

Viewpoint

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Bidding for Concessions—The Impact of Contract Design

This is the first in a series of four Notes on bidding for infrastructure concessions. The other three in the series examine whether to auction or negotiate, how to avoid the winner's curse, and the case for periodic rebidding.

Infrastructure concession contracts set out the performance obligations and rights of concessionaires and the incentives and risks under which they operate, including pricing arrangements. The clarity with which these terms can be defined determines whether there is likely to be renegotiation after contract award, which may undermine the significance of the initial auction. The design of incentives and risk allocation will affect first the intensity of competition and then the sustainability of the original contract. This Note examines these issues.

The definition of what is being auctioned should cover all the specifications and incentives that govern the concession, whether they are included in the concession contract or in laws, regulations, or elsewhere. Where concessions are new, concession contracts may run to hundreds of pages and several volumes, as in the case of the Buenos Aires water concession. In France, by contrast, a long tradition with concessions has led to short documents that set concession-specific terms. Many other rules governing concessions are found in more general laws or the precedents developed by more than a hundred years of relevant jurisprudence.

Performance specifications

A key goal in drafting contracts is to ensure that contracts are as clear and comprehensive as possible so as to reduce the likelihood of renegotiation. At the same time contracts need to give the concessionaire the freedom to come up with efficient and innovative solutions.

Some argue that in the ideal arrangement a conceding authority would define clear and unambiguous performance targets for service delivery by the concessionaire, but not make rules on how to achieve them. That sounds right in principle for concessions governed by some form

of price regulation. Where prices are regulated, some regulation of service quality is also needed to prevent the concessionaire from reaping excess profits by skimping on quality.

But it is difficult to be clear and comprehensive in defining service targets. Governments tend to be nervous about providing only general performance obligations, fearing that the concessionaire will do less than they deem necessary. An example in the United Kingdom helps show why. In the competition for a build-operate-transfer (BOT) contract for a prison, granted under the country's private finance initiative, it turned out that the winning company's bid was based on a plan to house several prisoners in each cell. The government had wanted single occupancy, but had forgotten to specify this in the tender documents.

Governments often prefer to specify the concessionaire's obligations not only in terms of the type of service to be delivered, but also in terms of the investments to be carried out in support of these objectives. This carries obvious risks. When the Argentine government privatized the freight railways, it set investment targets for them. But because the market did not develop as expected, the investments were rendered superfluous.¹





Contract renegotiation has often been necessary in cases like these. But it could have been avoided with greater care in contract design. Extensive consultations about specifications with technical experts and clarification meetings with bidders are often helpful in arriving at sound contracts.

But in some cases contracts may need to specify input requirements, not just performance targets. For example, where service quality cannot be adequately measured, technical solutions might have to be prescribed to ensure minimum standards. For some coal-fired power plants where emissions could not be monitored effectively, the installation of scrubbers for sulfur extraction has been required to meet environmental standards. The issue is in principle the same with any health, safety, or environmental regulation governing any type of business.

Investment obligations also appear in concession-type contracts where there is no price regulation. Oil exploration leases often prescribe work programs; if lease holders fail to actively explore for fuels, they are required to relinquish the right to explore all or part of a particular area. And governments may require holders of radio spectrum licenses to either use them or return them. Such provisions appear to be aimed at preventing private parties from bidding for concessions so as to restrict supply or hold up development of an integrated system and thus exercise market power.²

After contract award financiers may insist on contract adjustments to make projects financeable. Completing financing arrangements before contract award tends to be prohibitively expensive. Careful contract design can make financing fairly easy. In the heyday of independent power projects in the United States, some highly standardized contracts reached financial closure within a few weeks after contract award without material change to agreed terms. But when a contract is not well designed, financial closure can take years to negotiate and the contract may be materially changed.

Careful drafting is essential to create contracts that are resistant to renegotiation and can adjust to changing circumstances without undermining the original terms of the contract award. Unsurprisingly, defining specifications is one of the most problematic, contentious, and time-consuming tasks in preparing many concession contracts. Even with the greatest care those drafting a contract may forget aspects of a problem. And complete consideration of all possibilities (including genuine innovation by bidders) may be just too cumbersome and costly—not least in lawyers' time. Contracts are thus unlikely to cover all contingencies.³

Incentive schemes

Incentive systems under concession contracts include cost sharing and pricing arrangements, penalties or incentive payments linked to performance standards, bonding devices (such as performance bonds), and insurance arrangements. The incentives should be set and aligned so that the concessionaire manages the risks and opportunities it faces in a way that is in the interests of the conceding authority.

Risks outside the concessionaire's control

Risks that the concessionaire can control or assess less effectively than its customers generally should not be shifted to the concessionaire. When the concessionaire and customers have a similar ability (or inability) to control or assess a risk, the decision on who would assume it should depend on who can bear the risk at a lower cost. Shifting risks that the concessionaire cannot control to customers does not increase their net costs (assuming equal costs of risk bearing for consumers and investors) and it reduces the likelihood of contract renegotiation. The cost of purchases over which the concessionaire has no control, for example, are generally passed through to the customers through price adjustment formulas.

This principle for distributing risks is widely accepted, though the determination of what risks can or cannot be meaningfully controlled

by the concessionaire can give rise to intensive negotiation. In practice, hybrid approaches are often used. Consider the risk of general price inflation. This risk is sometimes passed to consumers, which makes sense when it is unclear to what extent the concessionaire can control costs. By passing through a general benchmark for cost increases, the concessionaire maintains the incentive for the concessionaire to beat the benchmark by controlling costs, in contrast to a concession in which remuneration is set by a rate of return applied to the concessionaire's cost base (rate base).⁴ At the same time the concessionaire need not ask for the excessive risk premiums that would be required if all cost risks were shifted to it under a fixed price scheme.⁵

In an application of the general principle, Engel, Fischer, and Galetovic (1996) have argued that where demand risk cannot be controlled or assessed by concessionaires, they should not be exposed to it. This could apply, for example, to traffic demand for toll roads or to power demand when the concessionaire supplies a monopoly that has its own, competing power generation (the case for many independent power projects or BOTs). Thus an optimal scheme would auction off the road or the power plant not on the basis of the lowest toll or price of power but on the basis of the least present value of revenue. The concession would end when the concessionaire reached that level of revenue. If contract renegotiation ever became necessary, it should be easy to determine what revenues the concessionaire had not yet earned. This amount would determine the optimal compensation payments, limiting the ability of negotiating partners to extract excessive payments during renegotiations. This scheme is being applied to the Chilean road concession program. A similar scheme has been used for the Dartford tunnel in the United Kingdom.

Cost sharing and bidding intensity

There is a tension between pricing or cost sharing rules and the intensity of expected competition (McAfee and McMillan 1988). At one

extreme pure cost-plus rules render competition meaningless. If concessionaires face no possible exposure to cost increases, they would all bid low and later claim cost increases. But if concessionaires have to share even a little in cost increases, the most efficient firm would be selected in a competitive auction because it could make the lowest bid.

When much of the cost is shared with consumers, even inefficient firms can make fairly low bids, putting pressure on the most efficient firm, and risk-averse firms will consider bidding. Consider a project in which the costs (including desired profit) of the high-cost firm would be 200 and the costs of the low-cost firm 100. Under a fixed price bid the low-cost firm could win with a bid of 199, just beating the high-cost firm's bid of 200. If consumers were to share costs 50-50, the winning bid would be 99, with the low-cost firm just beating the high-cost firm's offer of 100 (half of 200). Consumers would pay half the cost of the winning firm, 50, plus the bid price of 99, for a total payment to the concessionaire of 149. Without cost sharing, the payment to the concessionaire would be 199.

Thus greater cost sharing increases the intensity of competition and benefits the conceding authority, the customers, or both. But these gains need to be balanced against the weaker incentives for the concessionaire to control costs. Consequently, fairly generous cost sharing would be advocated for high-risk, complex projects, and fixed price arrangements for "standard" ventures. For example, Eurotunnel issued the main construction tender with cost sharing, while natural-gas-fired independent power plants might be bid on the basis of the lowest present value of revenue.

In practice, companies tend to favor more cost sharing than conceding authorities, which tend to favor arrangements close to fixed price contracts. These preferences can be largely explained by firms' desire to shift costs to others and by authorities' concerns about weak incentives for cost control. Governments rarely



consider the effect on bidding intensity. And among companies, low-cost firms can be expected to argue for approaches closer to fixed price rules, and high-cost companies for approaches closer to cost-plus rules.

Postaward contract adjustments and bonding mechanisms

Even the best-designed long-term concession contracts usually have to be adjusted at some time during their lives, and sound contracts contain mechanisms to deal with such adjustments. They may specify the conditions under which renegotiation may take place and the principles on which it may be based. For example, contracts for French water concessions stipulate that prices may be renegotiated if unforeseen events occur or at certain intervals, such as every five years. In this respect concession contracts are no different from utility regulation more broadly. Utilities in the United Kingdom may see prices adjusted through interim assessments following unforeseen shocks or during planned price reviews, say every five years.

Renegotiation occurs in a quasi-bilateral monopoly setting. Concessionaires can negotiate only with the government, and governments may find it difficult to turn to alternative concessionaires. Governments are often reluctant to terminate a concessionaire, because they are afraid that basic services, such as water supply, may be interrupted. To deal with such concerns, the concessionaire can be obligated to continue providing service until a new concessionaire has been chosen. In Colombia this obligation is imposed by a general law governing concessions.

But governments still worry that concessionaires will not fulfill their obligations. Performance bonds are one way to prevent partners from walking away from a contract. They also limit bargaining options after contract award. In a water concession in Latin America several partners in a consortium walked away from the concession when a dispute with the conceding authorities became unbearable. But key players

stayed and tried to make the concession work, not least because of the risk that a large performance bond would be called.

Concessionaires, on their part, try to bind conceding authorities by requiring them to commit to international arbitration under conventions, which make arbitral awards enforceable. They might also ask for special payment or performance guarantees to ensure that counterparties can meet their payment obligations.

- ¹ Governments also sometimes prescribe technical solutions. In an Argentine gas pipeline BOT project in the early 1980s, COGASCO, the government required a certain method for extracting propane, butane, and other gas liquids from the gas stream. The private concessionaire found a more efficient way to extract liquids. For this and other reasons it was later accused of breach of contract.
- ² Of course, an oil field may go unexploited for a time not because the company wanted to gain monopoly power, but because it simply wanted an option to explore later. Nevertheless, the notion of hold-up problems is central to an understanding of concessions. Many transactions must occur in a bilateral monopoly setting, where there is only one buyer and one seller, or in settings that approximate this situation. Such transactions may be held up by parties trying to extract maximum rent, particularly when comparator prices from functioning markets are lacking. To prevent or reduce such wasteful bargaining, it may be socially useful to impose limits on the bargaining—the extreme, the option of expropriation.
- ³ Transaction costs for concession-type projects—for development activity, negotiations, and the like—tend to be high. Where concession arrangements are reasonably well understood, transaction costs may be 3 to 5 percent of total project value. In countries where the concept is new, initial transaction costs exceed 10 percent of project cost (Klein, So, and Shin 1996).
- ⁴ At the beginning of the twentieth century many concessions had no inflation indexation. When prices began to rise in many countries, the result was often nationalization as private concessionaires, unable to meet costs at the contracted prices, went bankrupt.
- ⁵ The properties of pricing arrangements ranging from cost-plus pricing to fixed price contracts have been extensively discussed in the literature on regulated industries (see Armstrong, Cowan, and Vickers 1994 and Laffont and Tirole 1993).

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