

## THE AUCTION VERSUS NEGOTIATION TRADEOFF IN PUBLIC PROCUREMENT UNDER POLITICAL SCRUTINY

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**ABSTRACT.** Should public authorities use competitive bidding or negotiation to select a contractor for public procurement contracts? Competitive bidding has traditionally been seen as the most effective procedure to achieve value for money and to avoid favouritism and corruption in public procurement while ensuring a transparent and competitive process (Bulow and Klemperer, 1996). Yet, recent developments in the economic literature tend to mitigate this common wisdom and suggest that the advantages of competitive bidding are not as clear cut (Bajari, MacMillan and Tadelis, 2010; Guasch, 2008; Estache et al., 2009 etc.). Notably, these works show that it is more efficient to select providers of complex goods or services through negotiated procedures. In this paper, we investigate the motivations of public authorities to award public works procurement contracts using either auction or negotiation. In addition to the economic efficiency argument presented previously, we consider Spiller's proposition concerning the impact of "third party opportunism" on public contracting (Spiller 2009, 2011) to address whether transactions between public and private agents can be driven by considerations beyond the economic efficiency. In particular, public authorities may be biased towards the use of auctions in public procurement since they are politically elected and therefore subject to public scrutiny. Our empirical study relies on an exhaustive database of 2,671 public work procurement contracts in 2007 undertaken by 897 French municipalities, for which we have added information on municipal elections. Our empirical results show that electoral pressure does play a role in the municipalities's decision to award public procurement contracts through auctions or negotiations. More specifically, a more concentrated political market and a higher score obtained by the political competitor increases the probability that a municipality relies on auction to award a public work procurement contract. The motivation in such case could be to avoid suspicion of favouritism and corruption from a political challenger. Our empirical study therefore provides some support to Spiller (2009, 2011).

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## SECTION 1: INTRODUCTION

Public procurement, which refers to the public authorities' activities of purchasing goods, works and services, is currently the subject of substantial changes in France and, more generally in Europe. On the one hand, the liberalization of utilities industries and the search for new provision modes by public authorities (e.g. public-private partnerships) are likely to accelerate the use of outsourcing. On the other hand, the French regulation of public procurement has recently been modified to be harmonized with European directives. Such harmonization has required defining in a precise way the rules governing the attribution procedures of public procurement. It has also led to the introduction of new awarding procedures. Thus, the new 2006 regulation allows nine types of awarding procedures, from open auctions to bilateral negotiation but, in accordance with European recommendations, it favors competitive procedures, and more particularly open and restricted auctions. Because competition is a fundamental principle of the regulations governing public procurement, auctioning the right to serve the market is indeed the preferred mode of selection. It is assumed to be the more efficient way to find supplying sources at the cheapest price and to ensure equal opportunity to potential suppliers. *A contrario*, negotiated procedures are considered as opaque and prone to favouritism. It is therefore not surprising to observe that auctions are used to award 70% of the procurement contracts in the public works sector in France while in Europe they correspond to 82% (Internal Market Scoreboard, 2009).

Yet, recent empirical and theoretical contributions in contract theory have shed light on the difficulties associated with this type of awarding procedure and shown that, in some cases, notably for complex goods or services, negotiation is more efficient than auctions. Guasch *et al.* (2008) or Estache *et al.* (2009) for instance show that concession contracts awarded via competitive tendering are more likely to be renegotiated than contracts attributed through negotiation, and they estimate the resulting additional costs to

amount to 10% of the initial contracted costs. Furthermore, the theoretical developments by Compte *et al.* (2005) and Lambert-Mogiliansky and Sonin (2006) show that competitive tendering procedures are not immune to corruption, collusion and/ or favouritism. At last, Bajari *et al.* (2001, 2006, 2009) add another argument to qualify the relative superiority of auction over negotiation. Their empirical studies show that, in the private works sector in the US, while buyers are free to choose their purchasing method, direct negotiation is the preferred option in more than 50% of the cases. The most recent developments in the literature on public procurement thus highlight the limits of competitive awarding procedures and point out that the trade-off between auction and negotiation should be made according to the characteristics of the project (notably its complexity) and of the actors (notably the public buyers' expertise and competences in public procurement) as well as degree of competition among suppliers (Bajari *et al.* 2001, 2006, 2009, Estache *et al.* 2009, Chong *et al.* 2010). These determinants mostly rely on economic efficiency considerations.

However, recent contributions address the role of politics in public procurement. Hytinen *et al.* (2009) study the effects of political aspects on public procurement in Swedish municipalities using data on cleaning services. They emphasize that political identity of the governing party has an impact that affect procurement outcome notably concerning the choice of local firms. On the other hand, it doesn't impact significantly the decision to procure, the decision to restrict entry or the number of invited firm. Coviello and Gagliarducci (2011) focus on another aspect of politics's impact on public procurement using Italian data. They investigate the extent to which political turnover can affect the functioning of public procurement auctions. In this paper, we aim at investigating another aspect of politics' impact on public procurement: the impact of political challengers' pressure on the decision to award public procurement contract. In a companion paper (Chong *et al.* 2011), we argue that the tradeoff between auction and negotiation in public procurement include political considerations: for a public buyer the desire to prevent political opponents from suspecting him of favoritism, which is most probable if he chooses negotiation instead of auction procedure to award public contract. This attitude aims at contesting

politician in business on the political market. This argument relies on latest Spiller's work on "third party opportunism" (Spiller 2009, 2011). Third party opportunism, especially political (opponent) opportunism differs from private opportunism on one hand, which is the "standard" nature of opportunism and from governmental opportunism on the other hand (Williamson 1976, 1988, Levy and Spiller 1984, Spiller, 2009). Political opportunism is the opportunity to behave opportunistically vis-à-vis the public buyer, through public contract scrutiny. By definition, political competitors are part of third party, which is fundamental in democratic society. However, as interest groups, they are interested and may sometimes even be biased, in the sense that they may behave opportunistically (e.g. provide information only when it is to their advantage and even lie or transform reality). Notably, they may have incentives to challenge the "probity" † (Williamson, 1999) of the public buyer, thereby affecting directly the perceived probity of the public buyer. Such incentives may exist when third parties compete with the public agent in the political market. Benefits may arise in the political sphere if, through its actions, the political opponent discredits the politician in power which incurs significant time and expense to defend its actions. In the extreme, he could be constrained to leave its public position or could lose the next election‡. Spiller (2009) show that probity, and the suspicion of lack of probity, is what drives much of the feature of public contracting. Our aim is to test this proposition in the case of one feature of public contracting which is particularly sensitive to probity: the choice of the award procedure in public procurement. We want to assess whether the massive use of auction in public procurement is dictated by economic efficiency consideration or whether it can be explained by some political considerations. More precisely, the choice of an auction procedure to award public procurement contract, which is seen as a way to avoid suspicion favoritism, may be justified by the high risk of political opportunism more than by economic efficiency

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† Williamson (1999) raises the hazard of probity as the fundamental hazard distinguishing some public transactions. He defines "probity transaction" as those having a strong need for loyalty (to the leadership or to the mission and process integrity).

‡ For a study of the workings of third party opportunism (foundations and impacts) see Spiller (2009)

consideration. We thus aim at testing empirically the following proposition: The higher political scrutiny, the more public buyers will choose auction procedure

The paper is organized as follows. Section 2 presents the setting of the French public procurement and the French electoral system at the municipality's level in order to emphasize the way political scrutiny may be exercised and to interpret the political data we use in our regressions. Section 3 is devoted to empirically investigate the main determinants of the choice of procedure in the French construction sector using both economic efficiency and political consideration. This econometric analysis suggests that public buyers' choices regarding awarding procedures are less dictated by economic efficiency considerations than by the fear of being suspected of favouritism.

## SECTION 2: SETTING OF FRENCH PUBLIC PROCUREMENT

Public procurement refers to the public authorities' activities of purchasing goods, works and services. These purchases range from simple items such as pens and paper clips to complex goods or construction works. Hence public procurement markets represent a major part of economic activities. For instance, in the European Union, total public procurement is estimated at about 17% of EU GDP (€2000 billion) in 2007<sup>§</sup>, while in France it represents 16.6% of GDP.\*\*

Our study focuses on public work contracts, which represent 35% of the procurement contracts in 2007 in France. The EU Directive defines public work as "*the outcome of building or civil engineering works taken as a whole that is sufficient of itself to fulfill an economic and technical function*" (EU Directive 2004/18/EC). Given the definition provided by the EU Directive public works cover the whole

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§ Source: Internal Market Scoreboard, n° 19, July 2009.

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Source:

[http://ec.europa.eu/internal\\_market/publicprocurement/docs/public-proc-market-final-report\\_en.pdf](http://ec.europa.eu/internal_market/publicprocurement/docs/public-proc-market-final-report_en.pdf).

range of construction works from site preparation, complete or part construction and civil engineering utility sectors, building installation (electrical, plumbing and sanitary, mechanical etc.) and building completion. This diversity translates into various situations regarding the level of complexity, coordination problems, uncertainty or potential opportunistic behaviors from contracting parties.

The French Public Procurement Code (*'Code des Marchés Publics'* CMP (2009)), initially adopted in 1964 and since then modified in a recurring way<sup>††</sup> holds that public buyers may choose among 9 awarding procedures (8 of them are formalized procedure while one of them - the MAPA - is an adapted procedure with large room for manoeuvre given to the public buyer)<sup>‡‡</sup> for work contracts between € 4,000 net of VAT and € 5,150,000 net of VAT.<sup>§§</sup> Beyond the threshold of 5,150,000, competitive tenders become the default procedure. These award procedures differ in various dimensions including publication rules, openness to effective competition, selection criteria and process. If one focuses only on auction- and negotiation-based procedures<sup>\*\*\*</sup>, one can find that open competitive tender is by far the favorite choice of French public buyers and, altogether, open and restricted auctions are used for about 72% of public work contracts over the three years 2005-2007.

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†† The last amendments to the Public Procurement Code (*'Code des Marchés Publics'*) was made on the 5th of september 2009 (<http://www.legifrance.gouv.fr/affichCode.do?cidTexte=LEGITEXT000005627819&dateTexte=vig>).

‡‡ The 9 procedures are the following: 1) open competitive tender, 2) restricted competitive tender, 3) negotiation with publication of a contract notice and call for competition, 4) negotiation with publication of a contract notice but without call for competition, 5) negotiation without publication but with call for competition, 6) adapted procedure (MAPA), 7) competitive dialogue, 8) contest and 9) dynamic system purchase.

§§ These threshold are those used in 2007; they have been slightly modified in 2010, the upper threshold being € 4,845,00.

\*\*\* This covers about 90% of all public work procurement contracts in France between 2005-2007.

In France, a committee, the “commission d’appel d’offre”, is in charge of awarding public procurement contracts. The committee’s role is basically to examine various tenders received in a public procurement project, and to choose from the received offers the most economically advantageous proposal. According to the law, the committee has to be made up of the elected mayor or his/her representative, and members of the municipal council. In particular, the law requires that members composing the committee have to reflect to a certain extent the composition of the municipal council (Code de Marchés Public 2006, Titre III, Chapitre 1er, Section 1, Art. 22)<sup>†††</sup>. Given that the municipal council in France is elected, the committee is therefore made up of politicians. As such, we believe that accounting for political incentives could be relevant for understanding the procurement procedure. In particular, how a public procurement contract may be awarded may therefore be influenced by political motivations in addition to economic considerations.

To better understand how political incentives are shaped in the French context, we discuss briefly in the following the electoral system for French municipalities.

In France, municipal councils are the decision-making bodies and are elected by direct universal suffrage for a renewable six-year term. Contrary to some other countries, these elections take place at the same period for every municipality. The last elections were held in 2001 and in 2008.<sup>†††</sup>

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<sup>†††</sup> More specifically, the law requires that the main opposition forces in a municipality have to be represented in this committee. The way that the seats in the committee are distributed is based on results of that each political force has obtained during the municipal election. In particular, the composition of the committee has to respect a certain criteria to reflect the force of the opposition in a municipal council.

<sup>†††</sup> Note that the municipality elections were supposed to take place in 2007, 6 years after the 2001 elections, but the 2007 municipal elections were delayed until 2008 because of the French presidential election in 2007.

The French law organizing municipal elections distinguishes the number of council members and the electoral rules according to the size of a municipality. In accordance with the law, the municipal council may be composed of 9 elected members for small municipalities, up to 69 elected members for the largest ones (those with more than 300,000 inhabitants). The rules governing municipal elections draw a line between municipalities with a population of 3,500 inhabitants and those beyond this threshold. The biggest cities in France—Paris, Marseille and Lyon—are subject to specific electoral regimes because of the size of their population.

For municipalities whose population is larger than 3,500 inhabitants, the municipal council is elected according to a two-ballot multi member block list system that combines the rules of the majority voting system and the proportional voting system. In particular, during an election, voters are given ballot papers with lists of candidates representing different political parties, and voters have to choose a single list among the various lists. There may be two rounds to the election process. In particular, if a list obtains the absolute majority and that quarter of registered voters have turned out during the election; the list obtains half of the number of seats to be filled. In this case, the remaining seats are proportionally distributed among all other lists. Otherwise, lists which have obtained 10% of votes will go on to a second round of election is held and all seats are at stake. Results of this second round will enable the winning list to get half the seats at stake, while the remaining seats are distributed proportionally.

For small municipalities (those with less than 3,500 inhabitants), members of the municipal council are elected according to an open list majority rule. More specifically, voters are given ballot papers with lists of candidates representing different parties, and they can vote for candidates from a single list or from difference lists. In this case, votes for each candidate is counted individually. These elections can involve two rounds as well: In particular, absolute majority (with a 25% turn-out rate of registered voters) ensures that a candidate is elected. If any seats remained to be filled, then a second

round of election follows, and top-scoring candidates are elected.

These characteristics of the French electoral system seems to us to suggest that electoral competition may be best accounted for using results from the first round of elections. Moreover, it may be important to take into account the size of population in a municipality, since electoral rules are different according to the size of population in a municipality. This could potentially shape the how politicians' incentives towards choice of an award procedure. Indeed, different set of rules may have a different impact of the strength of electoral competition, and thus influence the ways with which politicians react to these rules.

### **Section 3 : Empirical analysis of the impact of political scrutiny on the choice of awarding procedure**

#### *3.1. Data description*

We believe that procurement practices by local public authorities provide an adapted empirical setting to investigate the impact of third party (political) opportunism on how procurement contracts are awarded. Indeed, representatives of local public authorities, such as municipalities and regions, are elected by citizens, and are therefore likely to be motivated by electoral considerations. Moreover, local public authorities operate at a scale that is closer to citizens, as opposed to central public authorities such as the presidency and /or central government. They are also more directly involved with procurement. As such, citizens may be more sensitive with respect to decisions made local public authorities, which may concern them more directly. Electoral considerations and pressures may be stronger for local public authorities, and hence, making third party political opportunism a relevant aspect to be taken into account to understand public procurement practices. Electoral pressure may also vary for a local public authority to another. This variation would help us to better identify how political opportunism affects the way public procurements are conducted. In this paper, we focus on public procurement practices of municipalities in France.

For our purpose, we rely on an original database of public work procurement contracts by municipalities in France. In our opinion, public work contracts are suitable for our investigation as they involve various types of projects, from highly customized projects to fairly standard goods. When suppliers have to meet particular specifications desired by a public authority, the choice of an award procedure becomes relevant. Because such specifications may be hard to specify *ex ante*, the award mechanism plays an important role in ensuring that a sound and working relationship between the supplier and a public authority (Bajari and Tadelis, 2000; Bajari, McMillan and Tadelis, 2010 etc.). In particular, recent developments in the literature have shown that auction mechanisms are more likely than negotiations to lead to frictions in the relationship between transacting partners. This yields higher transaction costs when auctions are used to source a highly customized good. As such, the higher the need for customization of a project, the more likely negotiation could achieve efficient sourcing of a good. This may be why construction works are often used in the literature to explore issues related with contract award procedures.

Data on public works procurement contracts in our sample come from the French Economic Observatory of Public Procurement (*Observatoire Economique des Achats Publics*) of the French Ministry of Economy. This information corresponds to public works contracts granted by French municipalities in 2007, and is exhaustive for all public work contracts beyond a threshold of 90 000€. Indeed, the French public procurement legislation requires all contracts whose value is at least the lower threshold to be notified with the Ministry of Economy. For the purpose of our analysis, we restrict our attention also to contracts whose value falls below the threshold of 5 150 000€.§§§ In 2007, the French public procurement legislation also allows public authorities to choose freely among various award procedures when the contract to be granted is below the higher

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§§§ Public work contracts whose value is beyond this threshold are obliged by law to be granted through an open competitive tendering procedure.

threshold (Code de Marché Public 2006). Moreover, we set aside public contracts awarded through other existing procedures, namely competitive dialogue (which was introduced in mid 2007), contests (which are used only for very specific projects) and the adapted procedure (which could cover in fact some form of competitive tendering to some form or negotiation, and as such, without any further information, we are unable to know the precise nature of the award procedure used).

We have also managed to obtain information on the political landscape in French municipalities. In particular, our data on municipal politics relates to electoral variables in 2001. Politicians in place in French municipalities in 2007 (year for which we observe public procurement contracts) were indeed elected in the 2001 municipality elections. These data comes from the French Ministry of Internal Affairs. We believe that information related to election outcomes can provide an objective basis to understand and measure relative strength of political forces within a municipality.

After merging both data sets, and eliminating observations for which we have insufficient information, the final sample used in our analysis is composed of 2 671 public work procurement contracts made by 897 municipalities in 2007.

### *3.2. Empirical specification*

We subscribe to the existing typology in the literature and categorize various public contract award procedures into two broad groups: auctions and negotiations. More specifically, in our analysis, open and restricted competitive tenders correspond to what we call auctions, whereas negotiation procedures, with or without prior advertisement, is termed as negotiation. Our dependent variable is therefore a dichotomous variable, Auction, which describes the procedure used to award a contract and takes the value 1 when auction is the selected awarding procedure, and 0 when negotiation is chosen. Consequently, we use Probit analyses to investigate whether political scrutiny have an impact on how municipalities award their public work

contracts in 2007 at the contract level.

To consider how political scrutiny affects award mechanisms, we rely on a set of variables to approximately measure the intensity of political scrutiny. These variables are based on a municipal's election outcome. In particular, we focused on results from the first round of municipal elections in 2001, as we believe that electoral pressure is best measured by outcome at this stage of the election. Indeed, for any political parties, the chances of winning and/or forming a coalition for the local government depend crucially on outcome at this stage of the election.

We measure electoral competition in two ways. On the one hand, one can look at the structure of the political market as a means of approximating electoral competition, and thereby the intensity of political scrutiny. In our analysis, we rely on a Herfindahl concentration index of the political market (HHI). To construct the Herfindahl index, we measure "market shares" of political parties by the share of votes that they have obtained during the first round of a municipal election. A higher value for the index indicates a more concentrated political market, and therefore political scrutiny is likely to be lower.

Note, however, that the intensity of political competition as measured by HHI relies on an analogy to measuring competition in an economic market (i.e., a more fragmented market is a sign of more intense competition). This may not be true in a political market. In particular, one may think that the two main political parties mostly determine the intensity of competition in the political market. Indeed, electoral competition can be more intense if the two main political forces in a municipal have a fair chance of winning the election. This should increase in higher incentives for the parties to fight for votes, leading to a higher intensity of political scrutiny. As such, we exploit information on the election outcome of the two major political forces to construct our second set of measures for electoral competition.

We consider that the two major political forces to be the ones that have obtained the highest and the second highest share of votes in

the first round of a municipal election. We rely on four different variables to measure the intensity of electoral competition exploiting information on the two main political forces: firstly we use directly the share of votes obtained by the two main parties (respectively *ScoreWinner* and *ScoreOpposition*). In particular, a higher score for the opposition party, the stronger the intensity of electoral competition may be. Secondly, we compute the difference between the share of votes obtained by the winner of the first round of the election and that of the main opposition ( $\text{ScoreDiff} = \text{ScoreWinner} - \text{ScoreOpposition}$ ). The greater the difference in scores between the two parties, the lower the intensity of electoral competition may be. We have also constructed the following variable as a means of measuring the extent to which the two main parties in a municipality are symmetric competitors in the political market:

$$\text{Symmetry} = \frac{\text{ScoreOpposition}}{\text{ScoreWinner}}$$

This index tends towards 1 when the two main parties in a municipal election are symmetric and it tends to be smaller when the two main political forces are asymmetric. One could imagine that electoral competition is likely to be more intense when the main political forces in a municipality are more symmetric with respect to their voters. Finally, we have also computed a relative measure of political strength between the two main political parties by normalizing *ScoreDiff* with the share of votes obtained by the winner of a municipal election:  $\text{RelStrength} = \text{ScoreDiff} / \text{ScoreWinner}$ . We believe that a higher value of *RelStrength* indicates a lower level of intensity in the electoral competition, since this is the case when the difference in the share of votes is higher and in favour of the winning political party.

Table 1 summarizes the relation between the various measures discussed above, the intensity of electoral competition and how we expect these variables to affect the use of auctions by municipalities if according to our hypotheses.

*Table 1 Measures of electoral competition*

Variables	Relation to the intensity of electoral competition	Expected impact on the use of auctions
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HHI	-	-
ScoreWinner	-	-
ScoreOpposition	+	+
ScoreDiff	-	-
Symmetry	+	+
RelStrength	-	-

In addition to these measures of electoral competition, we also include election turnout as a control variable for the political dimension (Turnout). While we are not convinced that this variable can actually reflect the intensity of electoral competition directly, voters' turnout may contribute to shaping the incentives of political parties and local governments in their policy stance.

Another set of variables that are important in our empirical analyses relates to those measuring economic efficiency. Relative efficiency of auctions and negotiations in the broader procurement context can depend on the intensity of competition, the expertise of the procuring agent and the complexity of the project (Bajari, McMillan and Tadelis, 2010 etc.). We use the number of offers received for a public work procurement project (NbOffers) as a measure of the intensity of competition. More intense competition is expected to yield higher benefits when auctions are used. Therefore, we expected that NbOffers to have a positive impact on the probability that auction be chosen to award a contract.

In our analysis, we use three variables to measure the procuring agent's level of expertise with public procurement based on the agent's experience in 2005 and 2006 with public work procurement. More particular, a first variable, Exp, is the number of all public work projects undertaken by the agent in 2005 and 2006, while a second variable, ExpAuction (resp. third variable, ExpNego), correspond to the total number of public work procurement projects awarded through auctions (resp. negotiations) in 2005 and 2006 by a given agent.\*\*\*\*

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\*\*\*\* These three variables are not perfectly correlated because some public work procurement contracts were awarded using other types of

The last two variables are intended to capture how competent or familiar an agent is with respect to the specificities and rules governing that particular award procedure, whereas the variable *Exp* is intended to approximately measure the level of experience that an agent has with respect to public work. *Exp* and *ExpAuction* are expected to positively influence the probability that auction is used to award a contract, while *ExpNego* is expected to have a negative impact on our dependent variable.

As for complexity of a project, we follow the literature and consider that this dimension can be accounted for by the value of public work project (*LnValue*, measured in logarithmic terms) and the duration of a procurement contract (*Duration*) (Bajari et al., 2010). Indeed, projects and the associated contracts may be harder to be specified with precision when they are more expensive and/or when they last longer. This means these projects are more likely to be subjected to *ex post* hazards that are non-contracted for. Better *ex ante* coordination, through the use of negotiations, may be useful for these projects. We also include the number of subcontractors involved in a project (*NbSub*) as a supplementary measure for complexity, as more subcontractors may mean more coordination to accomplish a project, and also a higher number of specialized skills necessary to accomplish a project. Both aspects should surely imply a more complex public work project. We expect these variables approximating complexity to have a negative impact on the probability that auction is chosen to award a project.

Finally, we also take into account the nature of public work in a contract. To this end, we use the nomenclature defined in the EU's Common Procurement Vocabulary (CPV) at the 4-digit level. This nomenclature gives information on the nature of the public work involved in a procurement contract. We use a set of dummy variables to account for this dimension in our regression analysis. We have also included the population of a municipality in 2007 in logarithm, *LnPop*, as a control variable in our analysis. Population may be relevant in our analysis for several reasons: firstly, the political pressure may differ

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procedure than those considered in our analysis.

from big municipalities to small ones. This is likely to have an impact on how political scrutiny impacts on award procedures used. Secondly, bigger municipalities may have more resources available, and therefore may have a higher level of expertise. This could also have an impact on the choice of award procedures used. Finally, the size of a municipality's population may also reflect the municipality's financial situations. As such, it may be determinant on how sensitive a municipality is with respect to economic and political motivations.

Table 2 summarizes the definition and shows some descriptive statistics of the variables used in our analysis based on our sample. The correlation matrix for these variables can be found in the appendix.

*Table 2 Description and summary statistics of variables used in our analysis*

Variable	Definition	N	Mean	Std. Dev.	Min	Max
Auction	Variable takes value 1 if a procurement project is awarded using a competitive tendering procedure	2671	0.77	0.42	0	1
HHI	Herfindahl concentration of political market, as measured by share of votes of each party in the first round of a municipal election	2671	0.57	0.24	0.18	1.00
ScoreWinner	Share of votes of the winning party	2671	0.65	0.20	0.21	1.00
ScoreOpposition	Share of votes of the main opposition party	2671	0.25	0.15	0.00	0.50
ScoreDiff	ScoreWinner-ScoreOpposition	2671	0.47	0.32	0.00	1.50
Symmetry	ScoreOpposition/ScoreWinner	2671	0.41	0.34	-0.10	1.00
RelStrength	(ScoreWinner - ScoreOpposition)/ScoreWinner	2671	0.53	0.32	-0.50	1.00
Turnout	Share of voters' turnout over total number of registered voters	2671	0.65	0.10	0.29	0.98
NbOffers	Number of offers received in a procurement market	2671	5.82	9.15	1.00	94.00
Exp	Sum of public work projects awarded in 2005 and 2006	2671	51.73	126.14	1.00	644.00

2760

ExpAuction	Sum of public work projects awarded using auction in 2005 and 2006	2671	12.69	26.14	0.00	132.00
ExpNego	Sum of public work projects awarded through negotiations in 2005 and 2006	2671	3.56	7.18	0.00	36.00
LnValue	Value of the project (in logarithm)	2671	12.45	0.76	11.41	15.42
Duration	Duration of the project	2671	10.15	11.08	0.00	90.00
NbSub	Number of subcontractors in the project	2671	0.11	0.43	0.00	5.00
LnPop	Population of a municipality in 2007 (in logarithm)	2671	9.44	1.79	4.03	12.99

### 3.3. Results and discussion

Results from our Probit regression are shown in table 3. Specification (0) reproduces results from Chong, Staropoli and Yvrance-Billon (2010) for our sample, whereas specification (1) to (5b) adds variables measuring electoral competition to the regression. These estimations are obtained by considering different measures of electoral competition, especially electoral competition as measured by considering only the two main political parties in a municipality. In each of the regressions that consider alternative measures of electoral competition (specification (2a) to (5b)) between the two main political forces, we add HHI as a supplementary control to capture the overall structure of the political market (in those specifications marked with a “b”).

The results from specification (0) are on the overall consistent with those in Chong et al. (2010) using a larger sample. Intensity of competition in the procurement market (NbOffers) and the experience of municipalities with each award procedure influence the likelihood that auction is chosen to award a contract in the expected way. On the other hand, those variables indicating a project’s complexity do not have a significant impact on the choice of award procedure, contrary to results that have been obtained using data from private procurement.

From our regression results, we can see that political scrutiny does play a role in motivating a municipality to use auctions to award their public work contracts. It seems from our regression results antagonism between the main political parties is a more relevant measure of electoral competition. Indeed, our HHI index, which captures the overall structure of the political market, is not significant in most of our regressions except for (4b) in which it does not have the expected sign. On the other hand, all our measures of electoral competition focusing on the interplay between the two main political parties are all significant at the usual thresholds. This seems to suggest that electoral competition may be shaped in particular by the interplay between the two main political parties in a municipality.

Moreover, estimates on these measures show that a stronger opposition in a municipality increases significantly the probability that auction is the preferred award procedure; and that the larger distance between political supports for both parties leads to a significant decrease in the probability that auction is used to award a contract, *ceteris paribus*. Alternative relative measures of electoral competition (Symmetry and RelStrength) also produces estimates consistent with this idea. These results indicate that municipalities where there is a stronger opposition party have a higher tendency to appeal to auctions for public work contracts. The results are therefore consistent with our hypothesis based on political third party opportunism derived based on Spiller (2008, 2010).

Table 3 Estimation results from Probit regressions

	(0)	(1)	(2a)	(2b)	(3a)	(3b)	(4a)	(4b)	(5a)	(5b)
<i>Dep. Var.</i>	Auction	Auction	Auction	Auction	Auction	Auction	Auction	Auction	Auction	Auction
<i>Indep. Var.</i>										
HHI		-0.191 (0.166)		0.234 (0.662)		0.254 (0.287)		0.774* (0.445)		0.254 (0.287)
ScoreWin			0.416	0.157						



NbSub	0.022	0.024	0.021	0.020	0.022	0.021	0.023	0.020	0.022	0.021
	(0.073)	(0.073)	(0.073)	(0.074)	(0.073)	(0.074)	(0.073)	(0.074)	(0.073)	(0.074)
LnPop	0.091*	0.098*	0.109*	0.113*	0.094*	0.109*	0.088*	0.114*	0.094*	0.109*
	**	*	**	**	**	**	*	**	**	**
	(0.022)	(0.039)	(0.039)	(0.040)	(0.035)	(0.039)	(0.037)	(0.040)	(0.035)	(0.039)
Constant	0.428	0.128	-0.542	-0.556	-0.052	-0.432	0.212	-0.339	0.164	-0.089
	(0.596)	(0.864)	(0.914)	(0.913)	(0.805)	(0.891)	(0.834)	(0.876)	(0.831)	(0.862)
Nature of Public Works	Incl.									
Number of observations	2671	2671	2671	2671	2671	2671	2671	2671	2671	2671
Pseudo R2	0.2567	0.2577	0.2599	0.2599	0.2586	0.2589	0.2585	0.2596	0.2586	0.2589
Log-likelihood	1073.8	1072.5	1069.3	1069.2	1071.1	1070.8	1071.2	1069.7	1071.1	1070.8
	8	5	3	7	9	3	8	8	9	3

*Robust standard errors are given within parentheses. Significance stars: \* 10%, \*\* 5%, \*\*\* 1%*

Obviously, our results can be consistent with other hypotheses as well. One can in fact argue that a stronger opposition could actually induces that municipal government to make more efficient decisions through checks and balances. In this case, one should observe an increase tendency for municipality to rely on auctions to achieve better value for money and/or reduce favouritism and/or corruption. However, this hypothesis hinges on the fact that auction is always the best mechanism to award a contract and to avoid favouritism. As we have argued previously, recent development in the economic literature has casted doubts on the superiority of auctions with regards to these two dimensions. Hence, we feel that the relevant explanation for our observation is the one that we have put forward in our hypothesis.

Nevertheless, it should be noted that voters' turnout and ScoreWinner do not have a significant impact on the choice of auction

to award public work contracts.

## CONCLUSION

Although public procurement markets represent a major stake for economic activity and a large part of public spending, few empirical works have been made so far to investigate the procurement practices of public buyers. Yet, theoretical academic papers and regulations are full of recommendations regarding the way to organize such markets. Their advices can be summed up shortly as they largely emphasize the use of auctions to manufacture these markets.

However, a recent literature, mostly relying on transaction cost theory, highlights the potential difficulties (public) buyers may encounter if they systematically choose competitive tendering to award their procurement markets. More precisely, this literature points out the inefficiency of auction procedures to select providers of complex goods or services for which contracting is often subject to renegotiations.

What we intended to do in this article is to describe the practices of French public buyers and try to find empirical regularities in the way they attribute procurement contracts. Our study is based on an original database gathering the entire set of public works procurement contracts in France in 2007. The results of our empirical investigations question the efficiency of the French public buyers' choices. Indeed we show that their choices of awarding procedures do not depend on the projects' level of complexity, contrary to what happens in the private sector (Bajari *et al.* [2009]). In addition, auctions appear to be largely favored to award costly and lengthy contracts, while theoretically, in such circumstances, negotiated procedures are assumed to be more efficient as they are more flexible and thus less prone to *ex post* renegotiations.

In line with recent developments in positive political economy and transaction cost regulation approaches (Spiller 2009, 2011), we interpret this result as a consequence of third-party opportunism (e.g.

political competitors' opportunism). Public buyers' choices regarding awarding procedures indeed seem to be more dictated by the will to avoid the suspicion of favoritism generally associated with negotiated procedures. Our empirical results show that political aspects have an impact on procurement decision which may introduce bias in the choice of auction procedure. More precisely, we find that the higher the difference between the winner's score and the second best score (the higher the electoral comfort), the less pressure public buyers undergo by political competitors and the lower the probability to choose auction. In other terms, when political scrutiny is low, public buyers feel less pressure to be suspected of favoritism and have more room for manoeuvre in the choice of the award procedure.

## REFERENCES

- BAJARI P., HOUGHTON S., TADELIS S. [2006], « Bidding for incomplete contracts: an empirical analysis of adaptation costs », NBER Working Paper no. 12051.
- BAJARI P., MCMILLAN R., TADELIS S. [2009], « Auctions versus negotiations in procurement: an empirical analysis », *Journal of Law, Economics, and Organization*, 25 (2), p. 372-399.
- BAJARI P., TADELIS S. [2001], « Incentives versus transaction costs: a theory of procurement contracts », *RAND Journal of Economics*, 32 (3), p. 387-407.
- BULOW J., KLEMPERER P. [1996], « Auctions versus negotiations », *American Economic Review*, 86 (1), p. 180-194.
- CHONG E., STAROPOLI C., YVRANDE-BILLON A. [2010], « Auctions versus negotiations in public procurement: Looking for new empirical evidences », Document de travail de la Chaire EPPP no. 2010-04.
- COMPTE O., LAMBERT-MOGILIANSKY A., VERDIER T. [2005], « Corruption and competition in procurement auctions », *RAND Journal of Economics*, 36 (1), p. 1-15.
- ESTACHE A., GUASCH J.L., IIMI A., TRUJILLON L. [2009], « Multidimensionality and renegotiation: evidence from transport sector public-private partnership transactions in Latin America », *Review of Industrial Organization*, 35 (1-2), p. 41-71.
- GOLDBERG V.P. [1977], « Competitive bidding and the production of precontract information », *The Bell Journal of Economics*, 8 (1), p. 250-261.
- GUASCH J.L., LAFFONT J.-J., STRAUB S. [2008], « Renegotiation of concession contracts in Latin America: Evidence from the water and transport sectors », *International Journal of Industrial Organization*, 26 (2), p. 421-442.
- HYYTINEN A., LUNDBERG S., TOIVANEN O. [2009] « Politics and Procurement: Evidence from cleaning contracts », Discussion Paper n°.233, HEER
- KLEMPERER P. [2002], « What really matters in auction design », *Journal of Economic Perspectives*, 16 (1), p. 169-189.
- LAMBERT-MOGILIANSKY A., SONIN K. [2006], « Collusive market

- sharing and corruption in procurement », *Journal of Economics & Management Strategy*, 15 (4), p. 883-908.
- NAEGELEN F., MOUGEOT M. [1988], « Analyse micro-économique du Code des Marchés Publics », *Revue Economique*, 39 (4), p. 725-752.
- R.H., ZONA J.D. [1993], « Detection of bid rigging in procurement auctions », *Journal of Political Economy*, 101 (3), p. 518-538.
- SPILLER P. [2009], « An institutional theory of public contracts: Regulatory implications », in *“Regulation, Deregulation, Reregulation Institutional Perspectives”* , Ed. By C. Ménard, M. Ghertman, Edward Elgar
- SPILLER P. [2011], “Transaction Cost regulation”, NBER Working paper no. 16735

APPENDIX

A.1 The correlation matrix of variables used in our analysis

	Auction	HHI	ScoreWinner	ScoreOpp	Symmetry	ScoreDiff	RelStrength	Tournout	NbOffers	Exp	ExpAuction	ExpNego	LnValue	Duration	NbSub	LnPop
Auction	1.000															
HHI	-0.005	1.000														
ScoreWinner	-0.006	0.975	1.000													
ScoreOpp	0.069	-0.761	-0.818	1.000												
Symmetry	0.039	0.807	0.901	0.939	1.000											
ScoreDiff	-0.034	0.926	0.967	-0.938	-0.961	1.000										
RelStrength	-0.039	0.807	0.901	0.939	1.000	0.961	1.000									
Tournout	0.066	0.497	0.453	-0.223	-0.276	0.372	0.276	1.000								
NbOffers	0.047	-0.027	-0.029	0.068	0.048	0.048	0.048	0.023	1.000							
Exp	0.003	0.199	0.114	-0.008	-0.029	0.065	0.029	-0.237	-0.065	1.000						
ExpAuction	0.072	-0.211	-0.127	0.022	-0.006	0.086	0.006	-0.238	-0.034	0.970	1.000					

THE AUCTION VERSUS NEGOTIATION TRADEOFF

2769

ExpNego	-0.286	-0.234	-0.166	-0.006	0.007	-0.097	-0.007	-0.283	-0.049	0.778	0.698	1.000				
LnValue	0.051	-0.110	-0.085	0.028	0.026	-0.063	-0.026	-0.129	-0.103	0.173	0.171	0.108	1.000			
Duration	0.058	-0.131	-0.115	0.097	0.090	-0.113	-0.090	-0.155	-0.060	0.143	0.182	0.061	0.295	1.000		
NbSub	0.028	0.010	0.012	-0.007	-0.010	0.010	0.010	0.012	-0.023	0.054	0.052	0.025	0.190	0.117	1.000	
LnPop	-0.017	-0.663	-0.590	0.339	0.377	-0.506	-0.377	-0.755	-0.002	0.571	0.576	0.531	0.193	0.213	-0.001	1.000

Revenir sur la littérature sur le lien entre performance macroéconomique et succès électoral (public choice chapitre 19, p498) : qui les électeurs tiennent-ils responsable des performances économiques ?