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## Moral hazard in repeated procurement of services<sup>☆</sup>



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### ABSTRACT

This paper analyzes repeated procurement of services as a two period model with a potential repeated agency relationship. In the first period, there is an incumbent who provides a service. In the second period, there is a contest stage in which the principal selects the next service provider. The agents' effort is non-contractible and the contest stage is the mechanism to mitigate potential moral hazard problems. The principal takes account of the past service effort in the contest stage by choosing the weight of past effort and the degree of substitutability between past and current efforts. The results show that, when the principal does not value contest effort, considering past effort as the relevant effort in the contest is optimal. When the principal values contest effort and effort cost increases, decreasing substitutability between efforts is optimal.

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## 1. Introduction

Analyzing service procurement procedures is relevant for many public and private situations because of the economic importance of the services sector. In 2013, the ser-

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vices sector represented 70% of the world's GDP (World Bank, 2016). Repeated service provision after contests, the situation studied in this paper, is commonly used in public procurement which represents around 20% of the GDP in OECD countries and around 14% in that of non-OECD countries (Audet, 2002).<sup>1</sup> Public procurement is usually regulated with selection mechanisms that have a double role in the periodic provision of services. Firstly, they allow to increase competence (and reduce potential corruption) by challenging the incumbent's position in several degrees. For instance, the European Union's contracting rules establish three kinds of procedures (open, restricted and negotiated procedures) that guide the contracting authority in selecting an economic operator. Secondly, selection mechanisms can avoid shirking behaviors when the incumbent's past performance is taken into account in deciding future service providers.<sup>2</sup> This last role is particularly important for contracting agencies that, given the intangible nature of services and the potential hindrances to the different contractual dimensions, find difficult to contract service effort and need to motivate the service provider not to shirk.

Past performance is one of the criteria that the contracting authority can take into account in addition to the cost bidder, the candidate's corporate social responsibility, etc. However, past performance usually has a low weighting in contests and, especially when Treasury is pressured, it is not taken into account and contracts are assigned to the lowest cost bidder.<sup>3</sup> Omitting past performance in selecting a service provider can entail a moral hazard problem because service performance is intangible and difficult to demonstrate. As an example, consider a fireworks contest organized every July by the town council of Tarragona, Spain. The winner of this contest is hired to provide the fireworks in the town festival in September but is not allowed to participate in the next year's fireworks contest. As a consequence, it has been commonly recognized that contest winners perform higher quality fireworks during the contests than during the festival. Moreover, the contest can be designed according to the contracting authority's needs or ideology either to prevent candidates from exerting useless contest effort (to avoid, for example, lobbying) or, contrary, to demand a sunk contest effort such as an application fee or a service demonstration (prototypes, project drafts, etc.). The results from this paper show that introducing a biased contest that takes account of past performance could mitigate possible moral hazard problems at the service stages while respecting the principal's preferences over contest effort.

This paper focuses on a potentially repeated agency relationship between a designer and an incumbent to model a situation with repeated procurement of services. In period 1, there is an incumbent agent who provides a service (service 1). In period 2, there is a contest stage (contest 2) in which the designer chooses the provider of the second period

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<sup>1</sup> For example, in 2013, the US government allocated 462.2 billion dollars to public procurement contracts (US Government Spending, 2014), and, in 2010, European countries allocated more than 420 billion euros to public procurement contracts (European Commission, 2011).

<sup>2</sup> Spagnolo (2012) analyzes of the role and use of past performance in procurement, specially in US and Europe.

<sup>3</sup> Operators, however, can be excluded from future contests because they are bankrupt, have been found guilty of grave misconduct, etc.

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