 77.40

In total, there are 384 price series covering the three areas (69 in C, 102 in E1, and 198 in E9, for 23, 20, and 26 suppliers, respectively), or about 8 series per supplier. Since the renewal in 2023, some series have been discontinued, and there are now only 369 series collected.

2.3.1 Tarification based on unit price

In the case of patents, the royalty for use is sometimes billed per unit of product manufactured using that patent; this is particularly true in the pharmaceutical industry, where a drug consists of an active ingredient present in a specific dose. The amount of the royalty per unit therefore reflects the price of the patent. In this situation, price tracking poses no particular problem: this percentage of the invoice amount is collected directly, allowing the unit price to be determined regardless of the quantity of the brand or patent for which it is used.

This situation affects about 30 series collected across the entire 77.40 industry.

2.3.2 Tarification based on turnover per unit

In other cases, the patent royalty is billed as a percentage of the unit sales price of the product that uses the patent. This is also primarily the case for pharmaceuticals, as well as for industrial mechanical processes that use multiple patents to manufacture a finished, marketed product. This billing method has been identified in particular in intra-group transactions, where the parent company engages in research and development and makes the patents it has filed available to its

production units, but those production units also pay royalties to companies outside the group to manufacture the product. This is also the case when the patent relates to a production method.

In this situation, the patent price includes both the percentage charged on the price of the product sold and the price of the product itself, which may vary depending on other factors (intermediate inputs, labor costs, investments, competition, pricing strategy, expectations, etc.). The standard formula for tracking changes in the patent price itself is therefore of the following form:

$$\text{patent price} = (\text{royalty rate per unit price sold}) \times (\text{price index per unit of the product sold})$$

The challenge, then, is to maintain consistent quality for the price of the patent and, therefore, to clearly identify a sector that uses that patent. In the case of intra-group transactions, it was possible to set up simultaneous data collection for both series (rate and price of the product using the patent). This situation affects about 20 series collected across the entire 77.40 industry.

2.3.3 Tarification based on global turnover

In most cases, royalty rates for patents and trademarks are based on revenue generated. This is the standard practice in franchising but also applies to many patents, particularly when their licensing also includes the use of the trademark and know-how (the Sanofi model). In this situation, it is difficult to identify a specific product that would allow for the direct application of the formula below, unless the purchasers of the patents and trademarks are also surveyed - which falls outside the standard scope of the Opise survey used to construct the 77.40 SPPIs.

In this situation, the solution adopted is to directly use a price index that has been calculated and corresponds to the sector in which the patent or trademark is used. For example, the production price in the automotive industry will be used for patents made available by Renault or Stellantis; the production price in the pharmaceutical or cosmetics industry for those from Sanofi; and the production price of concrete for those from Lafarge... In certain situations, consumer price indices will be used, particularly in the franchise sector (restaurants, hotels, clothing manufacturing, etc.). The standard formula remains similar:

$$\text{patent price} = (\text{royalty rate per unit price sold}) \times (\text{price index of the users' branch})$$

The challenge of compiling sample data is twofold:

- On the one hand, we try to collect average unit prices; in fact, several clients may use the same patent for various purposes, or several franchise stores may use the same trademark without the percentages charged as a percentage of sales being identical from one client to another: for example, the use of a franchise trademark may be defined by country or by broad geographic region by the trademark owner, who thereby defines their expansion strategy
- On the other hand, we strive to identify as precisely as possible the industries that use the patent or trademark by consulting with the owners in order to use the most specific price index possible and best reflect the price dynamics of the patent / trademark itself. Thus, in certain situations, multiple sets of trademark royalty rates may be collected to be associated with the prices of the various user sectors. When measuring exports, the goal is to identify the country/zone.

2.3.4 Tarification based on profit margin

In some cases, the tarification of the royalties of the patent / trademark is a percentage of the global margin or of the margin on a specific product which uses the patent. This case is handled in the same way as previous cases on turnover.

2.3.5 Summary table for measurements in branch 77.40

Type of royalties and measurement	Number of indexes
Percentage per unit	25
Percentage of turnover per unit	37
Percentage of turnover	256
Percentage of margin	48
Others	3
TOTAL	369

2.4. Tools, method and dissemination for branch 77.40

In addition to collecting data from businesses (369 sets of royalty rates and, for Case 2.3.2, sales prices), a large number of price indices are used in the calculations of the elementary indices for industry 77.40 (Cases 2.3.3 and 2.3.4):

- some are directly provided by the IPP calculation tool when estimating prices of patents or trademarks sold in France to specific sectors;
- others are consumer price indices (notably for lodging and hotels) and are imported from the unit responsible for these indices at INSEE
- still others are used to establish French export indices prices for patents and trademarks and require the use of appropriate indices in the client countries. These indices are collected from Eurostat, OCDE or directly from foreign statistical institutes (e.g., U.S. Bureau of Labor Statistics).

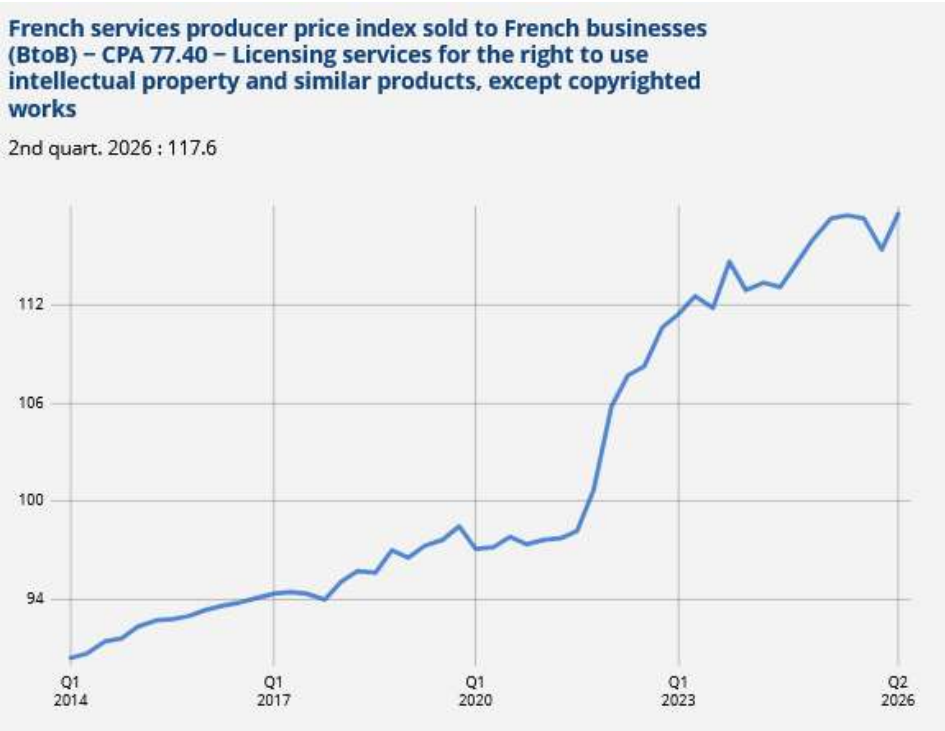
In addition, export data is often collected in foreign currency, which requires the use of euro exchange rates for the various currencies. For example, the index for a patent licence sold in Japan will use three time series:

$$SPPIe = SRS1 (rate) \times SRS2 (EUR/JPY rate) \times SRS3 (Japan IPP) / 100$$

In total, nearly a thousand data series are used to calculate changes in producer prices for industry 77.40.

Given the economic structure of the sector, as well as the composition of the sample and the business models of the companies interviewed by the survey engineers during their interviews, the 369 price series tracked cover only CPF codes 77.40.11 (Licenses for R&D results) and 77.40.12 (Licenses for trademarks and franchises). Two sub-indices for each of the sectors (C, CM, E1 and E9) are calculated for each of these sectors, which are then aggregated to form the four quarterly published indices (and released within 60 days).

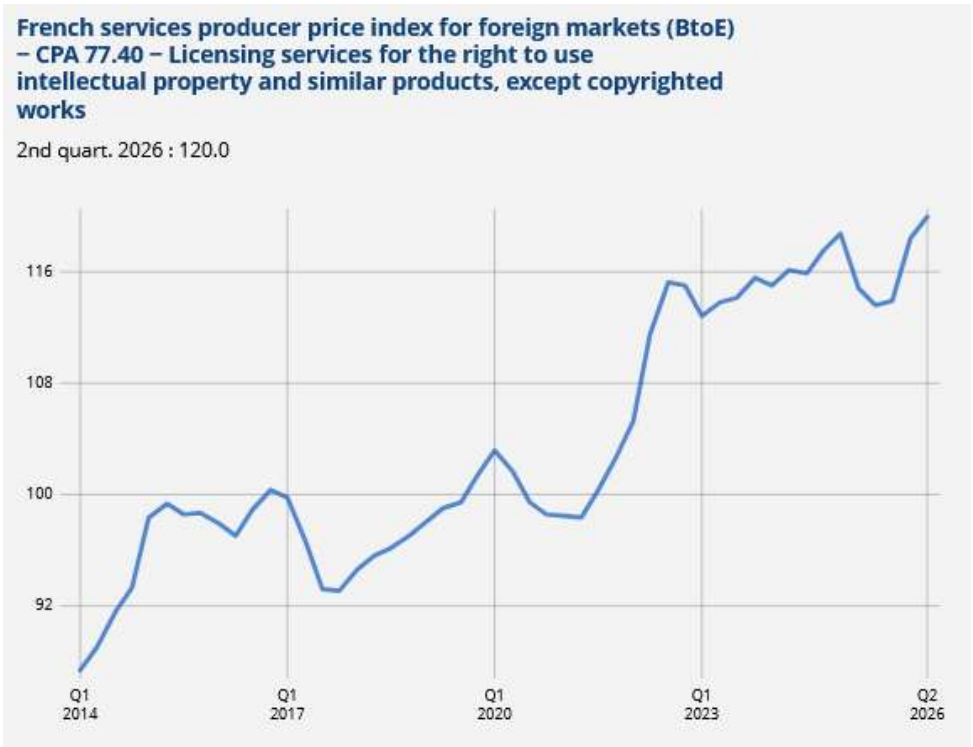
CM_7740: French services producer price index **sold to French businesses (BtoB)** – CPA 77.40 – Licensing services for the right to use intellectual property and similar products, except copyrighted works **Market price** – Base 2021 – Quaterly raw data – Identifier 010766597



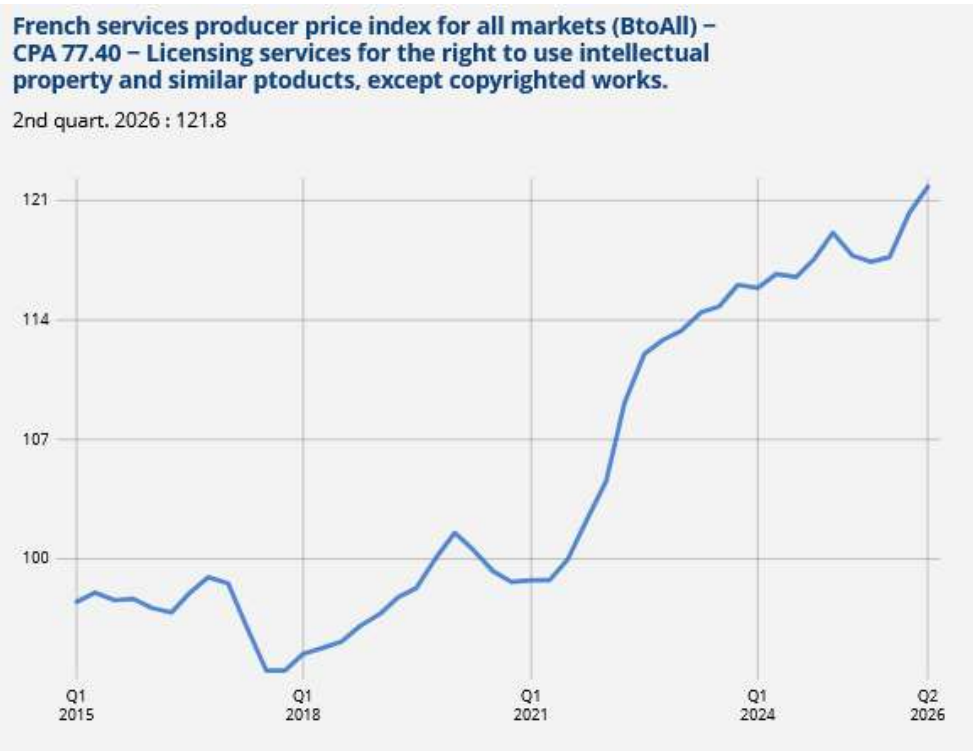
C_7740: French services producer price index **sold to French businesses (BtoB)** – CPA 77.40 – Licensing services for the right to use intellectual property and similar products, except copyrighted works **Basic price** – Base 2021 – Quaterly raw data – Identifier 010766452



E_7740: French services producer price index for **foreign markets (BtoE)** – CPA 77.40 – Licensing services for the right to use intellectual property and similar products, except copyrighted works **All areas** – Base 2021 – Quaterly raw data – Identifier 010766330



P_7740: French services producer price index for **all markets (BtoAll)** – CPA 77.40 – Licensing services for the right to use intellectual property and similar products, except copyrighted works. **Basic price** – Base 2021 – Quaterly raw data – Identifier 010766841



3. Evaluation of renewal and measurement

As mentioned earlier, it is difficult to calculate a coverage rate for sector 77.40, as sources can vary considerably in terms of the scope they cover. The €8.5 billion covered can be compared with the €22 billion estimated by the national accounts, giving an apparent coverage rate of 40 per cent. Nevertheless, the review of sector 77.40 has made it possible to re-include undisputed leaders in the sector who had not been identified in the previous review in 2018, as well as other major players who had not responded to the Opise survey. The face-to-face survey method, involving direct contact with the largest entities, facilitates these reintegrations by identifying the appropriate point of contact within large organisations, while also adapting the pace of data collection to the timing of tariff revisions: two-thirds of companies report their rate changes annually rather than quarterly. Legal proceedings naturally support this process. The response rate, which had fallen slightly over time and stood at 92 per cent in the first quarter of 2024, has recovered significantly to reach almost 100 per cent.

Furthermore, the quality of the data sets collected has improved significantly. Indeed, some of the companies surveyed have revised their calculation of intra-group royalties in order to comply with tax legislation designed to prevent tax optimisation. Consequently, some companies have revised their transfer prices and adopted an arm's length pricing approach (Article 9 of the OECD Model Tax Convention). Sanofi, for example, now reports a price calculated using the cost-plus method, one of the five methods recommended by OECD countries, while Michelin reports a calculation based on the profit-split method.

Traditional methods (based on comparisons with independent companies)

CUP	Comparable Uncontrolled Price Method — Compare prices charged between independent companies
Cost Plus	Cost Plus Method — Calculate the cost base and add a mark-up comparable to that earned in transactions between independent companies
Resale Price	Resale Price Method — Deduct the resale margin from the resale price to determine the purchase price

Transactional profit methods

TNMM	Transactional Net Margin Method — Compare the net profit margin earned in a controlled transaction with the net profit margin earned in comparable transactions between independent companies
Profit Split	Profit Split Method — Allocate the combined profit or loss from a controlled transaction among the different entities of the group based on their respective contributions, functions, assets and risks

It remains true, however, that, like other service sectors, sector 77.40 is characterised by a certain degree of heterogeneity, as the aggregation of fees for trade marks and patents may follow their own dynamics. The creation of two sub-indices makes it possible to monitor this, even though their quality is not considered sufficient for publication. Furthermore, exchange rates can cause significant distortions in the calculation of export prices outside the eurozone.

Finally, given the significance of public research in France, the question of how to incorporate it into the scope of the PPI arises. The CNRS and the CEA, in particular, receive income from licensing their patents. This is even an explicit component of their policy on the commercialisation of research.

The case of the CEA is particularly clear. The CEA states that its patents can be licensed to companies in exchange for royalties. Its licensing policy provides for various forms of remuneration, including lump-sum payments, royalties based on revenue, minimum payments, caps, and milestone-based payments, which can be combined depending on the project. The CEA also specifies that commercial and industrial exploitation licences are subject to financial compensation, intended in particular to cover intellectual property costs and provide a fair return to both the CEA and its inventors.

In addition to this extension, the issue of identifying small businesses is also a key concern. The forthcoming review will need to address the issue of how to expand the sample to innovative SMEs such as deep-tech startups.