

1. Introduction

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The past 15 years have witnessed a fundamental change in the way governments think about infrastructure. In rich and poor countries alike private ownership and operation have been replacing public provision, while monopoly has been giving way to competition. Concessions have played a central role in these changes. The concession documents themselves have been used to specify the rights and obligations of the private firms, while the bidding processes that have been used to award concessions have brought competitive pressures to bear in previously sheltered industries.

1.1 Defining Concessions

Throughout the report we use *concession* broadly to refer to any arrangement in which a firm obtains from the government the right to provide a particular service under conditions of significant market power. A concession is thus a device that can be used to create competition for a market, when competition in the market is not operating. Indeed, for the purposes of this report, concessions can be thought of as legal arrangements suitable for creating competition for a market.

According to this definition, concessions need not involve the private sector, since governments can award concessions to public enterprises. Concessions are typically given to privately owned companies, however, and concessions to private firms are the focus of this report.

For our purposes the following arrangements may be counted as concessions: leases, affermage (a form of lease used widely in France), build-operate-transfer contracts (BOTs), and divestitures with revocable licenses to operate. When we

refer to concessions in the narrower sense, in which the concessionaire has investment responsibilities, we use pure concession or concession *stricto sensu*. At the same time there may be arrangements commonly called concessions that fall outside the scope of this report: concession might be used to refer to the rights to operate in a market, even when those rights are not limited in number and thus confer no market power.

1.2 Early Concessions

Concessions have gained in popularity recently, but they are an old innovation. The modern theory dates back at least to the nineteenth century and Edwin Chadwick's (1859) discussion of competition for the market. The famous nineteenth century economist Alfred Marshall outlined the case for concessions as follows:

A public authority may be able to own the franchise and, in some cases, part of the fixed capital of a semi-public undertaking, and to lease them for a limited number of years to a Corporation who shall be bound to perform services, or deliver goods, at a certain price and subject to certain other regulations ... the special point of the proposal is that, where possible, the competition for the franchise shall turn on the price or the quality, or both, of the services or the goods, rather than on the annual sum paid for the lease. (quoted in Ekelund and Hebert 1981: 471)

The practice of concessions dates back even further, however, to the middle ages (see Bezancon 1995). Moreover, in the past two centuries infrastructure networks in water, power, gas, and rail were often developed by private firms that, incidentally, bore substantial market risk with limited protection from competition. We mention a few early concessions below without trying to be comprehensive or necessarily representative.

Private companies developed much of the early water infrastructure in France, Britain, and the United States. In 1777, for example, the French government gave the Perrier brothers a 15-year concession to collect and distribute water to households in parts of Paris. They took the water from the Seine using English-made pumps, transported it through pipes of wood and steel, and then delivered it in barrels—that is, until they ran into financial trouble and their firm was nationalized (Bezancon 1995). The next century saw the founding of the well-known French firms, *Compagnie Generale des Eaux* and *pro-Lyonnaise des Eaux*.

In London there were as many as six private water companies operating by the 1820s (Foreman-Peck and Millward 1994). And in the United States at the dawn of the nineteenth century, 15 of the 16 waterworks that had been constructed were private. By the end of the century, however, governments had become the dominant force in water supply, at least in the cities (Jacobson and Tarr 1995:11).

Local private firms were responsible for developing most of the electricity utilities in Brazil, Chile, Costa Rica, and Mexico—Colombia being the only exception among a group of

five reviewed in one study of the development of the industry (Cavers owner-and Nelson 1959). The same was true of the United States. The early power companies were privately owned and they operated in competitive, largely unregulated, commercially risky environments. They had franchises, but no exclusive rights to serve. Although they were subsequently regulated and protected from competition, they remained private. In the gas sector in the United Kingdom, to take another example, exclusive franchises were never legalized, and by 1850, 14 separate private gas companies were operating over the whole London metropolis (Foreman-Peck and Millward 1994).

The transport sector offers many early examples of private infrastructure construction and operation. In France the king concessioned roads and bridges. The concessionaires collected tolls in return for maintaining the routes—often being criticized for doing the former with more zeal than the latter. Canals were also built in France under concessions as early as the seventeenth century. The concession document established the tariff that could be charged and the timetable for construction; the entrepreneurs building the canal bore market risk. Later, in many Latin American countries such as Argentina, Brazil, and Uruguay, private developers from Britain, France, and the United States built many of the early railways. The history of rail in Mexico illustrates the common cycle of public and private ownership:

The Diaz regime undertook initially to promote railways either directly or through subsidies to state governments; but the results were slow to appear. So after 1880 policy

shifted to subsidies to private companies, partly in the form of land grants, which attracted substantial amounts of British and American capital. Private construction by numerous companies produced a rather disorganized network with considerable duplication of routes. So government gradually attempted to consolidate companies and buy out part of their capital. The eventual result was a national railway system (Ferrocarriles Nacional de Mexico, formed in 1909), with majority government ownership but continuing private participation from the United States and Great Britain (Reynolds 1985: 99-100).

Later, the Mexican railways were completely nationalized. Now, they are being privatized again. In the United States a similar story emerges. Most of the public transit systems built in the late nineteenth century were private, as were many roads. According to one account, the "heyday of privately owned and operated roads supported by user fees came during the early decades of the nineteenth century. Many roads were built and maintained by state-chartered turnpike companies... [But] partly as a result of competition from canals and railroads by the 1860s, most private toll roads had been turned over to states and counties for operation from general tax revenues" (Jacobson and Tarr 1995:3).¹

1.3 The Rationale for Concessions

Concessions should be used in areas where they are most likely to aid development. Although they can be used in any industry and were, for example, used in France to license butchers and

bakers in the Middle Ages, they are most likely to help development when they are used to regulate natural monopolies—that is, services that can be provided more cheaply by a single firm than by two or more.

1.3.1 Natural Monopoly

When markets can be served efficiently by several firms—when they are naturally competitive—ordinary competition usually works well. But when they are naturally monopolistic ordinary, head-to-head competition does not operate. Competitively auctioned concessions in these industries allow some of the benefits of competition to be brought to bear in the absence of direct competition between firms. That is, they substitute competition *for* the market for competition in the market.

Take, for example, a water concession awarded to the bidder offering to supply water at the lowest price to consumers. If it is well-designed, it encourages efficiency in two ways that parallel the effects of competition in the market. First, it leads firms to offer to sell water at a price that covers their costs but not much more—just as ordinary competitive pressures keep prices down and limit profits. Moreover, the government does not need to estimate the lowest profitable water price and then regulate to prevent the monopoly supplier from charging a higher price; through competitive bidding, the firms reveal that price themselves. Since firms usually have better information than regulators, the price that arises from competitive bidding is probably the best available estimate of the appropriate price. Second, a concession encourages firms to produce water cheaply, since inefficient firms cannot win the

bidding and remain profitable. To win, firms are forced to offer a price for water not much higher than their cost of supplying it. The firm that wins is therefore likely to be one of the most efficient.²

What about industries that are neither natural monopolies nor highly competitive but are most efficiently served by, say, just two firms? If the government knew the industry was best served by just two firms and knew that these firms would charge high markups in the absence of regulation, it might be beneficial to award two concessions for the industry. The award of the concession could then be used to create competition for the market, where competition in the market would operate but not very effectively. This reasoning may underlie the award of a small number of licenses in mobile telecommunications. Concessioning seems less likely to improve on free entry and unregulated prices in such cases than in naturally monopolistic industries, however, since the market failure is smaller and more likely to be out-weighted by regulatory failure.

1.3.2 Natural Monopoly and Infrastructure

The following infrastructure sectors are usually considered natural monopolies and are therefore the most suitable candidates for concessioning:

- Water distribution.
- Power transmission and distribution (as opposed to power retailing or "supply").
- Gas transmission and distribution (as opposed to gas retailing).

- Railway infrastructure (the tracks and stations, for example).
- Roads.

Other infrastructure businesses, however, are potentially competitive, and concessions may not be the best solution for them:

- Power generation.
- Gas production.
- The retail supply of both gas and power.
- Long-distance and mobile telecommunications
- Rail services (as distinct from the tracks).

Concessions are not necessarily the wrong option in these sectors. Although power generation is potentially competitive in most countries, for example, some electricity markets may be too small to support effective competition in the market. In those markets, a competitively awarded concession may be the best option. But in the potentially competitive industries listed above governments should think carefully about whether ordinary competition can be made to work by reforming market structure before turning to a concession.

1.3.3 Concessions and the Reform of Market Structure

Since one infrastructure sector may contain potentially competitive and inherently monopolistic segments, it is sometimes useful to unbundle the segments (see table 1.1 for some examples). Then, competition in the market may work

Table 1.1 Examples of market structure reform

Sector	Reform	Country examples
Power	Separating generation from transmission and creating competition in generation	Argentina, Australia, Colombia, New Zealand, United Kingdom
	Permitting free entry in generation	The countries above plus the United States
Gas	Separating production and supply from transmission and distribution	Argentina, Colombia, Mexico
	Permitting free entry in gas transmission	Chile, Germany, New Zealand
Telecommunications	Separating local from long-distance service	Argentina, Hong Kong, United States
	Permitting free entry in basic services	Australia, Chile, New Zealand, United Kingdom
Rail	Separating infrastructure (track) from rolling stock	Sweden, United Kingdom
	Separating railway lines by geographical region	Argentina, Mexico

Source: World Bank Staff.

more effectively in the competitive sectors, while competition for the market is used for the naturally monopolistic sectors. Within the potentially competitive sectors an existing company may also be broken up into several competing firms.

Before awarding concessions in an infrastructure sector, therefore, governments should consider what is the best structure for that industry. Does it make sense to unbundle the industry vertically—separating an upstream segment, such as generation, from a downstream segment, such as transmission? Does it make sense to unbundle some of the segments horizontally—creating, for example, several generation companies out of one? Only when these questions have been answered should concessioning begin.

1.3.4 Reputation

Concessions generally have a limited term, at the end of which they are put out to bid again. When the incumbent concessionaire has the opportunity to compete in the re-bidding, it has an extra incentive to perform well during the term of the original concession, since by performing well, it improves its chances of being awarded the concession again.³ If one firm competes for many concessions, it has a further incentive to perform well in order to qualify as a bidder for other concessions. Governments can therefore better harness the benefits of reputation by awarding several concessions in a single industry, each for a different region, and permitting international firms to compete for local concessions, since these companies have valuable reputations they want to protect.⁴

1.3.5 Exclusivity

Concessions are best suited, we have said, to industries that are natural monopolies. A question that arises is whether concessions for natural monopolies should confer a legal monopoly.

1.3.5.1 What happens in practice?

Most often, concessions give the winning firm the exclusive right to provide the service in question, and this legal monopoly typically endures for the length of the concession. There are, however, exceptions.

First, the period of exclusivity sometimes ends before the concession. One example is the Venezuelan telecommunications concession, in which the holder of a 30-year concession has exclusive rights for just 9 years. Another is the Abidjan-Ougadougou (Côte d'Ivoire-Burkina Faso) railway concession, which gives the concessionaire the exclusive right to run trains on the tracks for the first 7 years of the 15-year concession, after which other operators must be permitted to enter (Mitchell and Budin 1995).

Second, some concessions give no legal monopoly at all. In addition to the early power franchises in the United States, Compafiia de Telefonos in Chile was awarded a 50-year nonexclusive concession in the 1930s (Guislain 1997: 210). And there are several modern instances of firms in naturally monopolistic infrastructure industries that do not enjoy legal protection from competition. In Germany and Chile gas transmission companies have no legal monopoly. In New Zealand exclusive legal franchises have now been removed for most infrastructure services, including the

transportation of gas and electricity, at both the transmission and distribution levels.

1.3.5.2 Should governments grant exclusivity?

Although it is common for governments to grant exclusivity, it is not clear whether governments aid development by doing so.⁵ The arguments for not granting exclusivity are, on the face of it, strong. Even in natural monopolies the threat of entry can sometimes spur an incumbent monopolist to perform better. (Technically, the threat of entry will be more valuable the more contestable is the market—or the smaller are the sunk costs of entry into the market.) New firms may choose not to enter, but their ability to do so if the incumbent offers poor value for money keeps the latter on its toes. Similarly, the possibility of entry by other firms can encourage an incumbent to extend service to unserved areas within the franchise boundary more quickly than it would otherwise—to ensure that it does not lose business.

Moreover, permitting entry reduces the costs of mistakenly concessioning an industry that turns out to have been—or because of technological change becomes—naturally competitive. If the industry really is naturally monopolistic, exclusivity may make no difference. But if the industry turns out to be potentially competitive, exclusivity prevents helpful competition.

What are the arguments for granting exclusivity? At least three can be made.

- Sometimes concessionaires are required to offer services at low prices to households but can charge businesses more.

Other times, they are required to charge everyone the same price, even if the costs of service differ—as may happen when remote rural customers pay the same as city dwellers. At still other times existing customers may subsidize the cost of expanding the network to reach new customers. In all of these cases exclusivity prevents new firms from undercutting the prices paid by the over-charged customers and thereby depriving the concessionaire of the revenue needed to subsidize the others. Using the jargon, it prevents cherrypicking or cream-skimming.

- Because competition tends both to lower firms' profits and introduce new risks, exclusivity rights make concessions more attractive to potential bidders and their financiers. The government can therefore concession an exclusive business more easily or get more money for it. When other circumstances are unfavorable—because of severe political risk, for example—exclusivity might make or break a deal.
- Finally, exclusivity can prevent second and third firms from inefficiently entering industries that are naturally monopolistic (that is, most efficiently served by just one firm). Although the threat of entry may be helpful, its occurrence may be wasteful. In the nineteenth century, for example, competing companies laid parallel water pipes in the United Kingdom and parallel railway lines in Germany, which on the face of it seems inefficient.⁶

These arguments are correct, as far as they go. Yet they do not by themselves imply that concessionaires should have

exclusive rights to serve. Although exclusivity can resolve certain problems, there may be better solutions. Legal monopolies are only one way of permitting one class of customers to subsidize another in order to achieve redistributive goals; there are others that are generally less costly (see section 3.3.5). Similarly, there may be other ways of increasing the attractiveness of a concession to bidders that operate are less harmful than exclusivity—such as improving the regulatory regime and eliminating costly investment obligations. And although there may be cases in which inefficient entry would occur without exclusivity, the government needs to weigh this risk against the risk of stifling beneficial competition. Some inefficient entry and duplication may be a price worth paying for the benefits of competitive pressure.

1.4 A Comparison of Different Types of Concessions

Concessions in the broad sense used here come in different guises. As well as pure concessions (concessions *stricto sensu*), there are arrangements called franchises, operating concessions, management contracts, leases, affermage, BOTs, and so on. The names are not always applied consistently, nor are they always helpful. What really matter are the incentives and opportunities created by the contracts.

1.4.1 Types of Concessions

One key difference among various concession arrangements is the nature and extent of the risk they transfer from the government to the concessionaire, and we can classify them accordingly,

- *Management contracts with incentive payments.* When management contracts provide for a performance-related payment, part of the operating risk of the business may be transferred from the government to the concessionaire, since the concessionaire's profits may vary with the operating performance of the company. But significant operating risk remains with the government as long as the government's financial returns still depend on the firm's operating profits.
- *Leases.* In a lease, as we use the term, the concessionaire is paid no fee by the government. The concessionaire's profits depend directly on the operating profits of the firm. Operating risk is thus fully transferred to the concessionaire. The government still maintains responsibility for investment and thus bears investment risk.
- *Pure concessions, BOTs, and rehabilitate-operate-transfers (ROTs).* In these arrangements the concessionaire undertakes investments as well, and both operating and investment risks are substantially transferred to the concessionaire.⁷

There is also a distinction between retail and wholesale concessions. In a retail concession the concessionaire sells services to the public.

Distribution concessions in electricity, water, telecommunications, and gas are examples. In a wholesale concession the concessionaire sells to another entity (often a government agency or state-owned enterprise), which in turn sells to the public. Concessions for independent power projects

and for bulk water supply are examples. The concessionaire's rights and obligations and the risks it bears tend to vary systematically between retail and wholesale concessions.

1.4.2 Similarities and Differences

Because the detailed contractual provisions concerning risk transfer, duration, exclusivity, and so on are what matters, contracts with different names can have similar effects. A contract called a *concession*, for example, may closely resemble one called a *management contract* in its incentive effects if its contractual clauses effectively guarantee the concessionaire revenue and compensate it for cost increases.

Further, a divested business needing a license to operate may be in much the same position as a firm with a fixed-term lease. British and French water policies illustrate the point nicely. Although the British system is described as a divestiture and the French as concessioning, the two regimes may have similar economic effects. In Britain the government sold water-distribution assets to private companies, whereas in France local governments remain the legal owners of the assets and lease them to private water companies for limited periods of time. When the lease expires, typically after 15 to 30 years, the local government reawards it, possibly to a different company. On the surface, the two policies may thus seem quite different.

Yet in practice the French companies seldom lose their concessions when they are rebid, and the British companies have no guarantee of continued operation. The divested British firms need a license to operate, and the licenses they were given at the time of privatization will expire after 25 years, in

2014. After that date the government can revoke a company's license, as long as it has given 10 years' notice, even if the company has done nothing wrong.⁸ The two systems are thus much more similar than they might seem.

The possible resemblance between divestiture and concession raises another issue. Sometimes governments believe that the best policy would be to "fully privatize" a given public enterprise, but fear that "privatization" would be too unpopular. As a result, they may choose to lease or concession the business instead. As the previous discussion suggests, however, there may be little practical difference between policies described as divestitures and those described as concessions. What both the government and its critics should be concerned about are the details of arrangements.

Finally, contracts that go under a single name may have quite different effects. Contracts described as concessions, for example, typically transfer investment risk to the concessionaire. But not all operators of concessions have investment obligations.

These possibilities imply that in designing or analyzing a concession one must look beyond the arrangement's name and consider the details of its provisions relating to rights, obligations, and the allocation of risk. It does not imply, however, that the legal instrument used to concession infrastructure is irrelevant. A country's laws may treat differently two arrangements with seemingly similar functions. Some arrangements, for example, may be governed by administrative law, others by the law of private contracts, with significant implications for the modification or enforcement of the contract.

In Turkey the government wanted contract law to govern its BOT contracts with private power producers, but was frustrated by a finding of the Turkish courts that the arrangements were concessions under the Turkish constitution and therefore subject to administrative law.

1.4.3 Differences between Concessions and Other Rights

Concessions must be distinguished from other rights that business may need in order to operate. For example, a power concessionaire must be able to string wires over land that it does not own, and a water concessionaire must lay pipes under other people's land. Similarly, companies may need town-planning, resource-use, or other environmental permits to carry out their business efficiently. These permissions may require approval from a government agency distinct from the conceding authority. They are discussed in section 2.2.

Notes

1. For a historical perspective of the cycle of public and private ownership in infrastructure see Klein and Roger (1994).
2. For more on the rationale for concessions, see Dnes (1995).
3. For more on the award and re-award of concessions see chapter 4 and section 3.8, respectively.
4. For more on reputation and concessions see Zupan (1989).
5. If the government expects firms to bid for a concession, it must give them something of value. Frequently that thing is an existing business. But if the government has no

existing business to give to the winning bidder, it is hard to see how a concession is possible without exclusivity. A concession to supply electricity to a currently unserved town could not be awarded, for example, unless it conferred exclusive rights upon the winner. Otherwise, interested firms would have no need for the concession and instead of bidding for it would simply start up business. The question that arises in this case is whether the government should award an exclusive concession or instead rely on free entry

6. Economists have shown theoretically that in certain circumstances more than one firm will be able profitably to enter a naturally monopolistic industry, even though provision by just one firm would be cheaper. See Train (1991).
7. For more on these different types of contracts, see Guislain and Kerf (1995).
8. See <http://www.open.gov.uk:80/ofwat/appt>.