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There are many issues surrounding the pricing of public services, which was the focus of the 14th issue of *APRP*. Translated here, the first study documented the major historical developments in pricing models within the public sector, while the second looked at the theme of pricing for public services through a cross-examination between Martine Long, lecturer in public law, and Laurent Probst, managing director of *Île-de-France mobilités*, the public body responsible for organising transport in the Paris region, which provided an opportunity to examine the definitions, objectives and challenges of public pricing. The first paper, presented below, documents the major historical developments in pricing models in the public sector, while the second article in the issue compares different pricing models in several key public sector areas (hospital care, nursing homes, public employment services...).

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This article focuses on the history of public pricing developments. It draws on public sector price modelling to show how different price-setting methods have been used over time, evidencing changes in the way government sees its role with respect to public service users.

How are prices set for public sector activities? And how have the pricing models for these activities evolved? Such are the questions that this article sets out to answer, drawing on the wealth of sociological literature on prices.[1] Prices can be defined in brief as the monetary counterpart for a right to purchase or use a good, service or labour. The approach adopted here considers prices from both their economic and social angles. For a better understanding of pricing mechanisms, we put aside the classic distinction between *market prices* and *administered prices*. This distinction reduces the diversity of forms of monetary trade and assumes a contradiction of principle between government and market that is inconsistent with observations on the ground.

The overview presented in this article highlights that public pricing is based historically on a variety of price determination models. To better grasp and understand their developments, we propose using a price typology built on two key criteria recurrent in sociological analyses of prices: 1) the moment when the price is set (either before or during the transaction), and 2) the level of competition (low or high) to which the price is subject. Cross-tabulation of these two criteria produces four types of prices, each based on specific price-setting mechanisms (see box).

Box: Four types of prices by price-setting method

Price-setting timing \ Level of competition	High	Zero or low
During the transaction	a. Self-regulated (stock exchange listing)	d. Negotiated (crate of fruit at a wholesaler)
Before the transaction	c. Composed (supermarket product)	b. Administered (train ticket)

The "self-regulated" price relates the most to the "law of supply and demand": the price is determined during the transaction in a situation where competition is in full play. The "administered price" is set before any transaction, often by a public institution. It is generally found in monopolistic economic activities. The "composed price", which is a type of price frequently found in the market sphere, is already displayed at the point of sale and is therefore known to potential buyers before the transaction. Its determination takes account of the prices set by competitors. Lastly, the "negotiated price" is set in a bilateral trade situation distanced, to a certain extent, from competition. It is therefore the negotiations between the parties that set a price during the transaction.

1 See Éloire and Finez (2021) for a summary.

The rates charged for public sector activities are generally considered to be *administered prices*. However, the typology usefully shows this interpretation to be an oversimplification. Historical pricing developments even reveal rather a tendency to turn public rates into *composed prices*. They may well be set mainly before the transaction, placing them in the bottom row of the table in the box. Yet although it stands to reason that competition would be zero or low – due to the fact that the activities are conducted by the public sector or with strict government oversight – a more in-depth analysis reveals that competition does sometimes have an influence, which would then make them composed prices.[2]

The first part of the article presents public pricing from the point of view of administered prices, focusing on their historical role as instruments to make public services affordable for all. The second part presents the transition to the composed price model. This change can be seen in historically monopolistic public activities: consideration of competition – real or mimicked – in price determination is one of the drivers of a new public economic management model. The last section discusses the most recent market shift in terms of price individualisation. This movement goes hand in hand with the liberalisation of public services and the boom in digital technologies.

Administered prices as instruments of affordability for all

History bears much evidence of administered price policies. Since the Antiquity, public authorities have endeavoured to control prices, such as wheat prices (Polanyi, 1977), and more generally prices for goods and services considered to be essential. Roman Emperor Diocletian is known for his edict promulgated in 301 AD, which fixed ceilings on prices for over 900 commodities and on wages for 130 different grades of labour (Michell, 1947). The medieval period was also marked by the adoption of various laws and regulations designed to freeze cereal prices, for example (Feller, 2011).

Although freedom of pricing started to take root in the 18th century, *customary prices* nonetheless continued to exist. In the event of an increase in food prices or a decrease in wages preventing the poor from buying bread, flour and cereals, the masses engaged in the intimidation of merchants as the community looked on (Thompson, 1971). This moral economy of the crowd moved into action when the authorities failed to regulate speculation by merchants.

The second half of the 19th century marked an important moment in the history of administered prices. In France, and in other European countries, the development of the modern state and the industrial revolution saw the birth and institutionalisation of public service networks and grids: postal services, rail transport, and gas and electricity distribution. These activities had the particularity of having high fixed costs and increasing returns to scale. As such, they were considered to be natural monopolies and were run by the administration or subject to close government oversight. In practice, access to these services was generally based on *tariff equalisation*, i.e. equitable distribution of costs among users (Jeannot, 1998). This system, based on a principle of national solidarity, is designed to provide access to public services for geographically isolated people by offering them the service at a selling price below production costs, which are high due to the low level of demand. In practice, the losses are offset by revenue from other users to whom the service is sold at a price higher than cost, this revenue being generally supplemented by revenue from taxes paid by all taxpayers, irrespective of whether they use the service.

Tariff equalisation is not a standardised doctrine (Poupeau, 2007). Price-setting practices for public services depend on the public policy objectives and concepts of tariff equity specific to each activity. These concepts are the result of social games and power relations between actors in the government and the companies concerned. The history of the French postal service in the 1840s shows that postage price based on letter *weight*, thereby neutralising distance in the pricing of the service, was not initially self-evident (Oger, 2000). By contrast, in the railway sector, a consensus formed in the second half of the 19th century around a dual principle: 1) for passenger transport, base the price on the *distance* travelled, and 2) for merchandise transport, do not apply tariff equalisation and set the price on *costs* and the *value of the merchandise* (*ad valorem* tariff) (Grall, 2004). In electricity, geographic equalisation whereby a uniform rate per kilowatt-hour applies across the territory (rural and urban areas) was not introduced until after the Second World War (Poupeau, 2007) when the private electric utility companies were nationalised.

2 The other two price forms, *self-regulated* and *negotiated*, can also apply in certain highly specific cases.

Composed prices as economic management tools

In the second half of the 20th century, prices made the transition from instruments of public service affordability to management tools for the neoliberal-oriented economy. In post-war France, tariff equalisation was the norm in the large national corporations such as Société Nationale des Chemins de Fer Français (SNCF), Charbonnages de France, Électricité de France (EDF) and Gaz de France (GDF). However, in the late 1940s, senior civil service corps engineers trained in mathematical economics set about trying to prove that the principle of subsidisation underlying tariff equalisation ran counter to the public interest. Its disconnection from production costs meant that the pricing method did not play its role as a consumer choice steering mechanism. Although they did not dispute that the nationalised companies should be monopolies, they called for a marginal cost pricing policy (Allais, 1943) on the grounds of economic efficiency. It was argued that differential pricing in accordance with marginalist economic theory[3] would bring selling prices into line with production costs and hence *mimic the market* despite the monopolistic nature of their activities. However, putting this idea into practice was no mean task since it assumed technical resources and considerable mathematical skills.

The first forms of differential pricing appeared at EDF in the 1950s (Yon, 2014) before spreading to the SNCF in the 1960s-1970s (Finez, 2014) and telecommunications in the 1980s (Bidet, 2010). Subsequently, at the turn of the 2000s, public grid and network services were gradually opened up to competition, thereby speeding the pace of pricing method changes. Yet the introduction of market mechanisms is not a linear process, as seen from the case of energy. The unexpected rise in electricity rates following market liberalisation forced the French government to reregulate under pressure from large industrial energy-intensive firms and once again regulate the rates (Reverdy, 2014).

Although the government continued to manage the sale of electricity, the transition to differential pricing saw a shift to another type of price: composed rather than administered. Whereas the price was still set before the transaction, it now factored in the level of demand compared to supply: prices rose in peak consumption periods and fell in off-peak periods.

New pricing methods were conceived following the "engineer-economist" period.[4] By making competition a pillar of the price-setting mechanism, these methods moved increasingly away from the pricing practices of the historical administered price standard. The overhauls of the healthcare funding system and the spending cuts that accompanied the spread of New Public Management make for an excellent analysis of these changes. In the 1980s, the government introduced a cost accounting system to record and measure hospital activities (Belorgey, 2010). It then established an Aggregate Operating Grant (DGF), which set a firm budget for each hospital. In 2004, it adopted the fee-structure per activity system (T2A) as the last step in the government's financial and accounting rationalisation for the hospitals. This system established *yardstick competition* between the establishments.

Assessments of the T2A, which was promoted by reformers in the 2000s as a way of reducing hospital spending and increasing cost effectiveness, have revealed a number of adverse effects (Burnel, 2017). As hospitals'revenues depend on their activity, the T2A can prompt unnecessary treatments and forms of patient abuse, especially in obstetrics (Juven *et al.*, 2019).[5] The new hospital pricing model is based on opaque cost measurements that do not take into account the diversity of hospital situations (Juven, 2016). This controversial fee-structure per activity system is still a subject of debate today among the players concerned (associations, elected officials, healthcare professionals, etc.). This observation does not

3 Marginalist economic theory, or neoclassical theory, posits that economic efficiency is achieved when price is equal to "marginal cost" (i.e. the cost of producing another unit of output), as is the case in a pure and perfect competition market. The definition of marginal cost was much debated in the large national corporations.

4 The term refers to French engineers who graduated from top French universities (such as the École Polytechnique), often from high-ranking technical corps (mining and civil engineering) and trained in economics. Engineer-economists played an important role in introducing new management methods in business and public administrations in France in the post-war decades (Fourcade, 2009).

5 The authors stress that, in obstetrics, "the fee-structure per activity system encourages acceleration of the process of childbirth, the disproportionate use of synthetic ocytocin (to stimulate labour) and caesarean sections."

apply to hospitals alone. A similar dynamic can be observed in retirement homes for dependent elderly people (Xing, 2018).

Medication pricing has also seen various changes. Drug prices were totally administered through to the 1980s in keeping with the notions of social justice applied by the state (Nouguez and Benoit, 2017). However, pharmaceutical firms became more involved in pricing negotiations in the mid-1990s when the emergence of a European common market for drugs started attaching more importance to competitive mechanisms. Firms participate in the price-setting process on the Economic Committee on Health Care Products (CEPS). Although the government oversees regard for extra-economic motives (moral, justice and public interest), the neoliberal climate has prompted it to let private players and market mechanisms play a growing role. Drugs are assessed and rated based on the estimate of the service they render. The most innovative drugs are assessed from a competitive angle considering the prices practised in other European countries. The oldest drugs and generic medicines are assessed in terms of production costs. The system has an incentivising purpose, since the high prices for drugs with therapeutic added value encourage manufacturers to adopt this type of production.

Price individualisation as ways of mimicking the market

The decline of the tariff equalisation model combined with the gradual spread of the differential pricing principle has opened up the public sector to new price-setting techniques borrowed from the market sector. The development entails using dynamic pricing devices to personalise prices, drawing on the exponential growth in IT techniques and tools. Prices are still set before the transaction, but pricing experts now take optimal consideration of competition. One of these new pricing models is the *yield management* marketing technique (also called *revenue management*). The purpose of such a device is to sell "the right product to the right customer at the right time for the right price" (Cross, 1997). Invented in the airline industry in the United States at a time of deregulation (Boyd, 2007), its principle is to maximise profits by increasing the number of airline seats sold and charging each customer the price closest to the amount they are willing to pay to travel.

Yield management was introduced in France in the 1990s for the sale of SNCF high-speed train tickets ahead of the European liberalisation of the railway market (Finez, 2014). The challenge was to use information technology both to transform each sale into a bilateral transaction (Callon, 2017) and to rebrand the product sold. The purpose was no longer to sell a transport service for a standard seat from point A to point B, but tickets for individual journeys with variable fares depending on the date of purchase, departure time and options chosen. This approach leveraged market power by placing customer demand in competition. Despite a great deal of political and social reluctance, the SNCF's senior management eventually managed to convince the transport ministry and user associations that the pricing mechanism complied with its public service missions. The yield management system has indeed filled more seats on trains and thereby has the potential to reduce average ticket prices.

Dynamic pricing has benefited from the development of e-commerce and the big data it generates (Ezrachi and Stucke, 2016). Sellers can track internet users by means of IP addresses, cookies and logins. Geolocation, operating systems and browsing histories have all become strategic elements of information in the quest for price personalisation. Since the 2000s, colossal resources have been invested in infrastructures to develop this new pricing method. Consultancy firms specialising in yield management strategies have mushroomed. This movement echoes the trend observed in electricity where liberalisation compelled suppliers to build increasingly sophisticated calculation capacities and take on pricing experts to be able to "formulate" prices (Reverdy, 2014).

Many users are hostile to the advanced forms of variable pricing found in France today in rail transport and other sectors. They go against the grain because they are at odds with the historical benchmark of the time-stable price. Dynamic pricing also effectively ranks user-consumers and prioritises demand from the most affluent customers, in contradiction to the principle of equal treatment. Experiments have been conducted in the United States to extend these mechanisms to new activities, such as electricity distribution (Irwin, 2017). In the absence of regulation, the scale-up of such a system could have devastating impacts such as forcing the poor, including the most vulnerable, to turn down their heating in the winter. If such a policy were adopted in France, it could mark the demise of the principle of national solidarity and toll the knell of the welfare state. Nevertheless, digital tools do

not necessarily have to serve neoliberal policies. Automation can be used for egalitarian policies.[6]

More generally, dynamic pricing often drives a change in user attitudes. Far from the public service model, the practice encourages users to take advantage of situations and see life as a series of opportunities to be grasped (Boltanski and Esquerre, 2017). This change driven by the new pricing methods is a challenge to the social contract forged in the 20th century. In a fragmenting society, the user is increasingly considered as a *homo economicus* and, by means of a theory-effect, increasingly behaves as such. In addition, it could be posited that the people who benefit the most from dynamic pricing systems are those who are already the most endowed with cultural, economic and social resources. In other words, yield management and the pricing mechanisms it generates could well further increase inequalities. Governments need to consider the effects on social cohesion of such systems driven by purely financial criteria.

Conclusion

This outline of the history of public pricing forms sheds particular light on the developments in policy and forms of social unity in contemporary France. The transition from administered to composed pricing has done nothing to change the fact that prices are displayed and set before the transaction. However, service users are now increasingly considered as customers, i.e. as economic agents capable of basing their consumer demand on price signals, such that the particularities of pricing methods in the public sector are fading. This trend could no doubt be interpreted as an expression of the "standardisation" of businesses and public administrations (Coutant et al., 2020).

"Price formulation" (Callon, 2017) as an economic behavioural management instrument is basically evolving in two different directions. First, it is increasingly factoring in competition, to the extent of being equipped with the means to mimic the way a competitive market works using powerful calculation resources. Second, it is personalising prices using the mass of data generated by the digitalisation of the economy. In both cases, the use of information and communication technologies is decisive. Yet the use of these new tools in no way determines the price-setting philosophy. Pricing policy orientations are steered by more than just accounting choices. They also reflect a certain concept of government and new representations of economic justice and efficiency associated with changes in forms of governance among the politico-administrative elite and senior management in public sector establishments and corporations.

The way public pricing methods have developed since the 1980s could be seen as way to analyse historical changes in the economy. Administered prices and tariff equalisation practices may well be far from a thing of the past, but their decline in favour of prices factoring in competition is redolent of neoliberal ideology (Denord, 2002) whose agenda has been consistent with government action in recent decades. And note that this is government built on a new role of purposefully reducing its action in the economic sphere and developing to the maximum the use of market mechanisms by legal means. By factoring in competition, public pricing is becoming a real economic management instrument. It remains to be seen how pricing methods will develop following the economic, social, health and geopolitical crises of this last decade.

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6 Such is the case, for example, in Portugal where energy rates are based on user-taxpayer incomes: since the 2010s, automatic reductions have been applied to electricity rates for the most vulnerable, hence reducing inequalities and the rate of non-beneficiaries of the support payments (Carthéry, 2020).

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